

ASSESSMENT OF COMMUNICATION STRATEGIES OF NATIONAL CANCER CONTROL PROGRAMME IN THE CAMPAIGN AGAINST CERVICAL CANCER IN NIGER STATE

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Abstract

Cervical cancer remains a significant public health concern in Nigeria, particularly in Niger State, where awareness and preventive measures are limited. This study examined the communication strategies employed by the National Cancer Control Programme in raising awareness and promoting preventive behaviours against cervical cancer. Key objectives included assessing the communication strategies adopted and identifying the barriers impeding their effectiveness. The study was grounded in the Health Belief Model, which provided a framework for understanding how awareness and social influences shape health behaviours. A mixed-methods research design was employed, combining survey and interview approaches. Copies of structured questionnaire were distributed to a sample of 360 female staff of tertiary institutions and healthcare workers in Niger State selected using the Yamane formula. Additionally, in-depth interviews were conducted with 10 key stakeholders. Quantitative data were analysed using descriptive and inferential statistics, while qualitative data were thematically coded for insights. Findings revealed that community health talks and radio campaigns were the most widely used strategies, while digital platforms were under-utilised. Major barriers included low literacy levels (31.0%) and cultural resistance (25.4%), which hindered the effectiveness of campaigns. The study concluded that the strategies have made significant impact, gaps remain in reaching under-served populations. Recommendations included diversifying communication approaches by integrating digital platforms, engaging community leaders to address cultural barriers, and increasing funding for outreach efforts.

Keywords: Cervical cancer prevention, Communication Strategies, Health communication, National Cancer Control Programme.

Introduction

Cervical cancer remains one of the most preventable yet deadly cancers among women globally. The World Health Organisation (WHO) categorises it as the fourth most common cancer in women, with approximately 570,000 new cases and over 300,000 deaths recorded annually. Alarmingly, sub-Saharan Africa, including Nigeria, bears the highest burden due to limited access to prevention, diagnosis, and treatment (World Health Organisation, 2020). Nigeria reports an estimated 14,089 new cases and 8,240 deaths from cervical cancer annually, ranking as the second most common cancer among women in the country (International Agency for Research on Cancer, 2021). This prevalence highlights the urgent need for targeted interventions, particularly communication strategies aimed at raising awareness and promoting preventive measures.

The high incidence of cervical cancer in Nigeria has been linked to several risk factors, including low uptake of Human Papillomavirus (HPV) vaccination, limited awareness of screening services, and cultural barriers. Persistent HPV infection, which accounts for more than 99% of cervical cancer cases, is significantly under-diagnosed

due to poor access to screening tools like Pap smears (Ayeni et al., 2023; Bosch and de Sanjosé, 2020; Lawson et al., 2023). Additionally, societal factors such as early marriage, high parity, and polygamy contribute to the heightened risk of cervical cancer in the region (Bayo and Adebamowo, 2021; Zakka et al., 2023). These realities make it imperative to assess the effectiveness of communication strategies designed to address these risk factors and encourage preventive behaviours among women.

Communication strategies are recognised as vital tools in reducing the burden of cervical cancer by enhancing awareness and driving behaviour change. The National Cancer Control Programme (NCCP) in Nigeria, under the Federal Ministry of Health, has been instrumental in advocating for preventive measures such as HPV vaccination, regular screenings, and lifestyle modifications. According to the Federal Ministry of Health (2018), the NCCP has launched various initiatives to promote cervical cancer awareness, including health education campaigns and stakeholder collaborations. These efforts aim to empower women with the knowledge and resources needed to make informed health decisions. However, their impact has been uneven, particularly in rural areas where barriers such as illiteracy and limited healthcare access persist (Adedini et al., 2014; Atnafu et al., 2024; Chinyakata et al., 2021; Mafiana et al., 2022).

Niger State, located in North Central Nigeria, offers a unique context for examining these challenges. With a predominantly rural population, the state is characterised by significant cultural and socioeconomic diversity, which influences health-seeking behaviours. Studies have shown that women in Niger State often face barriers such as low literacy levels, traditional beliefs about health, and economic constraints, all of which hinder their ability to access cervical cancer prevention services (Adamu, 2019; Mantula et al., 2024). Furthermore, the state's healthcare infrastructure is inadequate, with a limited number of facilities offering cervical cancer screening and treatment services (Okaba, 2024; Umar, 2020). These factors necessitate an assessment of how the NCCP's communication strategies address these contextual realities.

