



## Exposure to “Arm-Our-Youths” Cancer Health Information Campaign and Adoption of Safety-Health Measures among In-School Adolescent Girls in Anambra State

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| Received: 27.09.2023 | Accepted: 02.10.2023 | Published: 04.10.2023

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### Abstract

*The rate at which cancer claim the lives of its victims in developing countries is becoming alarming even in the height of development in medicine and technology. Among the major causes of the chances of death by cancer is information knowledge gap among potential cancer victims. In response to need to control cancer spread, “Arm-Our-Youths” cancer information campaign introduced cancer risks and safety-measures into post-primary school education curriculum in Nigeria. This study is set to ascertain whether exposure to these health campaign messages translate into adoption of health safety measures among in-school adolescent girls. Survey method and FGD were adopted in studying 367 in-school girls from 11 girls’ secondary schools selected through multi-stage sampling technique and 21 discussants purposively selected for the study. The study was premised on the Social Exchange Theory and Health belief model. Findings revealed that although respondents are well exposed to the “Arm-Our-Youths” cancer information campaign messages, their adoption of health safety measures were low. Exposure to this campaign did not translate to adoption of safety health practices among the respondents. It was recommended that while more organisations and government should invest in more campaign to get the people earlier informed, efforts should be made to convincingly pass the messages to the recipients such that it will command adoption of health safety measures among them.*

**Keywords:** “Arm-Our-Youths”, Cancer, risk behaviours, safety measures, In-school, Adolescent.

### Background to the Study

The development of every nation is largely dependent on the health status of its population. Importantly, among the best ways to secure health safety of the people is through health information campaigns (Kruk, Gage, Arsenault, Jordan, Leslie, Roder-DeWan, Adeyi, Barker, Daelmans, Doubova, English, García-Elorrio, Guanais, Gureje, Hirschhorn, Jiang, Kelley, Lemango, Liljestrand, Malata, Marchant, Matsoso, Meara, Mohanan, Ndiaye, Norheim, Reddy, Rowe, Salomon, Thapa, Twum-Danso, Pate (2018). The need for sound health state of the people is justified in the fact that if the workforce of a nation is facing health challenges, its economic growth will be threatened and development stalled. This accounts for why government of all states and existing non-governmental organisations (NGO) strive to ensure health safety of its people at all time through informing them of all impending health threatening diseases. Fortunately, advocacy campaign use spread

across all spheres of life and more relevantly applied in the area of safety of life from crime, natural disaster and health emergencies.

As one of the sources of ensuring health attitude change among the people, health campaigns have over the years formed a major source of disseminating health safety information to the people at all time. Significantly, health campaigns have contributed to changing health behavior among the people in different climes (Allen, Duke, Davis, Kim, Nonnemaker & Farrelly, 2015; Wakefield, Loken & Hornik, 2010). While health challenges form the major threat to human existence, earlier health information campaign can arguably serve as the method for massive education of the people about all kinds of health challenges including cancer. This is because it has the strength of reaching out to an overwhelming population within the shortest possible time.

One of the dangerous and life-threatening diseases in Nigeria and the global community (Bellanger, Zeinomar & Tehranifar, 2018) which requires effective, aggressive grassroot media campaign for survival is cancer (Fatiregun, Oluokun, Lasebikan, Nwachukwu, Ibraheem, and Olopade, 2021). Cancer is a disease which occurs when changes in a group of normal cells within the body lead to uncontrollable abnormal growth forming a lump called a tumor that causes severe pains to the victims (Centers for Disease Control and Prevention (CDC), (2019). If these tumors or lumps are not early detected and treated, grow inside the body of the host victims and spread into the surrounding normal tissue, or to other parts of the body via the bloodstream and lymphatic systems which usually affect the digestive, nervous and circulatory systems or worse still, release hormones that may affect body function. As a significant public health crisis and one of the leading causes of death globally, The International Agency for Research on Cancer (IARC) (2020) report demonstrated that one in five people falls victim to cancer throughout their lifetime.

