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Implementing a Community-Based Health Education and Mobile Screening Intervention to Improve Accessibility and Uptake of Breast and Cervical Cancer Screening Programs in Ebonyi State, Nigeria.

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ABSTRACT

Breast and cervical cancers continue to be major causes of cancer morbidity and mortality among women in developing nations such as Nigeria. Inadequate knowledge about screening, lack of access to screening programs, sociocultural impediments, and poor health system performance are some factors that lead to low participation rates especially in remote areas. This study evaluated community-based education and mobile screening interventions to improve breast and cervical cancer screening access among Ebonyi women. A quasi-experimental design of community-based studies with pre-test and post-test measurements was employed among women aged 21-65 years within selected communities in Ebonyi State. The health education and mobile screening services involved culturally sensitive educational talks, and clinical breast examination and visual inspection with acetic acid (VIA) test for cervical cancer screening, respectively. Statistical analysis was done using descriptive and inferential statistics with a significant level of $p < 0.05$. Awareness and utilization of breast and cervical cancer screening services were low at baseline. Awareness about breast and cervical cancer screening, as well as the perceived benefits of screening, was significantly enhanced post-intervention. Utilization of screening services increased greatly among those screened for breast cancer (from 18.0% to 61.0%) and those who underwent screening for cervical cancer (from 14.5% to 55.5%) ($p < 0.001$). Most respondents indicated that screening services became more accessible to them after the intervention. A community health education campaign coupled with mobile screening services has proven highly effective in improving access to, and utilization of, breast and cervical cancer screening services in Ebonyi State.

Keywords:
Community-Based; Health Education; Intervention; Breast and Cervical Cancer

INTRODUCTION

Breast and cervical cancers continue to be some of the most pressing public health problems affecting women worldwide, especially in LMICs because of high levels of mortality and morbidity rates caused by poor access to screening and delayed diagnosis (Kassa *et al*., 2024; Chanakira *et al*., 2024).

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The early identification of these cancers through screening is important for reducing their prevalence, but several factors have made it difficult to screen women for breast and cervical cancer (Mantula *et al*., 2024; Omowhara *et al*., 2023).

In Nigeria, changing demography and epidemiology have been partly responsible for an increase in the prevalence of chronic non-communicable conditions, with breast and cervical cancers being some of the main causes of cancer morbidity and mortality in women (Adegeye *et al*., 2020). Despite relatively high levels of awareness concerning breast and cervical cancer, screening practices are less advanced, especially in rural settings, owing to inadequate healthcare infrastructure and lack of systematic screening programs (Okunowo and Smith-Okonu, 2020). The absence of a national strategy for cervical cancer screening and breast screening programs further exacerbates the issue, which has resulted in opportunistic screening that relies on health-seeking behavior (Mantula *et al*., 2024).

Several studies have shown the efficacy of community-based interventions, especially interventions involving trained health educators, peers, and mobile health techniques, for enhancing knowledge and practice of cancer screening in disadvantaged communities (Jacob *et al*., 2023; Richardson-Parry *et al*., 2023; Ari *et al*., 2023; Addo-Lartey *et al*., 2024). For instance, in a prospective intervention carried out in southeast Nigeria, the provision of community health educators to educate people regarding breast and cervical cancer at their residences led to the adoption of clinical breast examinations and cervical cancer screenings by over 60% of the population (previously less than 5%) (Chigbu *et al*., 2017). Another example is the successful implementation of community-based educational programs for promoting cervical screening in rural areas in Nigeria (Nwokoro *et al*., 2025). These results are supported by other studies conducted in sub-Saharan Africa, which have found that the most successful approaches to increase participation rates in cervical screening programs include direct involvement of communities and use of local staff, for instance community health workers, in addition to mobile screening and behavior change communications (Lott *et al*., 2020).

Although community-centered approaches have recently gained increased attention in the prevention of cervical cancer, there is still a dearth of evidence about their effectiveness in promoting mobile health education and screening in rural Nigerian communities, including those located in Ebonyi State. Factors such as distance from health care centers, poor understanding of benefits associated with cervical screening, financial limitations, and certain cultural myths hamper women's access to preventive care (Mantula *et al*., 2024; Nwokoro *et al*.,2025). In view of the above factors, there is an urgent requirement for implementation research that measures not just the impact on awareness and service uptake but also explores other determinants of accessibility, acceptability, and sustainability in terms of service provision in the real community settings.