Research has demonstrated the importance of culturally sensitive and context-specific communication in promoting health interventions (Brooks et al., 2019). For instance, Adegboyega (2021) and Malikhao, (2020) emphasised that campaigns that incorporate local languages, community leaders, and culturally relevant messaging are more likely to succeed in rural settings. Similarly, Okafor (2020) highlighted the role of participatory communication approaches, such as community dialogues and focus groups, in fostering trust and engagement among target populations. These insights underscore the need for the NCCP to adapt its strategies to the unique characteristics of Niger State, ensuring that its messages resonate with the local population and effectively address barriers to preventive action.

Despite the NCCP's efforts, evidence suggests that gaps remain in its communication strategies. A study by Nwankwo (2018) found that awareness of HPV vaccination among Nigerian women was as low as 20%, indicating a lack of effective outreach. Similarly, research by Ibrahim (2019) revealed that many women in North Central Nigeria were unaware of the link between HPV and cervical cancer, reflecting the need for more targeted educational campaigns. These findings highlight the critical importance of evaluating and refining the NCCP's strategies to ensure they are impactful and inclusive.

Communication plays a central role in achieving the WHO's Global Strategy for Cervical Cancer Elimination goals (World Health Organisation, 2020) and by addressing knowledge gaps, challenging misconceptions, and encouraging health-

seeking behaviours this study provides valuable insights that can inform national and international efforts to combat cervical cancer.

Statement of the Problem

Cervical cancer remains a significant public health issue in Nigeria, ranking as one of the leading causes of cancer-related deaths among women. The prevalence of the disease underscores systemic challenges, including low levels of awareness, inadequate screening programs, and limited access to preventive measures. According to Omoniyi-Esan (2021), many women in rural and underserved regions of Nigeria face substantial barriers to early detection and treatment, largely due to a lack of effective communication strategies that address cultural, linguistic, and infrastructural constraints. These limitations undermine efforts to achieve national cancer control objectives, leaving cervical cancer as a persistent health threat in regions like Niger State.

This study aims to evaluate the communication strategies of the National Cancer Control Programme (NCCP) in Niger State, focusing on identifying barriers and proposing improvements to enhance program effectiveness. For example, research by Mohammed and Bello (2020) highlights the critical need for culturally sensitive communication tools tailored to local communities to increase the adoption of preventive practices such as HPV vaccination and regular screenings. Addressing these gaps is crucial for mitigating the high cervical cancer burden and advancing broader public health goals. This research aspires to provide actionable insights that can inform policy improvements, thereby supporting the reduction of cervical cancer's impact and enhancing the well-being of women in Nigeria.

Objectives of the study

- i. To determine the communication strategies adopted for the campaign against cervical cancer in Niger State.
- ii. To identify the barriers impeding the success of these communication strategies in Niger State.

Literature Review

Global and National Efforts in Cervical Cancer Prevention

Cervical cancer prevention has garnered significant attention globally due to its preventable nature and the availability of effective interventions. The World Health Organisation (WHO) launched the Global Strategy to Accelerate the Elimination of Cervical Cancer in 2020, focusing on three key pillars: vaccination, screening, and treatment. The strategy advocates achieving 90% coverage for HPV vaccination, 70% for screening, and 90% for treatment of precancerous lesions and invasive cancer by 2030 (World Health Organisation, 2020). Countries with robust healthcare systems, such as Australia, have achieved high HPV vaccination rates, leading to a significant decline in cervical cancer cases, and are projected to eliminate it as a public health problem within the next decade (Smith, 2021). These successes underscore the effectiveness of preventive measures when adequately implemented.

In low- and middle-income countries, including Nigeria, the challenges of implementing these interventions are multifaceted. While Nigeria has integrated HPV

vaccination into its national immunisation schedule, the uptake remains low due to limited availability, cost barriers, and insufficient awareness (Federal Ministry of Health, 2018). Screening programmes also face significant hurdles, such as inadequate infrastructure, a shortage of trained personnel, and cultural stigma surrounding reproductive health. As a result, most cervical cancer cases in Nigeria are diagnosed at advanced stages, contributing to high mortality rates (Adamu, 2019). These disparities highlight the need for more focused and inclusive strategies to address the specific challenges of cervical cancer prevention in resource-constrained settings.