Cancer has formed global threat to the lives of people especially the women who are most vulnerable to the two most deadly cancer diseases namely: cervical and breast cancers. The major reason for their high mortality rates in society is poor awareness and late treatment (Hayam, Howida, & Zakeya, 2014). The reason for cancer mortality rate could also be attributed to the economic status of the victims and the poor health facilities in Nigeria. According to WHO (2009), cervical and breast cancers usually claim victory over human lives because of the fact that the victims hardly knew that they are taking some risk actions that can expose them to such severe and live threatening disease. This was captured more vividly in Okeke, (2018) who argued that research has shown that African women, including Nigerians, have low knowledge of the risk factors of breast and cervical cancers. Other studies (Fatiregun, Bakare, Ayeni, Oyerinde, Sowunmi, Popoola, Salako, Alabi, & Joseph, (2020; Fatiregun, Oluokun, Lasebikan, Nwachukwu, Ibraheem, and Olopade, (2021) reveal that although cancer has posed and is still posing a global health challenge to the lives of the people, it is more intense in developing countries such as Nigeria than in developed countries of the world.

Studies have also shown that survival of cancer victims is usually low among women from developing countries because the disease is usually detected too late because of insufficient distribution of cancer detecting facilities and its none-affordability to the teeming population who may be in need of the service (Okeke, 2018). The research suggests that early detection and immediate treatment of cancer are key to cancer redemption. Again, cancer kills more in developing countries owing to the poor health facilities and cost of the treatment which most times are unaffordable to the victims. This situation sometime forces some victims to give up once they discovered that they cannot financially meet up with the challenges ahead of them (Workman, Draetta, Schellens, & Bernards, 2017; Gordon, Walker & Mervin, 2017).

Considering the above facts about cancer, OCI foundation launched a serious cancer health information campaign that attracted the government of Anambra state into including cancer information campaign in the secondary school curriculum. If knowledge gap is the challenge, it is the assumption of these researchers that exposure to the cancer information campaign will encourage adoption among respondents. It was in the position of this assumption that this study investigated the exposure and adoption and safety measures among in-school adolescent girls.

## Statement of the problem

Generally, cancer is a life-threatening disease which has claimed the lives of many victims in Nigeria. Looking at the danger of the disease in line with the level of decay in the country's health sector, the most appropriate way to manage cancer is abstaining from the risk behaviours that could lead to it. Significantly, several non-governmental organisations and government agencies have organized health campaigns at different times even in the media which are targeting cancer spread in Nigeria. Pathetically, some of these campaigns and sensitizations meet the target audience when they have made the mistakes of indulging in the cancer risk behaviours unknowingly. Remaining unaware of the possible risk behaviours that could lead to cervical and breast cancer is a serious problem to the health safety of adolescent girls globally. The implication of this is that, many have fallen victim as a result of ignorance of the risk behaviours that they exhibit and late exposure to the risk behaviours associated with cervical and breast cancer. Those who were eluded by the knowledge of what they ought to do to stay safe are now in regrets. To avoid future regrets among upcoming generation, there is need for not only information on the risk behaviours but timely information about the risk behaviours to keep the people informed in order reduce the rate of cancer spread in Nigeria. The "*Arm-Our-Youths*" cancer information campaign targeted at the adolescent girls in secondary schools in Anambra has come to provide this timely information on the risk behaviours of cancer. Importantly, relying on the fact that exposure to the risk behaviours associated with cervical and breast cancers is or may not necessarily translate to adoption of health safety measures, this study set to empirically examine what the target audience do with this information disseminated to them through this campaign. Knowing what the adolescent girls do with the cancer health risk information that they have been exposed to will be of good help for health policy formulation in Nigeria. This is the gap in knowledge that this study is set to fill.

