Published 1 February 2026 by the University of KwaZulu-Natal
https://journals.ukzn.ac.za/index.php/JICBE

Journal of Inclusive cities and Built environment. Vol. 4 Issue 5

How to cite: B.O. Adegebo and A.A. Fadiya. 2026. Communicating Climate-Related Health Risks in Local Communities. *Journal of Inclusive cities and Built environment.* Vol. 4 Issue 5, Pg 76-90.

COMMUNICATING CLIMATE-RELATED HEALTH RISKS IN LOCAL COMMUNITIES

BY B.O. Adegebo and A.A. Fadiya

Published 1 February 2026

ABSTRACT

Scientific reports on climate-related health risks contain large amounts of information and academic jargon that are often difficult to understand by non-experts. Effectively communicating the health consequences of climate change in simplified contexts remains crucial for raising local awareness and enhancing individual and community response to climate-related health initiatives, especially in tropical cities. Using two purposefully designed semi-structured questionnaires administered to 150 respondents randomly selected across targeted groups, including children and adolescents, adults, and the elderly in Ado-Ekiti, an emerging city in Southwest Nigeria, this study investigates the communication tools that can most effectively disseminate information on climate-related health risks on a more personal level. It examines the communication barriers that limit people's access, understanding and attitudes toward climate-related health information. The study's findings could provide valuable insights that can improve how climate-related health concerns and mitigation policies are communicated to local communities, ultimately reducing population health risks.

KEY WORDS Climate Change, Health Vulnerabilities, Risk Communication, Local Communities, Nigeria.

Betty O. Adegebo: Department of Geography, University of Ibadan, Ibadan, Nigeria
Corresponding Author email: bettyadegebo@yahoo.com
Abiodun A. Fadiya: Department of Adult Education, Federal University Oye-Ekiti, Nigeria

1. INTRODUCTION

The scientific discourse on the health consequences of climate change shows that there are complex, direct, and indirect pathways by which the changing climate is affecting human health and well-being globally. These health impacts are brought on by human exposure to climate variations and extreme weather events, including heatwaves, flooding, and windstorms (Rocque et al., 2021). The indirect health effects of prolonged exposure to intense heat include physiological discomfort due to heat stress, heat exhaustion, and dehydration (Adegebo, 2022), as well as more subtle but deadly health effects such as the exacerbation of chronic illnesses like mental illnesses, cardiovascular, respiratory, and kidney diseases (Wagner et al., 2021; Deglon et al., 2023). Extreme weather events can have a direct effect on human health through physical injuries from windstorms and flooding, as well as illnesses and deaths linked to these extreme weather events (Suhr and Steinert, 2022). Food insecurity and nutritional issues are two more intricate ways that climate change is affecting human health through its effects on agricultural systems (Sorgho et al., 2020). It is evident from climate reports by the Intergovernmental Panel on Climate Change (IPCC) that anthropogenic climate change, rapid urbanisation, population increase, and urban heat islands will amplify these health impacts in the years to come, as the frequency and duration of extreme weather events are predicted to increase (IPCC, 2022).

While everyone is at risk, the projected impact varies geographically and demographically due to the combined effects of extreme weather events, exposure duration, and socio-economic factors that render certain regions more susceptible to climate-related health risks. For instance, countries in West Africa, such as Nigeria, have been recognised as the most vulnerable to health effects associated with climate change. This is due to observed and anticipated climate trends, the rapid pace of urbanisation, and intricate developmental issues (Aliyu and Amadu, 2017; Sylla et al, 2016; Adelekan et al., 2022). Fast-growing tropical cities in West Africa are particularly noted as major hotspots for climate-related health impacts (IPCC, 2022). Individuals with poor socioeconomic status, children, the elderly, outdoor workers, people with a chronic illness or disability, and women are among the vulnerable groups that are highly concentrated in these cities (Barry et al., 2018). This may have an impact on local communities' and individuals' ability to anticipate, manage, adjust to, and recover from health impacts associated with climate change.

To create awareness and build resilience to the inevitable impacts of climate change, the concept of framing, which explains how the presentation of information about a particular issue can affect an individual's perception and understanding of that issue, is one of the widely used concepts in risk communication (Guenther et al., 2024; Badullovich et al., 2020). Framing climate change as a public health problem and effectively communicating the health risks can encourage individuals and vulnerable communities to take climate action and policies seriously. It is suggested that climate risk communication should be framed to provide adequate information on the urgent need to address anthropogenic drivers of climate change at both individual and collective scales, as well as adaptation strategies and protective behaviours to reduce exposure and health vulnerabilities (Janković and Schultz, 2017). Increasing public knowledge, understanding, attitude, and response to climate-related information, efforts, and policies largely depend on effective risk communication (Maibach et al., 2011). It is also possible to promote group efforts in mitigation and adaptation measures by clearly defining and conveying the link between human health and climate change, as well as the health effects of climate change in local communities, and targeting groups (Glaas et al. 2015; Peters et al. 2022). Therefore, communication materials used for disseminating information on climate-related health risks are expected to be easy to understand and relatable to the targeted population. For example, the use of short or summarised messages and graphics may be easier to comprehend than long messages with complex scientific terms (Terrado et al. 2018; Sheshi and Yisa, 2024). Kreslake et al. (2016) noted that risk communication materials such as graphics and short messages used to explain climate-related health risks were found to be effective in influencing protective behaviours in vulnerable persons. Similarly, communicating short-term climate-related health risks has been found to improve individual and population responses to extreme weather events, such as heatwaves, flooding, and hurricanes, rather than long-term health risks (MacIntyre et al., 2019). This implies that individuals may respond positively to climate-related health mitigation strategies that address immediate risks perceived as personal, rather than long-term climate projections and risks.

Over the years, climate change awareness has been increasing in several West African countries, especially Nigeria, but not without scepticism. One of the main causes of inaction or indifference is still a lack of understanding of the threats posed by climate change (Olorunfemi, 2009). Previous studies have evaluated how media frame climate-related risks and the response of their audience (Adekola and Lamond, 2018; Ogundele and Sodeinde, 2025; Nwafor and Aghaebe, 2025). Even though people's perceptions of the risks associated with climate change vary greatly, many Nigerians living in large cities have experienced several climate-related events over the years, including flooding, windstorms, drought, and sea level rise, which have had negative impacts on their health and increased the number of vector-borne illnesses and injuries (Raimi et al., 2021; Mfon et al., 2022; Umar and Gray, 2023; Abdulwahab et al., 2024). This has raised the nation's awareness of climate change, influenced the population's

risk perception and emphasised the importance of taking preventative measures. Given the development and accessibility of digital technology, communication channels used for information dissemination remain vital for successful risk communication, in addition to framing climate-related health risks for targeted populations. This is to ensure that preventive information, and not just emergency information, is well disseminated in local communities. Depending on how information about climate change and human health is presented and conveyed, targeted groups can have a better understanding of climate-related health issues, such as the individual activities that might increase population risk.