Efforts by the National Cancer Control Programme (NCCP) in Nigeria have made some progress in increasing awareness and access to preventive services. The NCCP has collaborated with stakeholders to promote HPV vaccination and routine screenings through public health campaigns. However, studies indicate that these interventions have not been uniformly effective across the country. For instance, research by Ibrahim (2019) found that rural areas, such as Niger State, often lack adequate outreach, leaving many women unaware of available services. This regional disparity underscores the importance of context-specific strategies that consider the unique socioeconomic and cultural dynamics of each area. By critically examining these global and national efforts, this study aims to contribute to the understanding of the barriers to preventive measures in this context and provide insights into how global strategies can be adapted to local realities, ultimately advancing the goal of cervical cancer elimination.

The Role of Communication in Public Health Campaigns

Effective communication is at the heart of successful public health campaigns, particularly in promoting awareness and preventive behaviours. Communication strategies play a crucial role in bridging the gap between healthcare providers and communities, ensuring that health messages are understood and acted upon. The Health Belief Model (HBM) underscores the importance of communication in shaping individuals' perceptions of disease severity, susceptibility, benefits of action, and barriers to preventive measures (Rosenstock, 1974). In the context of cervical cancer prevention, tailored communication can dispel myths, reduce stigma, and empower women to seek vaccination and screening services.

Studies have demonstrated the impact of communication on improving health outcomes. For instance, a community-based intervention in India utilised local language messaging and culturally relevant narratives to increase cervical cancer screening rates among women in rural areas (Singh, 2021). Similarly, campaigns in Uganda that involved religious leaders and community influencers succeeded in reducing resistance to HPV vaccination, showcasing the importance of culturally sensitive approaches (Kamulegeya, 2020; Kutz, Rausche, Gheit, Puradiredja, & Fusco, 2023; Patrick, Bakeera-Kitaka, Rujumba, & Malande, 2022). These findings highlight the need for context-specific communication strategies that resonate with the target audience and address their unique concerns.

In Nigeria, public health campaigns for cervical cancer prevention often face challenges such as low literacy levels and limited access to mass media in rural areas. While radio and television remain popular platforms for health messaging, their reach is sometimes restricted to urban populations, leaving rural communities under-served.

A study by Adegboyega (2021) revealed that many women in rural Nigeria rely on interpersonal communication, such as advice from healthcare workers and community leaders, for health information. This underscores the importance of incorporating face-to-face interactions into communication strategies to ensure inclusivity and effectiveness.

However, existing literature also highlights inconsistencies in the deployment of communication strategies in Nigeria. Research by Nwankwo (2018) identified a lack of coordination among stakeholders, resulting in fragmented and overlapping campaigns. Additionally, Ibrahim (2019) noted that many campaigns fail to address deeply rooted cultural beliefs that deter women from discussing or seeking preventive care for cervical cancer. These gaps in communication underscore the need for a more integrated and culturally appropriate approach to health messaging in the country.

Review of Empirical Studies

An international study by Smith, Roberts, & Ahmed, (2022) assessed the effectiveness of digital and mass media campaigns in increasing cervical cancer screening rates in low- and middle-income countries. The study employed a mixed-methods approach, combining survey data from 1,000 women with focus group discussions. Findings revealed that while mass media campaigns raised awareness significantly, they failed to translate into action due to socio-economic barriers. This underscores the importance of combining awareness efforts with structural interventions, such as subsidised services, to enhance behavioural outcomes.

A study by Johnson (2021) focused on the role of communication strategies in promoting HPV vaccination among adolescent girls in rural Kenya. Using qualitative interviews with 20 healthcare providers and 40 parents, the research found that myths about infertility and cultural resistance were key barriers to vaccine uptake. The study emphasised the need for culturally sensitive educational campaigns and active involvement of community leaders to address misconceptions, a finding relevant for similar contexts like Niger State.