## Research objectives

The specific objectives of this study are:

1. To ascertain respondents' extent of exposure to "*Arm-Our-Youths*" Cancer Prevention information campaign.
2. To find out the extent to which exposure to cancer risk information translate to practicing communicated behaviours among respondents.
3. To ascertain the factors encouraging adoption of cancer preventive behaviours in "*Arm-Our-Youths*" cancer prevention information among respondents

## Significance of the Study

Theoretically, this study will help in understanding the relationship between health-related theories and health communication messages. It will contribute to the articulation of the roles played by the "*Arm-Our-Youths*" cancer campaign in exposing the school children to cervical and breast cancer risk factors and the need for early detection. The study will also serve as a data base to health communication researchers who may be interested in learning the global fight on cervical and breast cancer and future researchers, who may be embarking on similar research later. Practically, the study will serve as a document for government and non-governmental organizations, policymakers and media campaign planners in the fight against cancer and all other killer diseases in

the world. The study will help the government to understand the impact of the “*Arm-Our-Youths*” cancer campaign and its curriculum on the children’s attitude change which is the main focus of the campaign. It will help them to make policies on how best to catch them young as embedded in the slogan of the campaign- *Arm them young, Arm them all, Arm them now* by exposing the students to certain actions and inactions that could expose them to dangers of being vulnerable to cervical and breast cancer. The study will also expose readers to the importance of what “*Arm-Our-Youths*” cancer information and its curriculum targeted at getting them to know that among the best ways of handling cancer is early detection.

## Scope of the Study

This study covers the risk factors of cervical and breast cancers, their health safety measures and possible methods of testing for detection. The study is interested in exposure to the risk factors and adoption of communicated attitude among the respondents. This study covered only In-School adolescent girls in select secondary schools in Anambra state. The secondary schools were systematically and purposively selected to cover the six educational zones in the state. The choice of the in-school girls for the study was justified by the fact that they are the major target of the “*Arm-Our-Youths*” cancer information. They were also considered more appropriate to be studied based on the ground that they must have been conversant with the two kinds of cancers understudy, their risk factors and preventive measures as contained in the “*Arm-Our-Youths*” information campaign understudy. The choice of female students was basically because of the fact that they are the main set of people mostly vulnerable to cervical and breast cancers in the country.

## The Health Belief Model

This model was developed to explain the relationship between individuals’ perception of health risks and their desire to change health risk behaviours. According to the proponents of the model, people are most likely to adopt a change in their previous attitude if they realize that they are vulnerable to the disease. According to Ghorbani-Dehbalaei, Loripoor and Nasirzadeh, (2021), this model is premised on the assumption that individuals are forced to be willing to change original attitude if they perceive such to expose them to danger of running into a health challenge. This implies that their health perception controls their decision making on health lifestyles. Propounded in the 50s by Godfrey Hochbaum, Irwin Rosenstock, and Rosenstock Kirscht (Boskey, 2023), health belief model argues that one’s beliefs about one’s health and one’s health conditions play significant role in determining one’s health-related behaviours in life. In other words, the behavior that people subscribe to is a product of the belief they have about their health and its condition.

Importantly, there are some key factors that control what the individual think to about their health. Among the factors are the barriers to taking the desired attitude to the expected health behaviour that can keep one safe from the communicated health danger. In this regard, health belief model is interested in the factors that stop the students from taken the actions preached in the “*Arm-Our-Youths*” campaign. The next issue here is the respondents’ degree of knowledge of the dangers associated with the lifestyle they exhibit. Now that the audience in the current study are exposed to the information on cancer challenges, what is left is what they do with the contents. Following exposure to the

message is the benefit accrual from taking the required action as communicated in the messages. The actions to be taken are this contest weighed against the benefit or loss that accompanies them and any one that weigh higher controls the decision of the individual.