Despite perceived tolerance to heat, it is still essential to appropriately frame and effectively communicate both the direct and indirect impact of exposure to climate variations and extreme weather events on human health, particularly the long-lasting but subtle effects of extreme heat exposure to vulnerable populations in many Nigerian cities. Various communication tools have been employed to raise awareness about the changing climate and how it affects diverse systems, such as health and agriculture (Ouedraogo et al., 2018; Ofoegbu and New, 2022; Sheshi and Yisa, 2024). Advancements in digital technology have also made media and social network platforms invaluable for disseminating climate-related information, but not without challenges (Ogwezi and Umukoro, 2020; Nwafor and Aghaebe, 2025). However, disparities in socioeconomic status, language, individual health, neighbourhood infrastructure, and personal digital technology use can influence how climate-related health information is accessed, trusted, and used (Aririguzoh et al., 2021; Nweze et al., 2023; Oramah et al., 2025). While large cities in Nigeria may focus on urban modification and mitigation strategies to address climate-related health impacts, emerging cities still have the opportunity to effectively plan urban morphology and develop vital public infrastructure, including transportation, energy, and waste management systems, that can cater for population growth while creating jobs and a sustainable, climate-friendly environment. There is also an opportunity to incorporate climate-related information at developmental stages as cities expand, to provide useful information on "what is where and why." Effectively communicating climate change information, health risks and adaptation strategies, particularly to vulnerable populations in these emerging cities, can help improve how climate-related initiatives are understood, appreciated, prioritised, and implemented.

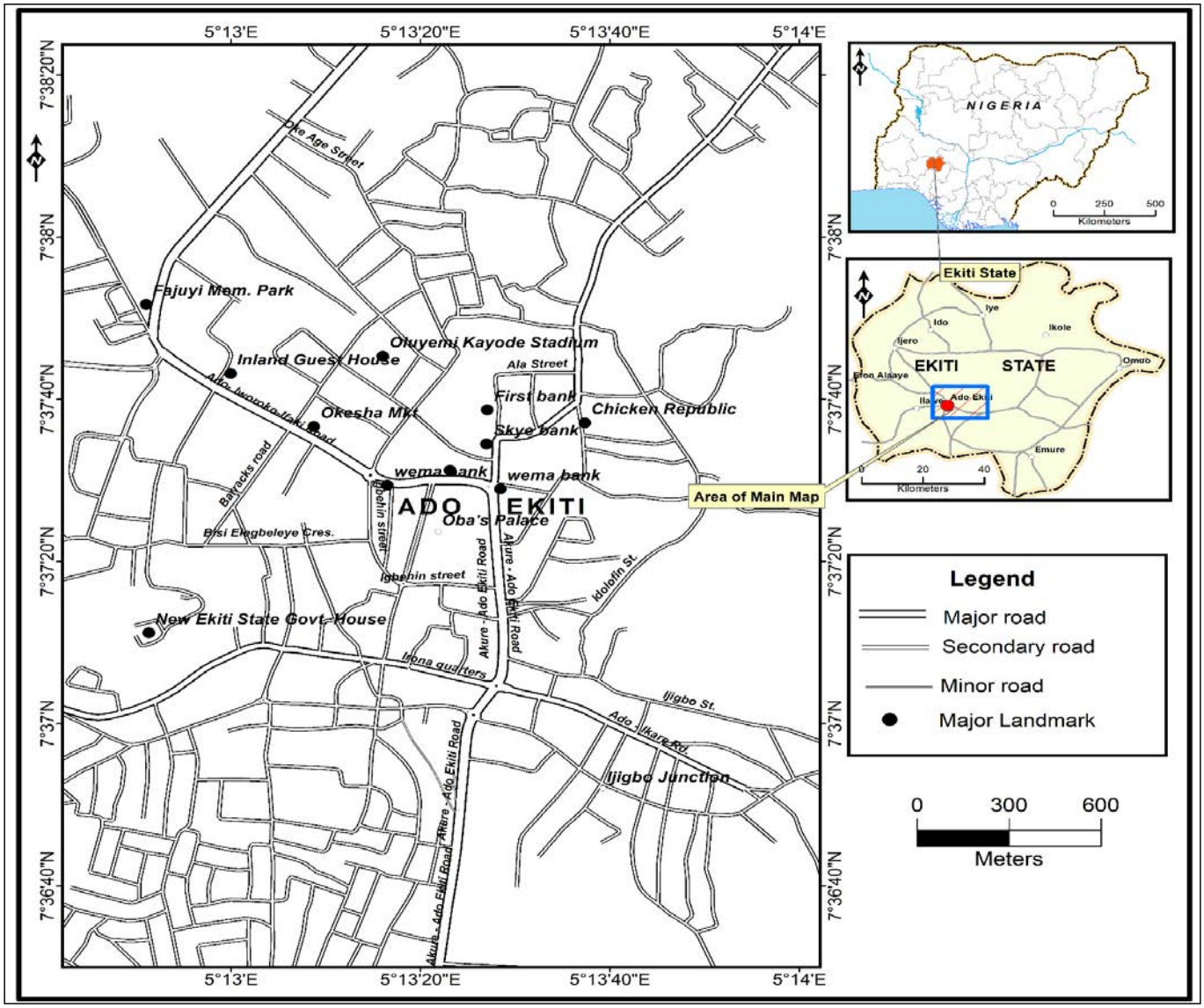
To better inform vulnerable groups, such as children, young people, and the elderly, about the health risks associated with climate change on a more personal level, this study examined the most effective communication channels in Ado-Ekiti, an emerging city in South West Nigeria. The study also examines current communication barriers that restrict people's and communities' access, understanding, attitudes, and responses to climate-related health information and mitigation initiatives. This can provide valuable information on climate and health communication strategies and improve how both short-term and long-term climate-related health information and interventions are disseminated in terms of context, communication channel and target population. It can also enhance an individual's climate perception, protective behaviours, and attitude towards government-led initiatives in their immediate environment.

2. MATERIALS AND METHODS

2.1. Study Area

Ado-Ekiti is an emerging city in south western Nigeria located between Latitude 7o34' and 7o44' N and Longitude 5o11' and 5o18' E (Figure 1). The city emerged as a major Yoruba city and state capital of Ekiti State following the creation of the state in 1996. The city has a total landmass area of approximately 345.25 km², with elevations ranging between 335m in the southeastern part of the city and about 730m in the southwestern part of the city (Adebayo, 1993). Ado-Ekiti's dual role as a state capital and local government area (LGA) has influenced the rapid increase in population, with an influx of people from satellite towns and rural areas driven by both infrastructural development and educational facilities. This resulted in the expansion of the city, characterised by growing built-up areas and a loss of vegetated land (Olofin and Oluwadare 2022). In 2006, the National Population Census (NPC) reported the city's population as approximately 308,621, with a population density of 43,986 persons per kilometre (NPC, 2006). According to the Ekiti State Local Government Statistics report for 2020, this population has grown significantly over the last two decades. It is currently estimated to be around 541,521. Ado-Ekiti is facing its fair share of environmental problems brought on by urbanisation and the effects of climate change (Aladelokun and Ajayi 2014; Owolabi and Adebayo 2013; Olofin and Oluwadare 2022). The city has a tropical wet and dry climate, with its wet season running from April to October and the dry season from November to March. The mean annual temperature ranges between 21 °C and 28 °C, with February and March being the hottest months.