The health education program implemented within communities serves the purpose of addressing the knowledge deficit about the prevention of breast and cervical cancer through screening by offering accurate and culturally sensitive information and dispelling common myths and fears associated with breast and cervical cancer screenings (Okunowo and Smith-Okonu, 2020; Nwokoro *et al*., 2025). The mobile screening facilities complement the former strategy by making it easier to have clinical exams conducted outside traditional healthcare facilities and overcoming structural barriers, including travel distance and costs, thereby making such an approach much more feasible and acceptable (Lott *et al*., 2020). Integrating these two approaches has the potential to create synergistic effects, improving not only knowledge and perceptions but also practical uptake of services that detect precancerous lesions and early-stage cancers.

Mobile outreach screening is essential in overcoming the limitations of the health care system in delivering preventive services (Donkor *et al*., 2023; ElKefi *et al*., 2026). In Nigeria, there is a lack of screening facilities in secondary hospitals and even in the city, hence making rural women miss out on the service (Mantula *et al*., 2024). Therefore, most women will only seek the service when they show symptoms or come into contact with medical services, which often leads to delayed intervention. Overcoming these challenges by adopting mobile screening may help achieve timely diagnosis and reduce the disease burden.

In view of the high incidences of breast and cervical cancers, as well as the lack of literature on effective interventions within the community level in Nigeria, particularly in eastern Nigeria such as Ebonyi, which is characterized by poverty and poor access to health care, it is important to study the impact of health education and mobile screening program intervention. This research aims at investigating the influence of health education and mobile screening program intervention on cancer screening availability and utilization amongst women in Ebonyi State. This research will be instrumental in providing policy makers with information on how best to develop appropriate interventions geared towards enhancing cancer prevention services in Nigeria.

MATERIALS AND METHODS

Ethical Considerations

Ethical approval was obtained from the Ethics Review Committee of David Umahi Federal University of Health Sciences, Uburu (DUFUHS/UREC/ECN/2026/019). Permission was also obtained from community leaders. Written informed consent was obtained from all

participants. Privacy and confidentiality were strictly maintained throughout the study.

Study Design

In this study, the experimental design adopted was quasi-experimental research design where the intervention of health education and mobile screening was tested using pre- and post-test designs in Ebonyi State, Nigeria, to determine its impact on accessibility and utilization of services for breast and cervical cancer screening among women. This type of design is ideal for assessing health interventions conducted in communities (WHO, 2014; Reeves *et al*., 2017).

Study Area

The research was carried out in selected rural and semi-urban communities in Ebonyi State, southeastern Nigeria. Ebonyi State is an agrarian state with restricted availability of specialized health care services such as cancer screening centers. Ebonyi State is commonly divided into three senatorial zones, which are often used as the major geopolitical zones for administrative, political, and development planning purposes: Ebonyi North (6.3236° N, 8.1511° E), Ebonyi Central (6.2649° N, 8.1137° E), and Ebonyi South (6.0689° N, 8.1373° E). The state has a high burden of preventable cancers and low screening coverage, making it suitable for this intervention.

Study Population

The study population consisted of women between the aged 21-65 years residing in the selected communities. This age range conforms with national and international recommendations for cervical and breast cancer screening (Curry *et al*., 2018).

Inclusion and Exclusion Criteria

Women who had resided in the community for at least six months and provided informed consent were included. Women with a previous diagnosis of breast or cervical cancer, or those who were severely ill at the time of data collection, were excluded.

Sample Size Determination and Sampling Technique

Sample size was determined using standard formulae (shown below) for comparing proportions in interventional studies, accounting for an anticipated increase in screening uptake and a 10% non-response rate. A multistage sampling technique was employed: selected local government areas were randomly chosen, followed by random selection of communities and households. Eligible women within households were recruited consecutively.

$$n = \frac{\left[Z_{\alpha/2}\sqrt{2P(1-P)} + Z_{\beta}\sqrt{P_1(1-P_1)+P_2(1-P_2)}\right]^2}{(P_1-P_2)^2}$$

Where:

- n = minimum sample size per group
- $Z_{\alpha/2}$ = standard normal deviate at 95% confidence level = **1.96**
- Z_{β} = standard normal deviate at 80% power = **0.84**
- P_1 = baseline proportion of screening uptake
- P_2 = expected proportion after the intervention
- $P = \frac{P_1+P_2}{2}$

With a confidence level of 95%, 80% statistical power, expected increased uptake in screening among women as a result of the intervention, design effect of 1.3 for multistage sampling, and non-response of 10%. The minimum sample size required was found to be 400 women.