Again, the individuals’ perception of susceptibility and the possible chances of survival from the disease being canvassed for in the campaign also controls the decision to take an action. The implication of this is that the exposure to the cancer health information as supplied by the “*Arm-Our-Youths*” campaign can only generate acceptance and adoption if the individuals see the contents as convincing and perceived the dangers as severe, see the benefit of adopting same to suppress that of abandoning the messages and as well see themselves to be susceptible to the diseases. This further means that they have to be convinced through the dissemination of the message that the consequence of cancer is very severe and can amount to death. These were captured in what Boskey, (2023) classified as the components of health belief model which includes the audience perceived severity, susceptibility, benefit and barriers.

Relating this model to the current study, it could be understood that at the time of exposure what follows is message recall leading to believability of the message and possibly adoption of the communicated health behavior if the audience perception is favoruable to the content. This means that should the audience perceive the benefit of adopting the health safety measures as greater than the loss, see themselves as vulnerable to cancer if they continue to exhibit the cancer risk behaviors, they are most likely to adopt the communicated health safety measures and practice them in order to be safe.

## The social exchange theory

Another theory that served as the base of this study is the social exchange theory. This theory is related to the health belief model by way of the consideration that it places on the perceived benefit of adopting a behaviour which is a function of the individuals’ perception. The social exchange theory looks at the actions taken by individuals as a result of cost benefit analysis in which the individual decides to take the action, he or she considers more beneficial to him or her at the moment (Njoki, 2013). This is to say that if the individual considers the attitude change of those cancer risk behaviours as beneficial, they will likely buy the idea of absconding from those lifestyles. On the other hand, if the individuals perceived that they have a means of escape from the dangers that indulging in the condemned attitude and lifestyles, all effort to make them to stop such attitude are most likely to fail.

## Communicating and Acting the “*Arm-Our-Youth*” Cancer Campaign among in-school adolescent girls

Studies on media effect have shown that there is difference between disseminating a public health information and adopting them among the target audience. Nwammuo and Nwachukwu (2021) found that although the respondents are well exposed to social media information from NCDC, they hardly believe NCDC to be sincere to Nigerians on the true position of the virus. This finding corroborated that of Ikegbunam and Agudoso (2021) who argue that one thing is to cultivate a particular behavior among the people and another thing is for the people to adopt and accept to participate in the change behavior communicated. The position of things as it concerns the adoption of cancer health safety measures

among In-School adolescent girls in Nigeria remains a matter of perceived susceptibility to the disease among the students.

Given the economic condition of the people and the nearly zero health infrastructures in the country, the only thing that can appeal to them to seek for attitude change for a positive development is their individual understanding of the deadly nature of the diseases. Having been exposed to all risk factors, causative behaviours and safety measures of breast and cervical cancer through the “*Arm-Our-Youths*” information campaign messages, it is expected that the respondent recall what they were exposed to and put same in practice to join in the fight against cancer in Nigeria. The decay in the health sector in the country and all other developing countries that makes it hard for victims to survive cancer of all kinds should form a serious source of worry to the minds of every potential cancer victim especially after being exposed to this campaign. The issue here is that exposure to cancer preventive measures is different from its adoption. In this study, by taking the fight against cancer to the classroom, the government have done their part of creating awareness to the potential victims. The success of a free cancer society therefore, depends on the potential victims whose action and inactions can encourage or discourage early detection and treatment of cancer.

#### **“*Arm-Our-Youths*” Cancer information Campaign: A Social and Behavior Change Communication**

Social and behavior change communication (SBCC) is an approach that promotes and facilitates changes in knowledge, attitudes, norms and beliefs, and promotes healthy and safe practices among specific groups of people (Health Communication Capacity Collaborative (HC3), 2016). These groups of people are called the intended audiences of the program herein represented by the Nigerian undergraduates. In the case of “*Arm-Our-Youths*” cancer campaign, audiences are potential victims who are targeted for early information and detection of the killer disease in order to be safe should they adopt the change in behaviour and abstain from the communicated risk actions that usually makes them vulnerable to the disease.