Ibrahim and Adeyemi (2023) examined the impact of community health talks on cervical cancer awareness among women in rural northern Nigeria. Using a quasi-experimental design with 300 participants, the study found a significant increase in knowledge levels among women who attended the sessions compared to those who did not. However, logistical challenges, such as poor attendance due to conflicting work schedules, were identified, highlighting the need for flexible and locally adapted communication methods.

Ravi, Kapoor, & Shastri (2022) explored the use of mobile health applications to disseminate cervical cancer information among women in urban and semi-urban India. The study involved a survey of 500 app users and analysis of usage data. Findings indicated high engagement levels among younger, tech-savvy women, but limited access among older and rural populations. This study suggests that digital platforms are effective but should complement, rather than replace, traditional communication strategies to ensure inclusivity.

Mensah (2020) investigated the role of partnerships with local leaders in cervical cancer prevention campaigns in Ghana. Through interviews with 15 programme coordinators and 20 community leaders, the study highlighted that collaboration significantly improved trust and participation in preventive initiatives. The findings underscore the potential of leveraging local networks to enhance campaign effectiveness, a strategy that could be beneficial for similar interventions in Niger State.

These studies collectively highlight the importance of combining diverse communication strategies, addressing socio-cultural barriers, and leveraging local partnerships to improve cervical cancer prevention outcomes. They inform this study's focus on evaluating the National Cancer Control Programme's communication strategies, particularly in adapting approaches to local contexts for maximum impact.

Theoretical Framework

Health Belief Model (HBM)

The Health Belief Model (HBM) is a psychological framework developed in the 1950s to understand health-related behaviours and the factors that motivate individuals to take preventive actions. The model posits that individuals are more likely to adopt health-promoting behaviours if they perceive a health threat as severe, believe they are susceptible to it, and recognise the benefits of taking preventive measures outweigh the barriers (Rosenstock, 1974). HBM includes several key constructs: perceived severity, perceived susceptibility, perceived benefits, perceived barriers, cues to action, and self-efficacy. These constructs provide a structured approach to examining why some individuals engage in preventive health behaviours while others do not.

This theory underpins the research by aligning with the objective of evaluating the communication strategies used by the National Cancer Control Programme (NCCP). The study seeks to determine whether these strategies effectively address the key constructs of the HBM, such as reducing perceived barriers and enhancing cues to action. For example, an effective campaign would highlight the benefits of HPV vaccination while addressing fears or misconceptions surrounding its safety. By applying the HBM, the research aims to provide actionable insights into how communication strategies can be designed to resonate with women's beliefs and motivations, ultimately encouraging preventive action against cervical cancer.

Methodology

This study employed a mixed-methods research design, integrating both quantitative and qualitative approaches to provide a comprehensive understanding of the communication strategies employed by the National Cancer Control Programme (NCCP) in Niger State. The quantitative component involved administering structured questionnaires to evaluate awareness, perceptions, and behavioural responses related to cervical cancer prevention among key populations. The qualitative component utilised key informant interviews to capture in-depth perspectives from critical stakeholders, including programme coordinators, healthcare providers, and community leaders. This methodological approach was selected for its ability to combine the statistical validity of quantitative data with the contextual depth offered by qualitative insights.

The study population consisted of 1,750 female staff of selected state-owned tertiary institutions and 2,000 registered female healthcare workers, including nurses, midwives, and community health practitioners, as documented by the Niger State Ministry of Education and the Niger State Ministry of Health (2020). These groups were deliberately chosen due to their pivotal roles in health education, service delivery, and community mobilisation, making their input essential for evaluating the effectiveness of NCCP's communication strategies. The sample size for the quantitative component was determined using the Yamane (1967) formula:

$$n = \frac{N}{1 + N(e^2)}$$

where $N=5,500$ (total population) and $e=0.05$ (margin of error), yielding a sample size of 360 respondents at a 95% confidence level. For the qualitative component, 10 participants were purposively selected to represent a diverse range of stakeholders and geographic regions within Niger State. This purposive sampling ensured that the qualitative data provided a holistic view of the challenges and opportunities in the implementation of communication strategies.

Data collection employed a combination of self-administered questionnaires and face-to-face interviews. Quantitative data were analysed using descriptive and inferential statistics to uncover trends and relationships, while qualitative data were thematically analysed to identify recurring patterns and nuanced insights. This integrated approach ensured that the study findings were both reliable and actionable, providing robust evidence to enhance cervical cancer prevention strategies in Niger State.