Intervention Components

The intervention consisted of two integrated components:

Health Education Program:

The health education program involved well-planned health education classes, which used locally tailored IEC information. The topics covered included risk factors, signs, and symptoms of breast and cervical cancers, ways of preventing the diseases, advantages of early diagnosis, and different screening techniques. This process was done by qualified health practitioners and community health workers through interactive learning methods like discussion groups and demonstration on breast self-examination.

Mobile Screening Programs:

Mobile screening programs were organized in the communities to minimize distance and financial problems. For breast cancer screening, the procedure used was the clinical breast exam (CBE). Cervical cancer screening was done using the VIA method, following the World Health Organization (WHO) guidelines for resource-poor settings (WHO, 2013). Positive patients were taken to tertiary health care centers for further investigation and treatment.

Data Collection Instruments and Procedures

Data was collected by means of a pretested structured interview-administered questionnaire based on standardized questions for cancer screening services. Information obtained included demographic profile, knowledge level, attitude, accessibility issues, and screening behavior. Baseline data was collected prior to the intervention while follow up data collection took place three months following the intervention.

Outcome Measures

Primary outcome measure was the utilization of screening services for breast and cervical cancer while secondary outcomes were changes in knowledge, attitude, accessibility and acceptability of mobile screening services

Data Analysis

The data were inputted and analyzed with SPSS version 26. Participant characteristics were presented in descriptive statistics. The pre-post comparison of the intervention was done using chi-square tests for categorical data and paired t-tests for numerical data. Logistic regression was performed to determine the predictors of adherence to screening.

RESULTS AND DISCUSSION

Sociodemographic Characteristics of Participants

The sample consisted of 400 women with an average age of 38.6 ± 9.4 years. Most of the subjects were married (62.5%), rural residents (58.0%), and had attained primary education level (71.0%).

Table 1: Sociodemographic characteristics of study participants (n = 400)

Variable	Frequency (n)	Percentage (%)
Age group (years)		
21–30	92	23.0
31–40	138	34.5
41–50	108	27.0
51–65	62	15.5
Marital status		
Single	102	25.5
Married	250	62.5
Widowed/Separated	48	12.0
Residence		
Rural	232	58.0
Semi-urban	168	42.0

Baseline Knowledge, Attitudes, and Practices

Awareness and utilization of screening for breast and cervical cancer were relatively low at baseline levels. Fewer than one-third of the participants had previous knowledge about screening methods, and only a small number had been screened before.

Table 2: Baseline knowledge, attitudes, and practices regarding breast and cervical cancer screening (n = 400)

Variable	Yes n (%)	No n (%)
Awareness of breast cancer screening	116 (29.0)	284 (71.0)
Awareness of cervical cancer screening	86 (21.5)	314 (78.5)
Positive attitude toward screening	168 (42.0)	232 (58.0)
Ever screened for breast cancer	72 (18.0)	328 (82.0)
Ever screened for cervical cancer	58 (14.5)	342 (85.5)

Impact of Health Education on Awareness and Perception

Following the community-based health education intervention, there was a statistically significant improvement in awareness and perception of screening benefits.

Table 3: Awareness and perception of screening benefits before and after health education

Variable	Pre-intervention %	Post-intervention %	*p*-value
Awareness of breast cancer screening	29.0	78.5	<0.001
Awareness of cervical cancer screening	21.5	74.0	<0.001
Perceived benefit of early screening	35.5	81.0	<0.001

Accessibility to Screening Services

Mobile screening services substantially improved perceived accessibility to screening services among women in underserved communities.