Figure 1: Map of Ado Ekiti Metropolis



Source: Authors (2024)

2.2 Data Collection

This study employed two purposefully designed semi-structured questionnaires: one for children and adolescents between ages 8 and 18 years, and the other for young adults (18 years and above) and the elderly. A total of 150 respondents were randomly selected (50 respondents for the children/adolescent group and 100 respondents for the young adults and elderly persons). Children and adolescents were provided with consent forms to be filled out by their parents or guardians before the survey was conducted, while individual consent was obtained from adult participants. The questionnaires were used to obtain information on the level of awareness of climate change impact on human health, sources from which information on climate-related health impacts were received, how well the information source is trusted and understood, what communication tool and how easily accessible the information is, and what they plan to do with the information received to reduce climate-induced health risk. Data collection was conducted between January and March 2024. Out of the 150 questionnaires, 145 were valid for analysis (46 for children/adolescents and 99 for adult/elderly respondents). All statistical analyses to determine associations between sociodemographic characteristics and information sources/tools, as well as barriers, were carried out using Microsoft Excel and the Statistical Package for the Social Sciences (SPSS v. 21.0).

3. RESULTS

3.1. Demographic characteristics of respondents

The survey result (Table 1) shows that out of the 99 adult respondents, 43.4 per cent were between the ages of 18 and 25, and 22.2 per cent were above 60 years old. The majority of these respondents (55.6%) were female, and the proportion of married and single individuals (49.5%) was equal. Only 11.1% of respondents were from the Igbo tribe, compared to over 80% of Yoruba respondents. Since over 75% of these respondents were postsecondary institution graduates, the majority were educated. While 26.3 per cent of them were unemployed, a small percentage were in business or trade (24.2%), civil or public service (20.2%), artisanal work (9.1%), and pensioners (11.1%).

Table 1: Socio-demographic characteristics of Adult/Elderly respondents (n=99)

Indicator	Frequency	Percent
Age (Years)		
18-25	43	43.4
26-40	16	16.2
41-50	15	15.2
51-60	3	3.0
Above 60	22	22.2
Sex		
Male	44	44.4
Female	55	55.6
Marital Status		
Single	49	49.5
Married	49	49.5
Separated	1	1.0
Religion		
Christianity	82	82.8
Islam	15	15.2
Traditional	2	2.0
Ethnicity		
Yoruba	80	80.8
Igbo	11	11.1
Hausa	1	1.0
Others	7	7.1
Education		
No Formal Education	5	5.1
Primary	3	3.0
Secondary	12	12.1
Tertiary	75	75.8
Others	4	4.0
Occupation		
Civil/Public servant	20	20.2
Others	9	9.1
Artisan	9	9.1
Retiree	11	11.1

Indicator	Frequency	Percent
Trading/Business	24	24.2
Unemployed	26	26.3
Work Environment		
Indoor	25	25.3
Outdoor	45	45.5
Others (both)	29	29.3

Source: Field work, 2024

Out of the 46 participants who were children/adolescents, the survey result (Table 2) shows that the majority (47.8%) were between the ages of 15 and 18 years, and many of these children (52.2%) were below 14 years old. Over 90% of the respondents were in secondary school (91.3%) and from the Yoruba tribe (93.5%).

Table 2: Demographic characteristics of Children/Adolescents participants (n=46)

Indicator	Frequency	Percent
Age (Years)		
Less than 14	24	52.2
15-17	22	47.8
Sex		
Male	25	54.3
Female	21	45.7
Religion		
Christianity	39	84.8
Islam	7	15.2
Ethnicity		
Hausa	2	4.3
Igbo	1	2.2
Yoruba	43	93.5
Education		
Primary	4	8.7
Secondary	42	91.3

Source: Field work, 2024

3.2. Climate change awareness and potential health impacts

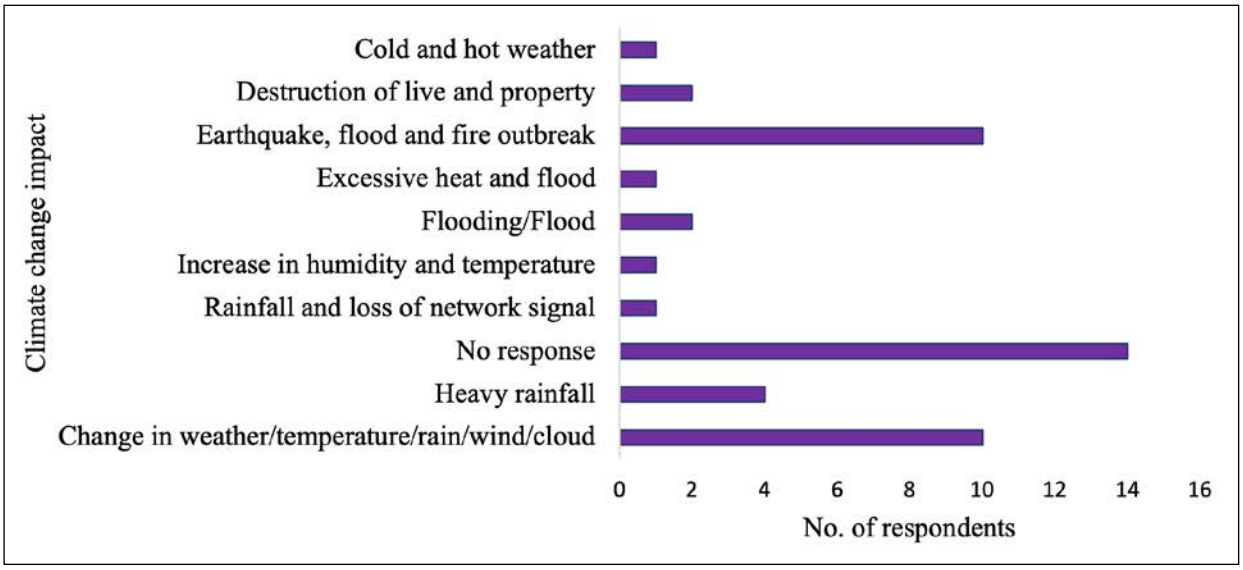
The majority of adult respondents between the ages of 18 and 25 (58.1%), and 41 and 50 years (86.7%) were familiar with the term climate change, while many (69.6%) of the children less than 18 years were familiar with the term climate change (see Table 3). The perceived impacts of climate change among children and adult respondents are presented in Figures 2 and 3.