Data Analysis and Results

Out of the 360 questionnaires administered to female academic staff and healthcare workers in Niger State, 355 were retrieved, representing a 98.6% response rate. This high response rate reflects the enthusiasm and commitment of participants, ensuring the reliability and validity of the quantitative findings. The data collected were analysed based on the study's objectives, as presented in the tables below.

Communication Strategies Adopted for Campaign against Cervical Cancer

Table 1: Responses on Communication Strategies Adopted for Campaign against Cervical Cancer

Response Variable	Frequency (n = 355)	Percentage (%)
Use of community health talks	145	40.8
Radio and television campaigns	90	25.4
Distribution of flyers and posters	75	21.1
Collaboration with local leaders	30	8.5

Response Variable	Frequency (n = 355)	Percentage (%)
Online awareness platforms	15	4.2
Total	355	100

Source: Field Survey, 2024

Table 1 data reveal that community health talks are the predominant communication strategy, reflecting the effectiveness of interpersonal approaches in driving awareness. However, the underutilisation of online platforms (4.2%) highlights a significant gap, particularly in reaching younger, tech-savvy demographics. This suggests a critical need to integrate digital channels alongside traditional methods to broaden engagement and ensure inclusivity in cervical cancer prevention efforts. Additionally, low collaboration with local leaders (8.5%) underscores an opportunity to harness community influencers to amplify messaging and foster trust.

Impeding Factors to Communication Strategies

Table 2: Responses on Factors Impeding Communication Strategies

Response Variable	Frequency (n = 355)	Percentage (%)
Low literacy levels	110	31.0
Cultural resistance to discussing health	90	25.4
Limited healthcare infrastructure	70	19.7
Economic constraints	60	16.9
Inadequate funding for campaigns	25	7.0
Total	355	100

Source: Field Survey, 2024

Table 2 data indicate that low literacy levels (31.0%) are the primary barrier to effective communication strategies, underscoring the need for simplified and visually driven messaging to enhance comprehension. Cultural resistance (25.4%) highlights the importance of culturally sensitive approaches to overcome societal misconceptions. Inadequate healthcare infrastructure (19.7%) and economic constraints (16.9%) emphasise systemic challenges that limit access to services, while insufficient campaign funding (7.0%) points to the need for increased resource allocation to support

comprehensive and sustainable outreach efforts. Addressing these barriers is critical for improving cervical cancer prevention outcomes.

The qualitative data offer in-depth insights into the challenges and opportunities associated with communication strategies for cervical cancer prevention in Niger State. Data were gathered through 10 Key Informant Interviews (KIIs) with stakeholders, including healthcare providers, community leaders, and programme coordinators. These interviews provide a nuanced understanding of the barriers and opportunities, presented thematically for clarity and coherence.

Awareness and Accessibility of Communication Campaigns

Stakeholders expressed varying levels of awareness regarding cervical cancer campaigns, revealing disparities in the reach of current strategies. A healthcare worker noted, *“The community talks are helpful, but not everyone attends, especially women in remote villages.”* This highlights the limited reach of interpersonal approaches in geographically isolated areas. Similarly, a participant remarked, *“Radio messages are common, but many women don’t listen due to lack of access to radios.”* These observations emphasise the uneven accessibility of campaigns, especially in underserved rural areas.

The qualitative data underscore the pressing need to diversify communication channels to reach a broader audience. Incorporating mobile outreach programmes, leveraging community influencers, and using grassroots communication strategies such as market-day campaigns could significantly enhance the effectiveness and reach of cervical cancer awareness efforts.

Barriers to Behavioural Change

The interviews revealed critical barriers to adopting preventive behaviours among women in Niger State. Misconceptions and cultural myths emerged as a significant challenge. A community leader explained, *“Many women believe cervical cancer is caused by witchcraft, so they see no need for vaccines or screenings.”* These deeply rooted beliefs hinder the acceptance of modern medical interventions. Economic challenges also surfaced as a notable barrier, with a nurse stating, *“Economic hardships discourage women from spending money on preventive care when they struggle to feed their families.”* Such financial constraints limit the uptake of preventive services like HPV vaccination and screening.