Table 4: Perceived accessibility to screening services after mobile screening intervention

Accessibility indicator	Agree n (%)	Disagree n (%)
Screening site was easily accessible	332 (83.0)	68 (17.0)
Reduced transportation barriers	318 (79.5)	82 (20.5)
Reduced cost of accessing screening	290 (72.5)	110 (27.5)

Screening Uptake Before and After Intervention

Screening uptake for both breast and cervical cancer increased significantly following the intervention.

Table 5: Uptake of screening services before and after intervention

Screening type	Pre-intervention n (%)	Post-intervention n (%)	*p*-value
Breast cancer screening	72 (18.0)	244 (61.0)	<0.001
Cervical cancer screening	58 (14.5)	222 (55.5)	<0.001

Factors Influencing Participation in Screening

Several sociodemographic, cultural, and health-system factors were found to significantly influence screening participation.

Table 6: Factors associated with participation in cancer screening

Factor	Screened n (%)	Not screened n (%)	*p*-value
Secondary education and above	198 (68.0)	94 (32.0)	0.002
Married status	182 (60.5)	118 (39.5)	0.015
Prior health education exposure	214 (71.5)	86 (28.5)	<0.001
Cultural belief as barrier	64 (24.0)	202 (76.0)	<0.001

Acceptability and Satisfaction with Mobile Screening

Community acceptability of the mobile screening approach was high, with most participants expressing satisfaction and willingness to recommend the service.

Table 7: Acceptability and satisfaction with mobile screening services

Variable	Yes n (%)	No n (%)
Satisfied with mobile screening services	354 (88.5)	46 (11.5)
Would recommend screening to others	360 (90.0)	40 (10.0)
Willing to participate in future screening	346 (86.5)	54 (13.5)

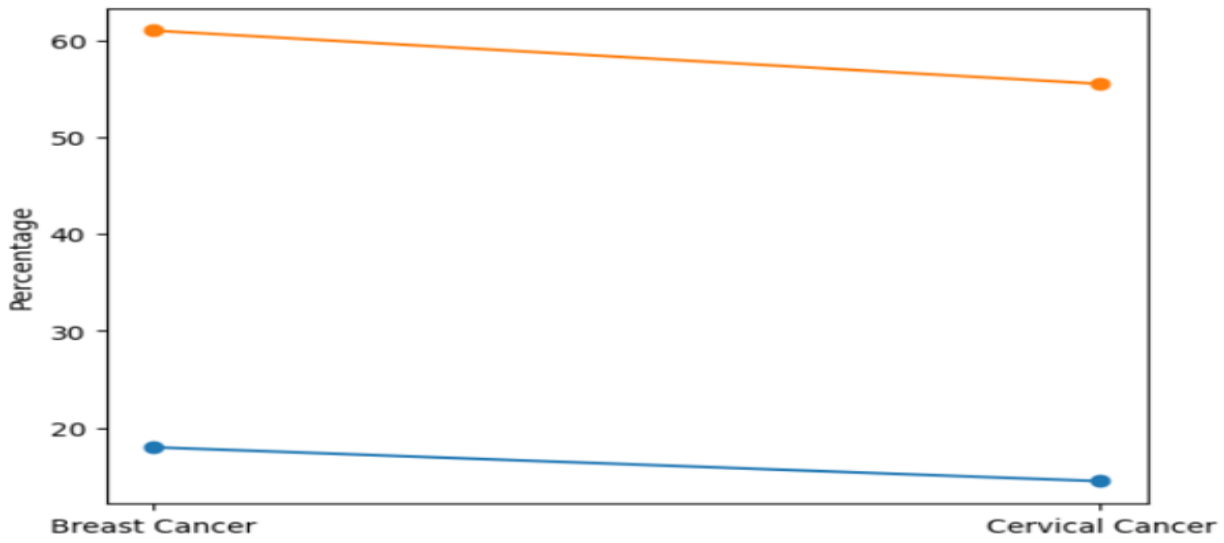

Fig 1: Line graph illustrating changes in screening uptake rates for breast and cervical cancer pre- and post-intervention.