Table 3: Level of familiarity with climate change and impacts among children and adult respondents

	Age (Years)	Not familiar (%)	Familiar (%)
Are you familiar with the term Climate Change?	**Below 18**	30.4	69.6
	18-25	41.9	58.1
	26-40	50	50
	41-50	13.3	86.7
	51-60	0	100
	Above 60	40.9	59.1

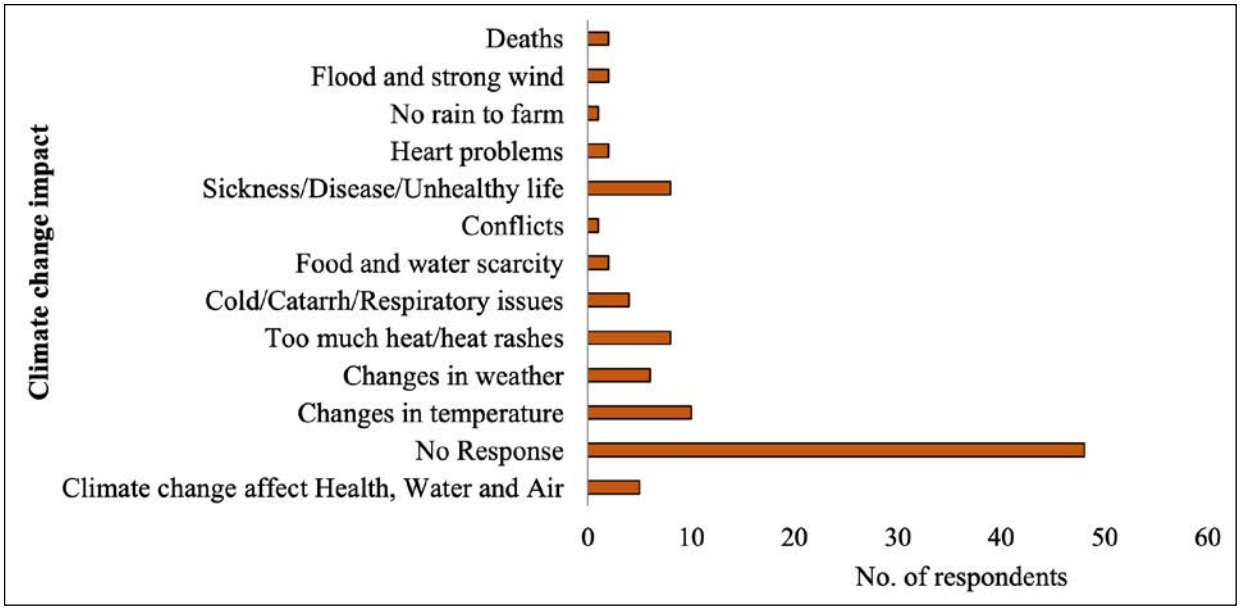
Source: Field work, 2024

Figure 2: Perceived impacts of climate change among children/adolescents



Source: Field work, 2024

Figure 3: Perceived impacts of climate change among adults/elderly respondents



Source: Field work, 2024

Out of the 46 respondents who were children, 95.7% indicated that they were familiar with the potential threat climate change poses to their health, and a large proportion of the adult respondents were also aware that climate change can affect their individual health.

Table 4: **Level of familiarity with the potential health impacts of climate change**

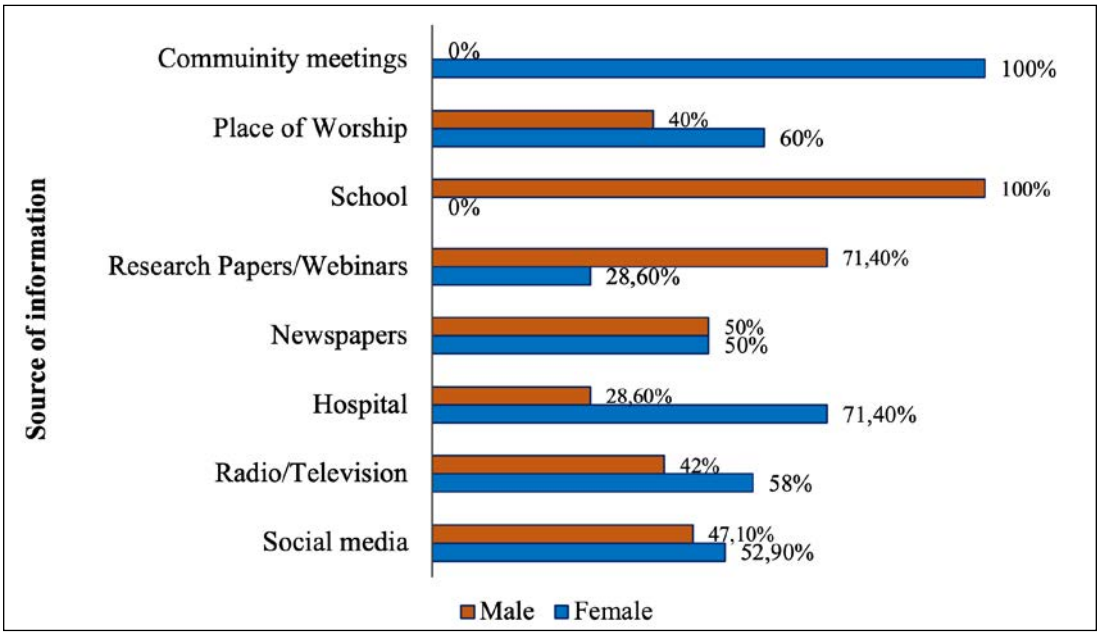
	Age (Years)	Not Familiar (%)	Very Familiar (%)
How familiar are you with the potential health impacts of climate change on human health?	**Below 18**	4.3	95.7
	18-25	20.9	79.1
	26-40	31.3	68.7
	41-50	20.0	80.0
	51-60	0	100
	Above 60	18.2	81.8

Source: Field work, 2024

3.3. Sources of information on climate change and potential health impacts

The result of the survey (Figure 4) shows that there are several sources of information on climate change and potential health impacts by sex. Most female adult respondents indicated that community meetings (100%), hospitals (71.4%), place of worship (60%), radio/television (58%) and social media (52.9%) were major sources of information on climate-related health impacts, while school (100%) and research papers/webinars (71.4%) were major sources for male adult respondents.

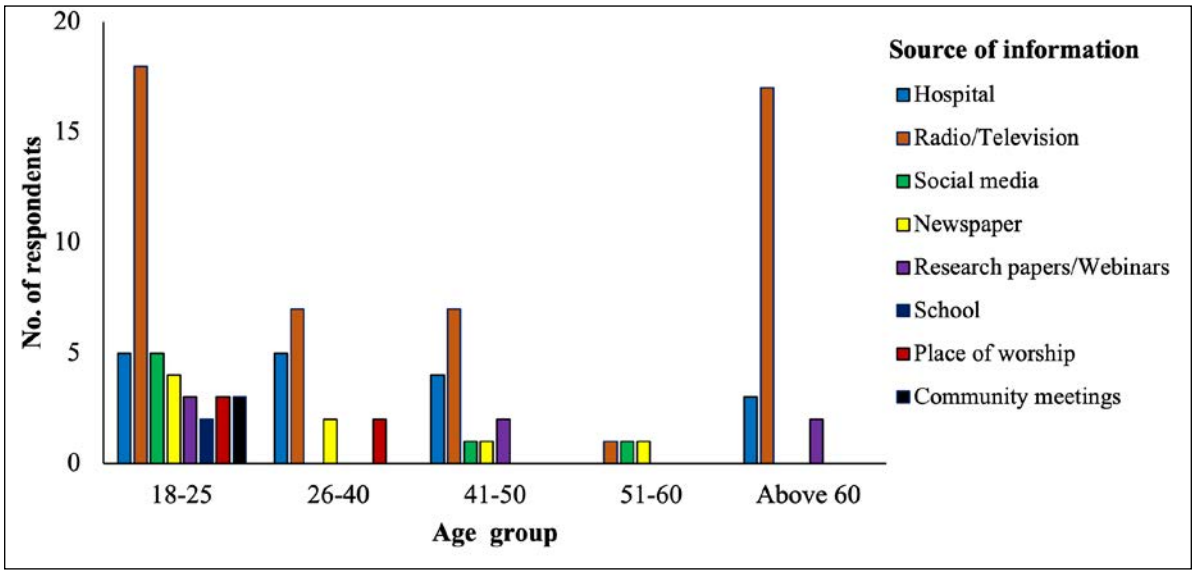
Figure 4: Sources of climate-related health information among adult respondents by sex