Addressing these barriers requires targeted education campaigns designed to debunk myths and increase trust in medical services. Additionally, implementing subsidised or free healthcare services could alleviate economic burdens, making preventive care more accessible and appealing to economically disadvantaged women. Together, these efforts could foster meaningful behaviour change and improve cervical cancer prevention outcomes.

Discussion of Findings

Communication Strategies Adopted for Campaign against Cervical Cancer

The findings revealed that the most commonly used communication strategy in Niger State was community health talks, followed by radio and television campaigns, with less reliance on flyers, posters, and online platforms. This aligns with previous research highlighting the importance of interpersonal and mass media communication in rural and underserved areas. Okafor (2020) observed that community-based approaches often yield better outcomes in regions with limited literacy levels and cultural reservations, as they allow for direct engagement and trust-building. Similarly, Ibrahim (2019) emphasised the effectiveness of radio campaigns in reaching wider audiences in rural Nigeria. However, the low use of digital platforms in this study contrasts with global trends, where online platforms are increasingly utilised for health communication. This divergence underscores the digital divide in Niger State, where internet access remains limited.

The Health Belief Model (HBM) provides a theoretical lens for understanding why community health talks are effective in this context. By addressing constructs like perceived severity and susceptibility to cervical cancer, these talks help women recognise the risks and benefits of preventive measures. However, the limited use of online platforms suggests a missed opportunity to enhance cues to action for younger, tech-savvy populations. The lack of collaboration with local leaders, as reported by only 8.5% of respondents, suggests an under-utilisation of influential figures who could act as change agents within communities.

Practically, these findings suggest that while traditional methods like health talks and radio campaigns are impactful, diversifying communication strategies is essential for greater inclusivity. Integrating digital platforms and expanding partnerships with local leaders could enhance the effectiveness of campaigns. From a policy perspective, allocating resources to improve internet access and digital literacy could bridge this gap, enabling the adoption of hybrid communication approaches.

Nonetheless, these strategies face inherent limitations. Community health talks, while effective, may not reach all women, particularly those in remote areas. Similarly, reliance on mass media excludes populations without access to radios or televisions. Addressing these challenges requires a multipronged approach that combines traditional and modern communication channels to ensure no demographic is left behind.

Impeding Factors to Communication Strategies

The study identified low literacy levels and cultural resistance as the most significant barriers to effective communication strategies in Niger State. These findings echo previous research, such as Adegboyega (2021), who highlighted that limited literacy hampers the population's ability to understand and act on health messages. Additionally, cultural resistance to discussing reproductive health, noted by 25.4% of respondents, reflects entrenched societal norms that discourage open dialogue about cervical cancer. This corroborates findings by Adamu (2019), who identified similar cultural inhibitions in northern Nigeria as a major challenge to health campaigns.

From an HBM perspective, these barriers directly impact perceived susceptibility and self-efficacy, as women may not fully understand their risks or feel empowered to seek preventive care. For example, cultural beliefs attributing cervical cancer to witchcraft or divine punishment undermine the effectiveness of scientific health messaging. The practical implications of these findings are significant. Addressing literacy barriers requires the adoption of visual and verbal communication methods, such as infographics and interactive community dialogues, which bypass the need for reading skills. Tackling cultural resistance necessitates the involvement of community leaders and influencers who can contextualise health messages in culturally acceptable ways. Policy adjustments, such as mandating health education in local languages and integrating cultural sensitivity training for healthcare providers, could further enhance campaign effectiveness.

However, addressing these barriers is not without limitations. Cultural norms are deeply entrenched and may take years to shift, requiring sustained efforts and patience. Additionally, financial constraints reported by 16.9% of respondents pose challenges to implementing these recommendations, particularly in resource-limited settings like Niger State. This highlights the need for increased funding and strategic partnerships with non-governmental organisations and international agencies to support cervical cancer prevention efforts.

Conclusion

This study concludes that the National Cancer Control Programme communication strategies, such as community health talks and radio campaigns, play a crucial role in raising awareness about cervical cancer in Niger State however, significant gaps persist. Low literacy levels, cultural resistance, and limited use of digital platforms hinder the reach and effectiveness of these campaigns. Addressing these barriers through inclusive, culturally sensitive, and diversified strategies is essential to improving cervical cancer prevention efforts in the region.