In this study, an investigation was conducted to determine the efficacy of health education and mobile screening services in increasing access to and use of breast and cervical cancer screening programs for women residing in Ebonyi State, Nigeria. From the results obtained, it can be seen that there were significant gains made with respect to knowledge, perceptions, accessibility, and utilization after conducting this intervention program (Tables 1-7 and Fig.1). The major improvements seen in terms of knowledge, perceptions, accessibility, and use of the services of breast and cervical cancer screening following the intervention can be attributed to the joint efforts made by the community-based health education intervention and the mobile screening program. The health education helped increase the participants' awareness regarding breast and cervical cancer, the need for early diagnosis, their eligibility for the screening program, and the availability of the services. The knowledge gained through this intervention helped eliminate many myths and fears surrounding the services. Awareness about breast and cervical cancer screenings and practices among participants were initially low, with only slightly above one-third of the women being aware of breast and cervical cancer screenings, while less than one-fifth of them had previously received breast and cervical cancer screening services (Tables 2 and 3). This result is not unusual since several studies conducted on the subject matter in various regions of Nigeria, as well as other sub-Saharan African countries, showed a low rate of participation in breast and cervical cancer screenings despite the high prevalence of the two diseases (Akinyemiju, 2012; Okunowo and Smith-Okonu, 2020).

The results of the health education program showed a significant increase in the level of awareness of the breast and cervical cancer screening techniques and also improved positive perceptions of the need for early detection through screening (Table 3). The most plausible explanation for such results is that the community-based health education intervention managed to overcome some critical barriers regarding knowledge and perception of screening tests for women. In an intervention study, a noticeable change in awareness and positive perceptions is anticipated if structured health education is provided to the subjects. This result supports findings from earlier research that found culturally relevant health education to have a positive effect on women's understanding of breast and cervical cancer screenings (Nwokoro *et al*., 2025). Increased awareness is the initial step towards encouraging women to adopt better practices regarding their health. Improved awareness is a critical precursor to behavior change, particularly in contexts where fear, stigma, and misinformation contribute to delayed presentation and poor outcomes (Mantula *et al*., 2025).

The implementation of mobile screening services greatly enhanced perceptions regarding access to screening tests (table 4), as most participants felt that there were fewer transport and financial constraints. This observation aligns with previous research which shows that decentralizing screening services through mobile clinics is one of the best methods for accessing underserved groups, especially in rural and semi-urban areas where access to health facilities is limited (Lott *et al*., 2020). By bringing services closer to women's homes, mobile screening reduces opportunity costs and logistical challenges that often discourage preventive health-seeking behavior.

One major outcome of this research is the marked rise in screening utilization after the implementation of the intervention (Table 5). The rate of breast cancer screening rose from 18.0% to 61.0%, while that of cervical cancer screening increased from 14.5% to 55.5%. The results obtained in this study can be likened to the findings of another research conducted in southeast Nigeria on the same topic, where the combination of health education and screening led to considerable progress in screening utilization (Chigbu *et al*., 2017). The magnitude of improvement observed in this study underscores the synergistic effect of coupling demand-generation activities (health education) with supply-side interventions (mobile screening).

Sociodemographic and healthcare system-related variables (Table 6) were seen to significantly affect screening uptake. Increased levels of education, marriage, and experience with health education campaigns positively influenced screening behavior, whereas cultural beliefs hindered it. These results align with past research conducted in Nigeria on education, social support, and cultural values as important determinants of screening behavior among women (Akinyemiju, 2012; Okunowo and Smith-Okonu, 2020). Overcoming these obstacles will require continued community involvement and culturally appropriate messages.

It is further supported by the high degrees of acceptability and satisfaction exhibited by the participants (Table 7). The majority were willing to refer others to these services and even join other future screening exercises. Acceptability is a very important factor that determines the sustainability of any intervention in any area, especially where resources are few, and there is need to conform to the wishes and needs of the people (WHO, 2014).

This study offers crucial data to guide future cancer screening programs in Ebonyi State and other regions with limited resources. The results show that community-based awareness activities paired with mobile screening can greatly enhance access and utilization rates, thus making it possible to incorporate such initiatives into current programs within primary healthcare and public health systems. Furthermore, the study is consistent with the World Health Organization recommendations for developing site-specific measures for increasing early

diagnosis of breast and cervical cancer among LMICs (Bray *et al*., 2018; WHO, 2024).