Source: Field work, 2024

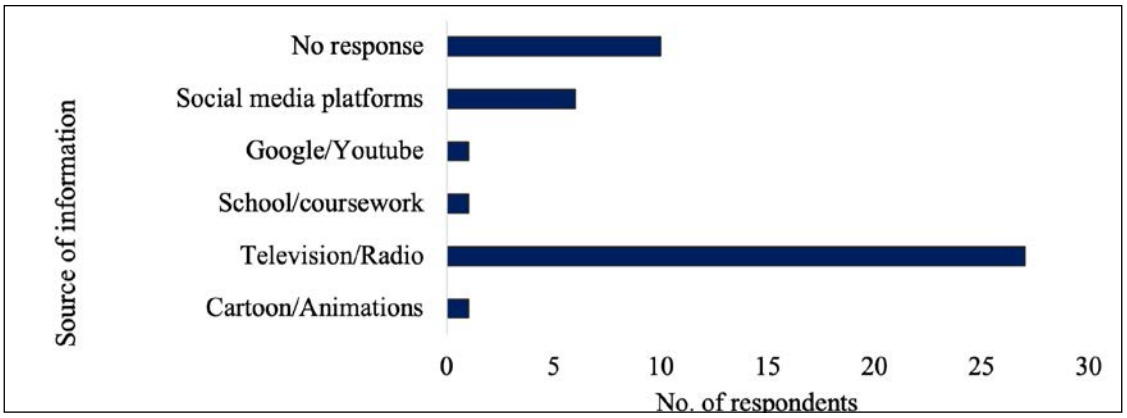
The results (Figures 5 & 6) show that the majority of respondents across each target group obtain their information from local radio and television channels.

Figure 5: Sources of climate-related health information among adult respondents by age



Source: Field work, 2024

Figure 6: Sources of climate-related health information among children/adolescents



Source: Field work, 2024

The result (Table 5) shows that a large proportion (97.8%) of respondents who were children believe what they read or hear from their information sources, and 34.8% of these children/adolescents do not question anyone about what they read or hear.

Table 5: Credibility of climate-related health information among children/adolescents

		No. of respondents	Per cent (%)
Do you believe what you read or hear about climate change impacts on human health from these information sources?	**Yes**	45	97.80
	No	1	2.20
Did you ask anyone about what you read or heard about the climate change impact on human health?	**Yes**	30	65.2
	No	16	34.8

Source: Field work, 2024

Out of the 99 adult respondents, 47 respondents indicated that they found climate-related health information from local radio/ television channels very credible (Table 6).

Table 6: Credibility of climate-related health information among adult respondents

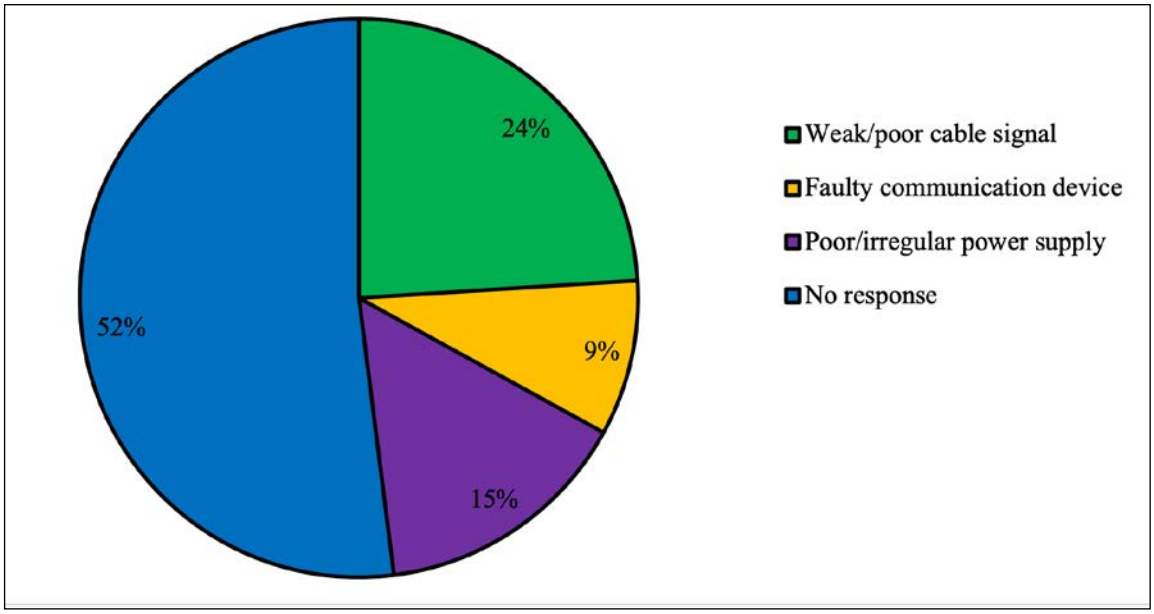
Source of information	Not credible	Slightly credible	Very credible
Hospital	1	0	16
Radio/Television	2	0	47
Social media	2	5	0
Newspaper	3	5	0
Research papers/webinars	4	3	0
School	0	2	0
Place of Worship	5	0	0
Community meetings	2	1	0

Source: Field work, 2024

3.4. Challenges limiting access to climate-related health information

Out of the 46 respondents who were children, 11 (24%) of them indicated that the major challenge limiting access to climate-related health information was poor electricity supply and weak cable signals (Figure 7).