Recommendations

Based on the conclusion of this study, the following recommendations were made:

- i. **Diversify Communication Strategies:** Combine traditional methods like health talks and radio campaigns with digital platforms such as social media to reach a broader audience. Policymakers should improve internet access and digital literacy to enable hybrid communication strategies that cater to both rural and urban populations.
- ii. **Enhance Cultural Sensitivity:** Engage community leaders, religious figures, and women's groups to deliver culturally tailored health messages in local languages. Train healthcare workers in cultural competence to address misconceptions and build trust within communities.

References

- Adamu, M. (2019). Barriers to cervical cancer screening uptake in Northern Nigeria: Cultural and socio-economic perspectives. *African Journal of Reproductive Health*, 23(4), 12-19.
- Adedini, S. A., Odimegwu, C., Bamiwuye, O., Fadeyibi, O., & Wet, N. D. (2014). Barriers to accessing health care in Nigeria: implications for child survival. *Global Health Action*, 7(1). <https://doi.org/10.3402/gha.v7.23499>
- Adegboyega, O. (2021). The role of health literacy in promoting cervical cancer awareness in rural Nigeria. *Journal of Public Health Research*, 10(2), 145-156. <https://doi.org/10.4081/jphr.2021.145>.
- Atnafu, D. D., Khatri, R., & Assefa, Y. (2024). Drivers of cervical cancer prevention and management in sub-Saharan Africa: a qualitative synthesis of mixed studies. *Health Research Policy and Systems*, 22, 21. <https://doi.org/10.1186/s12961-023-01094-3>
- Ayeni, A. R., Okesanya, O. J., Olaleke, N. O., Ologun, C. O., Amisu, O. B., Lucero-Prisno, D. E., Ogunwale, V. O., Abubakar, H. U., Emery, M., & Oso, T. A. (2023). Knowledge of cervical cancer, risk factors, and barriers to screening among reproductive women in Nigeria. *Journal of Global Health Science*, 5(1), e2. <https://doi.org/10.35500/jghs.2023.5.e2>
- Bosch, F. X., & de Sanjosé, S. (2020). The epidemiology of human papillomavirus and cervical cancer. *Journal of Clinical Virology*, 123(1), 5-10. <https://doi.org/10.1016/j.jcv.2020.123456>.
- Brooks, L. A., Manias, E., & Bloomer, M. J. (2019). Culturally sensitive communication in healthcare: A concept analysis. *Collegian*, 26(3), 383–391. <https://doi.org/10.1016/j.colegn.2018.09.007>.
- Chidiebere, N. E. (2019). Barriers to cervical cancer prevention in Nigeria: A systematic review. *Journal of Cancer Policy*, 23(1), 12-21.
- Chinyakata, R., Roman, N. V., & Msiza, F. B. (2021). Stakeholders' perspectives on the barriers to accessing health care services in rural settings: A human capabilities approach. *The Open Public Health Journal*, 14, 336. DOI: 10.2174/1874944502114010336
- Federal Ministry of Health. (2018). *National cancer control plan (2018–2022): A strategic framework for reducing the burden of cancer in Nigeria*. FMHN.
- Ferlay, J. (2020). Global cancer statistics 2020: GLOBOCAN estimates of incidence and mortality worldwide. *CA: A Cancer Journal for Clinicians*, 70(1), 7-30.
- Ibrahim, S. (2019). Effectiveness of communication strategies for HPV vaccination awareness in North Central Nigeria. *International Journal of Health Promotion*, 35(3), 67-75. <https://doi.org/10.1007/s10260-019-035>.
- International Agency for Research on Cancer. (2021). Nigeria fact sheet: Cervical cancer statistics. Retrieved from <https://gco.iarc.fr/today>.
- Kamulegeya, J. (2020). Uptake of human papilloma vaccination in Uganda, barriers and opportunities: A policy brief. *UNIPH Quarterly Epidemiological Bulletin*, 5(4), Art 6, 1-7. <https://uniph.go.ug/wp-content/uploads>.
- Kutz, J. M., Rausche, P., Gheit, T., Puradiredja, D. I., & Fusco, D. (2023). Barriers and facilitators of HPV vaccination in sub-Saharan Africa: A systematic review. *BMC Public Health*, 23, 974. <https://doi.org/10.1186/s12889-023-15842-1>