Strengths and Limitations

The main advantage of this research is the use of an intervention study design in the community setting. This helps assess the outcomes of the intervention in practice. Combining education and mobile screening represents a pragmatic design that helps overcome both demand- and supply-side challenges. Nevertheless, the absence of the control group and a relatively short follow-up period are limitations of the research design. Also, it should be mentioned that self-reported data might suffer from recall or social desirability bias.

Implications for Practice and Policy

The results emphasize the significance of focusing on mobile health approaches for cancer control in the country. The implementation of such projects could assist in lowering mortality rates and achieving global objectives set for breast and cervical cancer control. Continuous support for the provision of community health education together with accessible screening services will play an important role in addressing the lack of cancer prevention in Nigeria.

CONCLUSION

This research has proven that community health education combined with mobile screening facilities is an appropriate way through which breast and cervical cancer screening can be accessed by the disadvantaged women in Ebonyi State, Nigeria. This approach improved awareness levels, helped change their attitude toward the need for such screening tests, lowered any structural obstacles to accessing the tests, and increased screening rates. Community acceptance and satisfaction levels indicate that there was feasibility in using this method of increasing women's access to breast and cervical cancer screening services. This approach considers both demand- and supply-side factors hindering access to screening facilities. These results offer valuable information that can be used to justify the introduction of community-based education and mobile care services within current health systems and cancer prevention programs to prompt early diagnosis and reductions in the burden associated with these diseases.

Authors' contributions

The research concept was developed by Simon Uzor, Ugonna Cassandra Aniokete. Simon Uzor, Ugonna Cassandra Aniokete and Ejike Bartholomew Ezediokpu collected the data. Statistical analysis was performed by Henshaw Uchechi Okoroiwu. The draft of the manuscript was prepared by Simon Uzor, Favour Ebere Nwadum and Ndifreke Winsor Brown-Okporie. All authors have read and approved the final manuscript.

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Declaration of conflict of interest

The authors have no conflict of interest to declare.

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REFERENCE

Adegeye, Y. A., Ogunbiyi, J. O., & Omigbodun, A. O. (2020). Trends in the patterns of cancers in Nigerian women over five decades. *African Journal of Biomedical Research, 23*(Suppl. 1), 105–109.

Addo-Lartey, A. A., Bonful, H. A., Sefenu, R. S., Abagre, T. A., Asamoah, A., Bandoh, D. A., Awua, A. K., Adu-Aryee, N. A., Dedey, F., Adanu, R. M. K., & Okuyemi,

K. S. (2024). Effectiveness of a culturally tailored text messaging program for promoting cervical cancer screening in Accra, Ghana: A quasi-experimental trial. *BMC Women's Health, 24*, 22. **https://doi.org/10.1186/s12905-023-02867-2**

Akinyemiju, T. (2012). Socio-economic and health access determinants of breast and cervical cancer screening in Nigeria. *Oncology, 83*(1), 1–9. **https://doi.org/10.1371/journal.pone.0048834**

Ari, E. S., Dioso, R. P., & Sotunsa, J. O. (2023). Improving care-seeking behavior toward cervical cancer screening participation among Gwafan community women, North-Central Nigeria. *BMC Women's Health, 23*, 356. **https://doi.org/10.1186/s12905-023-02353-9**

Bray, F., Ferlay, J., Soerjomataram, I., Siegel, R. L., & Jemal, A. (2018). Global cancer statistics 2018. *CA: A Cancer Journal for Clinicians, 68*(6), 394–424. **https://doi.org/10.3322/caac.21492**

Chanakira, E. Z., Thomas, C. V., Balen, J., & Mandrik, O. (2024). A systematic review of public health interventions to address breast cancer inequalities in low- and middle-income countries. *Systematic Reviews, 13*, 195. **https://doi.org/10.1186/s13643-024-02620-2**

Chigbu, C. O., Onyeka, T. C., Onyebuchi, A. K., Mamah, J. E., & Ezenyeaku, C. C. K. (2017). The impact of community health educators on uptake of cervical and breast cancer prevention services in Nigeria. *International Journal of Gynecology & Obstetrics, 137*(3), 319–324. **https://doi.org/10.1002/ijgo.12150**