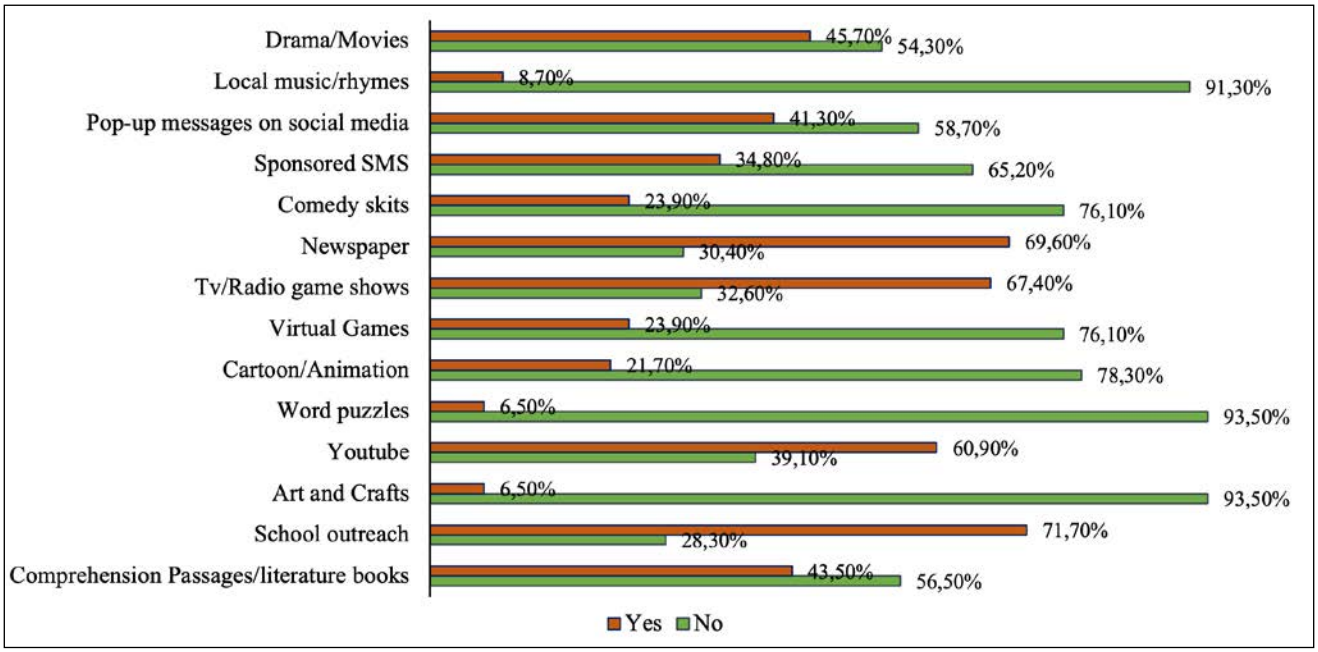
Figure 7: Limitations to climate-related health information among children/adolescents



Source: Field work, 2024

The result (Figure 8) shows the recommended choice of communication tools to improve climate-related information among children/adolescents. The majority thought that school outreach (71.7%), Newspapers (69.6%), TV/radio game shows (67.4%) and YouTube channels (60.9%) are primary communication tools that can be adopted in disseminating climate-related health information.

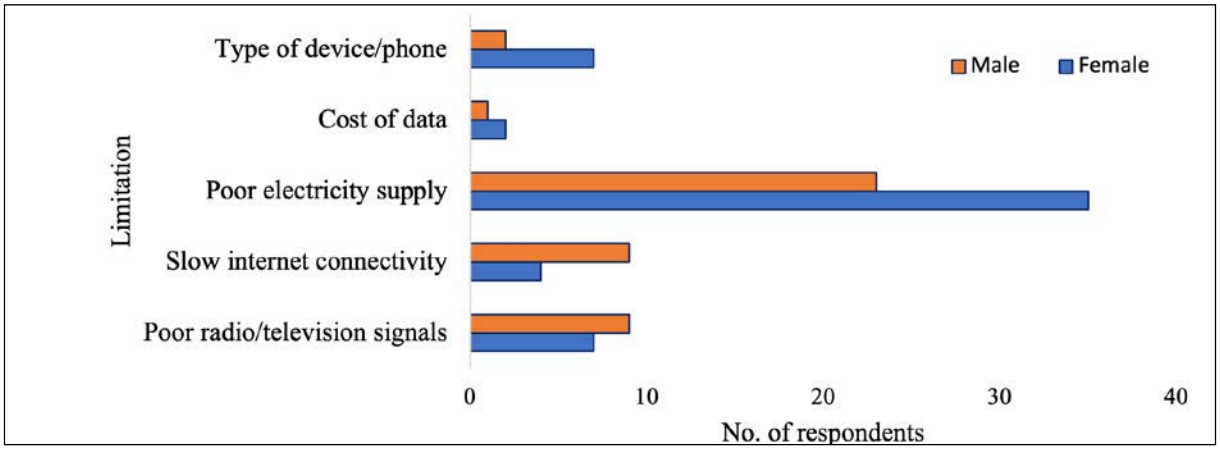
Figure 8: Sources of climate-related health information among children/adolescents



Source: Field work, 2024

The result (Figure 9) shows the major challenges that limit access to climate-related health information among adult respondents. The majority of adult respondents (F=35: 63.6%), Male = 23 (52.3%), indicated that poor electricity supply remains the major challenge limiting access to climate-related health information.

Figure 9: Limitations to climate-related health information among adult respondents



Source: Field work, 2024

4. DISCUSSION

Globally, climate change and its effects on human health have been raised as public health issues. The information that is available to an individual, their level of comprehension of that knowledge, and the perceived reliability of the information sources, however, may all influence how they perceive the health risks associated with climate change. This study assessed the best ways to communicate with targeted populations in an emerging Nigerian city about the health risks associated with climate change, as well as the barriers that prevent people from accessing, understanding, and reacting to climate-related information. The study's findings made it clear that, despite being familiar with the term "climate change," children who participated in the survey, the majority of whom were in secondary school, had very little knowledge about the phenomenon and its health effects. It was also clear that adult respondents lacked sufficient understanding regarding climate change and its direct and indirect effects on human health, even though they could recognise some effects. This may influence their general attitude and reaction to climate-related issues. Considering that the vast majority of the sampled adult participants were under 25 and above 60 years, and literate, it was anticipated that contemporary communication channels would be rationally more effective given the technological advancements in Nigerian communication techniques, as shown by the existing literature (Ogwezi and Umukoro, 2020; Nwafor and Aghaebe, 2025). The study's findings, however, show that the traditional media, including newspapers, radio and television channels, remain a widely acceptable source of climate-related health information among both the young and the elderly in the study location. This implies that, regardless of age, gender, or social status, the traditional media continues to have a significant impact on the spread of important information, including that about the health impacts of climate change. The way traditional media present climate-related concerns and engage their audience is probably the cause of this (Adekola and Lamond, 2018; Devi et al., 2022; Ogundele and Sodeinde, 2025).

The study also revealed that the sources of climate-related health information differed by gender among adult respondents, with most adult male respondents learning about climate change and related health risks from online sources (research papers and webinars) or at school, while female respondents learned about climate change and related health risks from hospitals, traditional media, social media, and places of worship. This suggests that the context in which risks are perceived can vary. Reliable information sources and well-understood narratives are also necessary for effective risk communication. The study's findings demonstrated that, despite the availability of a variety of information sources on climate change and health concerns, adults regarded traditional media and hospitals as reliable information sources. While most children get their information about climate change from social media and traditional media, they tend to believe it without consulting an adult or asking questions. Also, their perception about climate change impacts in their locality was shallow, with responses relating to environmental challenges observed on social media in other environments, such as earthquakes. This shows how different people see and interpret the same information in different contexts, even when they are exposed to it from the same source. This is seen in how children and adults responded to questions about the effects of climate change.