As a strategic Social Behaviour Change Communication approach, “*Arm-Our-Youths*” cancer campaign adopted a systematic process to expose the youths to the causes and importance of early detection of cervical and breast cancers and at the same time encourage them to adopt attitudinal change that could translate into taking no risk actions that could make them vulnerable. The campaign went ahead to spell out in clear terms, the possible danger of being a victim of cervical and breast cancers in Nigeria with the level of development in hospital facilities in the country. This very angle provides the public with fear and threat dreadful enough to discourage them from taking the prohibited action of smoking, early sexual engagement, having multiple sexual partners and using soap and detergents for washing their inner body.

While showing the pictures of the affected parts of victims’ body, the campaign exposes the potential victims to the horror associated with being a victim especially in developing countries making it very clear that the best way out is early detection and treatment of the problem at the early stage. While showing the cells of patient victim of cancers, the campaign is asking the target audience in the village, the street and the school to be conscious of their actions and engage in routine check-up for signs and symptoms of breast and cervical cancers. All these are social and behavior change communication contents aimed at deterring the people from taking

the condemned action because of the impending danger that they pose to their lives.

#### **Factors influencing adoption of health safety measures**

Discussing the factors that influence adoption of health safety measures on cancer among any Nigerian audience cannot be properly managed if the attitudes to health need among them is not captured. Among the major factors that influence the adoption of any campaign message is the individual perception of the messages disseminated. This is to say that if the individuals who formed the target of the message have positive perception of the message, they are likely to accept the message and possibly adopt the measures. This is also related to the health belief model which forms the bases upon which this study will be anchored. According to the proponents of the model, people are most likely to expose themselves to messages that serve their interest. To stimulate interest, a message is expected to appeal to the previous knowledge of the target, their attitude and socio-religious views of the aspect of life being discussed or campaigned about.

In this regard, Ndikom and Ofi (2012) identified three factors that influence the peoples’ acceptance and adoption of communicated health safety measures. According to them, one major factor that influences the acceptance and adoption of health safety measures of any campaign is the individual perception of the messages. In the case of HIV Aids for example, people abstain from certain risk behaviours that could lead them to contracting AIDS following the fact that they are certain that indulging in such activities could lead to HIV and possibly AIDS. Their perceived fear of AIDS is what encouraged them to adopt the zip up health campaign launched against AIDS in the country at the outbreak of the disease. The same thing happens to all other messages and diseases. If the people see the message as not real and the disease less effective on them, they will ignore the messages and continue with their original attitude to life. This is where the HBMs perceived susceptibility to a given disease among the people came into play. The issue here is that the message must be designed to convince the people that actually something is wrong to make them get the fear and strive to subscribe to the message. This is because it is given that they are bound to strive to adopt safety measures to ensure that they are free if they see the benefit of adopting the communicated attitude. Another factor here is the demographic variables of the respondents. Importantly, the age, the location, educational level, ethnicity and financial status of the people play significant roles in their adoption of health safety measures by people. It takes an educated person to understand that there are certain health risks that could lead to unfavourable health conditions. It takes someone who is financially sound to visit the hospital for medical check-ups for cancer. Again, those in remote areas with little or no signs of health facilities for their treatment are all left alone.

Another important factor is what Ndikom and Ofi (2012) called the likelihood of an action. This is because there are factors that can best pass as perceived barriers to the adoption of health safety measures. Something like mammography screening test cannot be easily accessible to many who may have needed them for a better health. To such set of people, there is nothing they can do because they have no access to it.

#### **Empirical review**

Kassahun, Tsega-Ab and Admas (2019), examined the level and predictors of cervical cancer screening uptake among HIV positive

women in Addis Ababa using a cross-sectional study with a structured questionnaire. The study sampled a total of 411 HIV infected women in St. Paul's and Zewditu Hospitals and the result revealed that 25.5% of the respondents had undergone cervical screening. Respondents who had not heard about cervical cancer and the screening were 75% and 78% less likely to be screened. The uptake of cervical cancer screening was very low. The implication of this finding is that awareness and screening is low among the respondents in the study. It was recommended that more and specific awareness programmes should be encouraged by the government to increase the level of cervical cancer awareness and screening among the people. This study is similar to this current one because they both looked at cervical cancer but differ in the target, setting and variables sought. While the previous study looked at awareness and screening, the current one is looking at exposure and adoption of communicated safety measures among in-school adolescent girls in Anambra state. Again, while the study was carried out in Addis Ababa, this current one is being carried out in Anambra Nigeria. This means that since this kind of study have been conducted in Addis Ababa, its counterpart in Nigeria becomes imperative to provide an understanding of the situation in Nigeria.