Curry, S. J., Krist, A. H., Owens, D. K., Barry, M. J., Caughey, A. B., Davidson, K. W., Doubeni, C. A., Epling, J. W., Kemper, A. R., Kubik, M., Landefeld, C. S., Mangione, C. M., Phipps, M. G., Silverstein, M., Simon, M. A., Tseng, C.-W., & Wong, J. B. (2018). Screening for cervical cancer: U.S. Preventive Services Task Force recommendation statement. *JAMA, 320*(7), 674–686. **https://doi.org/10.1001/jama.2018.10897**

Donkor, A., Ayitey, J. A., Adotey, P. N., Ofori, E. O., Kitson-Mills, D., Vanderpuye, V., Opoku, S. Y., Luckett, T., Agar, M. R., & Engel-Hills, P. (2023). Mobile-based application interventions to enhance cancer control and care in low- and middle-income countries: A systematic review. *International Journal of Public Health, 68*, 1606413. **https://doi.org/10.3389/ijph.2023.1606413**

ElKefi, S., Scheinmann, R., Matthews, A. K., & Phillips, E. (2026). Mobile cancer screening programs: A systematic review of implementation challenges and population access. *International Journal of Environmental Research and Public Health, 23*(4), 465. **https://doi.org/10.3390/ijerph23040465**

Jacob, V., Chattopadhyay, S. K., Hopkins, D. P., Pignone, M., Eggers, M. E., Guide to Community Preventive Services Cancer Screening Work Group, & Community Preventive Services Task Force. (2023). Community health workers to increase cancer screening: Three Community Guide systematic reviews. *American Journal of Preventive Medicine, 64*(4), 579–594. **https://doi.org/10.1016/j.amepre.2020.08.011**

Kassa, R. N., Shifti, D. M., Alemu, K., & Omigbodun, A. O. (2024). Integration of cervical cancer screening into healthcare facilities in low- and middle-income countries: A scoping review. *PLOS Global Public Health, 4*(5). **https://doi.org/10.1371/journal.pgph.0003183**

Lott, B. E., Trejo, M. J., Baum, C., McClelland, D. J., Adsul, P., Madhivanan, P., Carvajal, S., Ernst, K., & Ehiri, J. (2020). Interventions to increase uptake of cervical screening in sub-Saharan Africa: A scoping review using the integrated behavioral model. *BMC Public Health, 20*, 654. **https://doi.org/10.1186/s12889-020-08777-4**

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**

Nwokoro, U. I., Chinweuba, A. U., Okoronkwo, I. L., Obaseki, C.O., Ekechukwu, E.N.D. (2025). Community-based educational interventions to improve cervical screening uptake in rural Nigeria: A randomized controlled trial. *African Journal of Biomedical Research, 28*(4S), 433–438. **https://doi.org/10.53555/AJBR.v28i4S.8602**

Okunowo, A. A., & Smith-Okonu, S. T. (2020). Cervical cancer screening among urban women in Lagos, Nigeria: Barriers and motivators for screening. *Nigerian Journal of General Practice*. 18(1). 10-16. **https://doi.org/10.60787/njgp.v18i1.36**

Omowhara, B., Soter, S., & Adekunbiola, B. (2023). Cervical cancer screening awareness and uptake among under-screened women in a rural Nigerian community. *Nigerian Health Journal, 22*(4), 428–432.

Reeves, B. C., Wells, G. A., & Waddington, H. (2017). Quasi-experimental study designs series—Paper 5: A

checklist for classifying studies evaluating the effects of health interventions. *Journal of Clinical Epidemiology, 89*, 30–42. **https://doi.org/10.1016/j.jclinepi.2017.02.016**

Richardson-Parry, A., Silva, M., Valderas, J. M., Donde, S., Woodruff, S., & van Vugt, J. (2023). Interactive or tailored digital interventions to increase uptake in cervical, breast, and colorectal cancer screening to reduce health inequity: A systematic review. *European Journal of Cancer Prevention, 32*(4), 396–409. **https://doi.org/10.1097/CEJ.0000000000000796**

World Health Organization. (2013). *WHO guidelines for screening and treatment of precancerous lesions for cervical cancer prevention*. World Health Organization.

World Health Organization. (2014). *Implementation research in health: A practical guide*. World Health Organization.

World Health Organization. (2024). *Cancer screening guidelines and challenges in low- and middle-income countries*. World Health Organization.