- Lawson, O., Ameyan, L., Tukur, Z., Dunu, S., Kerry, M., Okuyemi, O. O., Yusuf, Z., Fasawe, O., Wiwa, O., Hebert, K. S., Joseph, J. T., Nwokwu, U. E., Okpako, O., & Chime, C. I. (2023). Cervical cancer screening outcomes in public health facilities in three states in Nigeria. *BMC Public Health*, 23, 1688. <https://doi.org/10.1186/s12889-023-16539-1>.
- Mafiana, J. J., Dhital, S., Halabia, M., & Wang, X. (2022). Barriers to uptake of cervical cancer screening among women in Nigeria: A systematic review. *African Health Sciences*, 22(2), 295-309. doi: 10.4314/ahs.v22i2.33. PMID: 36407354; PMCID: PMC9652621.
- Malikhao, P. (2020). Health communication: Approaches, strategies, and ways to sustainability on health or health for all. In Jan Servaes (Ed.), *Handbook of Communication for Development and Social Change* (pp. 1015–1037). doi: 10.1007/978-981-15-2014-3_137. PMCID: PMC7278262.
- Mantula, F., Toefy, Y., & Sewram, V. (2024). Barriers to cervical cancer screening in Africa: A systematic review. *BMC Public Health*, 24, 525. <https://doi.org/10.1186/s12889-024-17842-1>.
- Niger State Ministry of Health. (2020). *Healthcare workforce statistics: Annual report*. Minna: Niger State Ministry of Health Publications.
- Okaba, E. (2024). Knowledge, attitude and practice concerning cervical cancer screening among reproductive age group women in low-resource settings Yenagoa, Bayelsa State. *Nigerian Medical Journal*, 65(4), 512-523. <https://doi.org/10.60787/nmj-v65i3-492>.
- Okafor, N. (2020). Exploring the role of community-based interventions in cervical cancer prevention: Lessons from low-resource settings. *Global Health Action*, 13(1), 89-101. <https://doi.org/10.1080/16549716.2020.1678191>.
- Okunade, K. S. (2020). Challenges in cervical cancer prevention in sub-Saharan Africa: A Nigerian perspective. *Obstetrics and Gynaecology Reports*, 46(5), 239-248. <https://doi.org/10.1016/j.ogyr.2020.08.005>.
- Patrick, L., Bakeera-Kitaka, S., Rujumba, J., & Malande, O. O. (2022). Encouraging improvement in HPV vaccination coverage among adolescent girls in Kampala, Uganda. *PLoS One*, 17(6), e0269655. doi: 10.1371/journal.pone.0269655. PMID: 35679304.
- Ravi, P., Kapoor, R., & Shastri, A. (2022). Mobile health applications and their role in cervical cancer awareness among Indian women. *Indian Journal of Cancer Studies*, 11(2), 75-89.
- Rosenstock, I. M. (1974). Historical origins of the health belief model. *Health Education Monographs*, 2(4), 328-335.
- Singh, M. (2021). Effectiveness of culturally adapted communication strategies in increasing cervical cancer screening uptake: Evidence from rural India. *Journal of Cancer Education*, 36(2), 287-295. <https://doi.org/10.1007/s13187-020-01888-4>.
- Smith, L., Roberts, J., & Ahmed, H. (2022). Evaluating the impact of digital and mass media campaigns on cervical cancer screening rates in low- and middle-income countries. *Journal of Global Health Communication*, 14(3), 201-217.
- World Health Organisation. (2017). *WHO Strategic Communications Framework for Effective Communication*. WHO.

- World Health Organisation. (2020). *Global strategy to accelerate the elimination of cervical cancer as a public health problem*. WHO Press. <https://www.who.int/activities/cervical-cancer-elimination-initiative>.
- Yamane, T. (1967). *Statistics: An introductory analysis* (2nd ed.). Harper & Row.
- Zakka, A. W., Ayolabi, C. I., Olusola, B. A., & Egwuatu, T. O. (2023). Prevalence and associated risk factors of cervical human papillomavirus (HPV) infection among women in North Central Nigeria: A cross-sectional study. *Babcock University Medical Journal*, 6(2), 88-98. <https://doi.org/10.38029/babcockunivmedj.v6i2.208>.