The study also examined the communication barriers that individuals and local communities face when trying to access climate and health-related information. The study's findings showed that most of the adult respondents highlighted unpredictable electricity supply/power outage as a major difficulty in getting information on climate and health issues in Ado-Ekiti. Although there are radio sets that run on batteries, the cost of regularly buying batteries for the preferred communication devices (e.g. radio) is another main challenge. Similarly, respondents' access to and attitudes toward climate change problems are impacted by weak radio and television signals in the sampled areas. Children are irritated by the poor internet connection, which was also noted. This shows that the lack of proper neighbourhood infrastructure is a significant problem in many developing Nigerian cities, even though framing and communication channels are essential for disseminating health risks associated with climate change. Addressing these challenges, the majority of children who participated in the survey recommended school outreach, newspapers, TV/radio game shows and YouTube channels as the main communication channels that can be used to spread health information about climate change. These tools were suggested as a way to improve information about climate change among children and adolescents. Short dramas or films and literary books or textbook comprehension passages were also suggested as communication tools. Accurate information on climate-related health risks can be given, and their curiosity in finding additional relevant information can be piqued with the use of these suggested communication strategies.

5. CONCLUSION

Building resilience on both an individual and community level depends on effectively conveying the health concerns connected with climate change. The context and risk that climate information presents may be simple for many professionals to understand, but without properly framing the context for targeted populations and using easily accessible communication tools to disseminate the information, it may be difficult, particularly for children and non-professionals to understand. Information on health risks associated with climate change can raise local awareness, but it may not be sufficient to

motivate individual climate action if the content and communication strategies or channels used do not resonate with the target audience on a more personal level. Therefore, emerging cities in West Africa, and Nigeria in particular, should increase the effectiveness of communication tools for communicating health and climate risks, especially in rural and semi-urban communities, by offering vulnerable people messages that are clear, innovative, easily accessible, and tailored to their needs.

6. RECOMMENDATIONS

Based on the findings of this study, frequent school outreach could help bring climate-related health information closer to children, who are less likely to seek out such information. Using comic books, debates, comedy skits, and games (radio quizzes, talk shows, newspaper puzzles and crosswords) to spread messages, as well as engage online influencers and celebrities that have a significant impact on kids and teens, to help spread the word about the health dangers of climate change while also providing some fun. In a similar vein, climate-related health lessons can be included in children-friendly storybooks and approved literature, as well as comprehension passages or essay writing topics can help children and teens learn while they're in school.

Since there are a variety of information channels, simultaneously communicating climate-related health risks on these communication channels can also enhance information dissemination to the target audience. While infrastructural challenges may be a major barrier to getting informed about the health impacts of climate change, collaborative outreach programs such as health talks in places of worship, the workplace and communities by a team of climate/ environment advocates and health professionals can also help disseminate information effectively in local communities.

7. REFERENCES

Abdulwahab, A., Adebisi, Y.A., Adeniyi, A.M., Olawehinmi, T. and Olanrewaju, O.F. 2024. Climate Change, Vector-borne Diseases, and Conflict: Intersecting Challenges in Vulnerable States. *Journal of Infectious Diseases and Epidemiology*, *10*, p.326.

Adebayo, W. O. (1993). Weather and Climate. In F. S. Ebisemiju (Ed.), Ado-Ekiti Region. A Geographical Analysis and Master Plan (pp.11-14). Lagos, Alpha Prints

Adegebo, B.O., 2022. Urban thermal perception and self-reported health effects in Ibadan, south west Nigeria. *International Journal of Biometeorology*, *66*(2), pp.331-343.

Adekola, O. and Lamond, J., 2018. A media framing analysis of urban flooding in Nigeria: current narratives and implications for policy. *Regional Environmental Change*, *18*(4), pp.1145-1159.

Adelekan, I., Cartwright, A., Chow, W., Colenbrander, S., Dawson, R., Garschagen, M., Haasnoot, M., Hashizume, M., Klaus, I., Krishnaswamy, J., Lemos, M.F., Ley, D., McPhearson, T., Pelling, M., Kodira, P. P., Revi, A., Sara, L. M., Simpson, N. P., Singh, C., Solecki, W., Thomas, A., Trisos, C. 2022. What the latest science on impacts, adaptation and vulnerability means for cities and urban areas. The Summary for Urban Policymakers of the IPCC's Sixth Assessment Report. Research Collection College of Integrative Studies. 1: 20-54.

Aladelokun, A. O., and Ajayi, C. F. 2014. An appraisal of the socio-economic impacts of urban flood in Ado–Ekiti Metropolis in Ekiti State. *International Journal of Asian Social Science*, *4*(10), 1027-1034.

Aliyu, A.A. and Amadu, L., 2017. Urbanization, cities, and health: the challenges to Nigeria–a review. *Annals of African medicine*, *16*(4), pp.149-158.

Aririguzoh, S., Amodu, L., Sobowale, I., Ekanem, T., and Omidiora, O. 2021. Achieving sustainable e-health with information and communication technologies in Nigerian rural communities. *Cogent Social Sciences*, *7*(1), 1887433.

Badullovich, N., Grant, W.J. and Colvin, R.M., 2020. Framing climate change for effective communication: a systematic map. *Environmental research letters*, *15*(12), p.123002.

Barry, A. A., Caesar, J., Klein, Tank A.M.G., Aguilar, E., McSweeney, C., Cyrille, A.M., Nikiema, M.P., Narcisse, K.B., Sima, F., Stafford, G., Touray, L.M., Ayilari-Naa, J.A., Mendes, C.L., Tounkara, M., Eugene, V. S. Gar-Glahn, Coulibaly, M.S., Dieh, M.F., Mouhaimouni, M., Oyegade, J.A., Sambou, E. and Laogbessi, E.T. 2018. West Africa climate extremes and climate change indices. *International Journal of Climatology* 38 (S1): e921-e938.

Deglon, M., Dalvie, M.A. and Abrams, A., 2023. The Impact of Extreme Weather Events on Mental Health in Africa: A Scoping Review of the Evidence. *Science of the total environment*, *881*, p.163420.

Devi, C., Khan, M.N. and Darang, K., 2022. Radio in the Age of ICTs: Revisiting the Literature on Socio-cultural Changes with Special Reference to Health Communication in Rural Areas of Arunachal Pradesh. *International Journal of Health Sciences*, *6*(S6), pp.6745-6757.

Glaas, E., Ballantyne, A.G., Neset, T.S., Linnér, B.O., Navarra, C., Johansson, J., Opach, T., Rød, J.K. and Goodsite, M.E., 2015. Facilitating Climate Change Adaptation Through Communication: Insights from the development of a visualization tool. *Energy Research & Social Science*, *10*, pp.57-61.

Guenther, L., Jörges, S., Mahl, D. and Brüggemann, M., 2024. Framing as a Bridging Concept for Climate Change Communication: A Systematic Review Based on 25 Years of Literature. *Communication Research*, *51*(4), pp.367-391.

IPCC, 2022. Summary for Policymakers [H.-O. Pörtner, D.C. Roberts, E.S. Poloczanska, K. Mintenbeck, M. Tignor, A. Alegría, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem (eds.). In: *Climate Change 2022: Impacts, Adaptation, and Vulnerability.* Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [H.-O. Pörtner, D.C., Roberts, M., Tignor, E.S., Poloczanska, K., Mintenbeck, A., Alegría, M., Craig, S., Langsdorf, S., Löschke, V., Möller, A., Okem, B., Rama (eds.). Cambridge University Press, Cambridge, UK, and New York, NY, USA, pp. 3-33, doi: 10.1017.

Janković, V., and Schultz, D. M. 2017. Atmosfear: Communicating the effects of climate change on extreme weather. *Weather, Climate, and Society*, *9*(1), 27-37.

Kreslake, J. M., Price, K. M., and Sarfaty, M. 2016. Developing Effective Communication Materials on the Health Effects of Climate Change for Vulnerable Groups: A Mixed-Methods Study. *BMC Public Health*, *16*, 1-15.

MacIntyre, E., Khanna, S., Darychuk, A., Copes, R., and Schwartz, B. 2019. Evidence synthesis Evaluating risk communication during extreme weather and climate change: a scoping review. *Health promotion and chronic disease prevention in Canada: research, policy and practice*, *39*(4), 142.

Maibach E, Nisbet M, and Weathers M. 2011. Conveying the Human Implications of Climate Change: A Climate Change Communication Primer for Public Health Professionals. Fairfax, VA: George Mason University Center for Climate Change Communication.

Mees, H., Tijhuis, N. and Dieperink, C., 2018. The effectiveness of communicative tools in addressing barriers to municipal climate change adaptation: lessons from the Netherlands. *Climate policy*, *18*(10), pp.1313-1326.

Mfon, I.E., Oguike, M.C., Eteng, S.U. and Etim, N.M., 2022. Causes and effects of flooding in Nigeria: a review. *East Asian Journal of Multidisciplinary Research*, *1*(9), pp.1777-1792.

National Population Commission Census (NPC) Report (2006).

Nwafor, G. U., and Aghaebe, S. E. 2025. Communicating Climate Change Adaptation and Resilience Strategies through Oramedia Forms for Sustainable Development in Nigeria. *Journal of Environment, Climate, and Ecology*, *2*(1), 11-19.

Nweze, G. N., Awoniyi, O. M., Falebita, T. F., Familoni, J. K., and Opele, J. K. 2023. Development Communication as a Tool for Addressing Health Disparities and Challenges in Nigerian Communities: Obstacles and Opportunities for Future Direction. *African Journal of Human Kinetics, Recreation and Health Studies*, *1*(2), 91-109.

Ofoegbu, C., and New, M. 2022. Evaluating the effectiveness and efficiency of climate information communication in the African agricultural sector: A systematic analysis of climate services. *Agriculture*, *12*(2), 160.

Ogundele, D.O. and Sodeinde, O.A., 2025. Climate Change, Content Framing and its Implication for Sustainability in Nigeria. In *Media and Communication Systems for Sustainability in Nigeria* (pp. ٢٠٧-١٨٣). Cham: Springer Nature Switzerland.

Ogwezi, J. O., and Umukoro, E. S. 2020. Climate change communication in Nigeria: Towards proffering sustainable alternatives. *International Journal of Psychosocial Rehabilitation*, *24*(9), 5235-5259.

Olofin, E. O., and Oluwadare, A. O. 2022. Settlement Growth and Its Impact on Land Surface Temperature in Ado-Ekiti, Ekiti State, Nigeria. *Frontiers*, *2*(2), 88-97.

Olorunfemi, F., 2009. Risk Communication in Climate Change and Adaptation: Policy issues and challenges for Nigeria. In *IOP Conference Series. Earth and Environmental Science* (Vol. ٦, No. ٤١). IOP Publishing.

Oramah, C. P., Ngwu, T. A., and Odimegwu, C. N. 2025. Addressing the Impact of Complex English Use in Communicating Climate Change in Nigerian Communities Through Contextual Understanding. *Climate*, *13*(3), 56.

Ouedraogo, I., Diouf, N. S., Ouédraogo, M., Ndiaye, O., and Zougmoré, R. B. 2018. Closing the gap between climate information producers and users: Assessment of needs and uptake in Senegal. *Climate*, *6*(1), 13.

Owolabi, J. T., and Adebayo, W. O. 2013. Climate Variability and Physiological Comfort Measurement in Ado Ekiti, Ekiti State, Nigeria. *Journal of Natural Sciences Research*, *3*(15), 128.

Peters, E., Boyd, P., Cameron, L.D., Contractor, N., Diefenbach, M.A., Fleszar-Pavlovic, S., Markowitz, E., Salas, R.N. and Stephens, K.K., 2022. Evidence-based recommendations for communicating the impacts of climate change on health. *Translational behavioral medicine*, *12*(4), pp.543-553.

Raimi, M. O., Vivien, O. T., and Oluwatoyin, O. A. 2021. Creating the healthiest nation: Climate Change and Environmental Health Impacts in Nigeria: A Narrative Review. *Morufu Olalekan Raimi, Tonye Vivien Odubo & Adedoyin Oluwatoyin Omidiji (2021) Creating the Healthiest Nation: Climate Change and Environmental Health Impacts in Nigeria: A Narrative Review. Scholink Sustainability in Environment. ISSN*.

Rocque, R.J., Beaudoin, C., Ndjaboue, R., Cameron, L., Poirier-Bergeron, L., Poulin-Rheault, R.A., Fallon, C., Tricco, A.C. and Witteman, H.O., 2021. Health Effects of Climate Change: An Overview of Systematic Reviews. *BMJ open*, *11*(6), p.e046333.

Sheshi, T. D., and Yisa, S. S. 2024. Impact of Climate Change Communication on Behavior Change: Insights from Nigeria. *International Journal of Advances in Engineering and Management*, *6*(9), 597-603.

Sorgho, R., Quiñonez, C.A.M., Louis, V.R., Winkler, V., Dambach, P., Sauerborn, R. and Horstick, O., 2020. Climate change policies in 16 West African countries: A systematic review of adaptation with a focus on agriculture, food security, and nutrition. *International journal of environmental research and public health*, *17*(23), p.8897.

Suhr, F. and Steinert, J.I., 2022. Epidemiology of Floods in Sub-Saharan Africa: A Systematic Review of Health Outcomes. *BMC public health*, *22*(1), p.268.

Sylla, M.B., Nikiema, P.M., Gibba, P., Kebe, I. and Klutse, N.A.B., 2016. Climate Change over West Africa: Recent Trends and Future Projections. *Adaptation to climate change and variability in rural West Africa*, pp.25-40.

Terrado, M., Christel, I., Bojovic, D., Soret, A. and Doblas-Reyes, F.J., 2018. Climate change communication and user engagement: A tool to anticipate climate change. *Handbook of Climate Change Communication: Vol. 3: Case Studies in Climate Change Communication*, pp.285-302.

Umar, N. and Gray, A., 2023. Flooding in Nigeria: A Review of its Occurrence and Impacts and Approaches to Modelling Flood Data. *International Journal of Environmental Studies*, *80*(3), pp.540-561.

Wagner, S., Souvignet, M., Walz, Y., Balogun, K., Komi, K., Kreft, S. and Rhyner, J., 2021. When does risk become residual? A systematic review of research on flood risk management in West Africa. *Regional Environmental Change*, *21*(3), p.84.