Considering the prevalence of cervical cancer among Cameroon women, Donatus, Nina, Sama, Nkfusai, Bede, Shirinde, and Cumber (2019) evaluated the knowledge of women on cervical cancer in order to determine the factors that affect their uptake of cervical cancer screening services. The researchers adopted a cross-sectional study involving 253 women who voluntarily accepted to participate in the study. The respondent aged between the ages 25 to 65 years. The findings show that although majority of the participants (74.70%) had heard of cervical cancer and 43.48% had undergone cervical cancer screening, 24.51% and 29.25% of the participants respectively could not identify any risk factor and symptom of cervical cancer. The findings show that the level of awareness on the risk factors and symptoms of cervical cancer is low among the respondents. The implication of this is that education of the masses is needed for greater awareness. This study opens a gap for this current study which is set to examine the influence of cancer curriculum targeted at solving this problem identified here. This study is closely related to the current one in the sense that the study examined uptake of screening services among the people. On the other hand, the study shares similar methodology but differ in location and target. While the previous one targeted woman in Cameroon, the current study targets in-school adolescent girls in Anambra state. Again, the study recommendation for proper education of the masses on the cervical cancer risk factors, this study is here to investigate what the student have done with the knowledge gathered on cervical and breast cancer risk factors.

Considering the growing drastic level of breast cancer incidences in Nigeria, Ifediora and Azuka, (2018) engaged in KAP study to understand the rate of breast screening intake among women since previous studies have proved that early detection of cancer is the best way to get it handled. The study used the cross-sectional survey approach in studying 432 female senior secondary school students in Otuocha Educational Zone of Anambra State. The study found that although the exposure was high among them, there were low knowledge of the time to start BSE among the respondents. The study further found that although 73.6% of the respondents had positive attitude to adopting the health safety measures, only

6.1% practice them monthly while 55.3% had never done it at all. It was concluded that the positive attitude identified among the respondents is a sign that with more efforts, the practice will also improve. The study recommended that Health campaigns on BSE and breast cancers should provide specific details on techniques, risk factors and symptoms, while emphasizing on the right methods, timing and frequency. This study is related to the current one because it is on breast cancer knowledge and attitude. On the other hand, the current one is specific on exposure to cancer health information and adoption of health safety measures arising therefrom. Again, while this previous study was based on Otuocha zone alone, the current one is looking at the entire zones in Anambra.

In a more related study, Dodo, Peter and Colin (2015) used the literature research approach to identify and summarize the barriers to breast and cervical cancer screening uptake in Nigeria. The review examined peer reviewed research works from PubMed, Psych Info, Google Scholar and EMBASE which were extensively conducted on literature on factors influencing breast and cervical cancer screening and uptake in Nigeria. Findings show that women's knowledge, perception, and attitude including Embarrassment, low perception of cancer risk, and physician gender preference are some of the most common factors that discouraged women from cancer screening. Also, lack of spouse permission and support; belief that cancer is a death wish, and societal discrimination are the common sociocultural barriers to screening. The researchers recommended that policy makers should make deliberate effort to develop cancer management strategies that are tailored to managing the sociocultural and religious needs in a target population. One of the best ways to do this is through massive education of the people which can best be achieved through cancer curriculum and media campaigns. The study under review is closely related to this current one considering the fact that it looks at breast and cervical cancer together but differ in the area of target. While the previous study is interested in uptake, the current one is interested in exposure and adoption of safety health measures arising from "Arm-Our-Youth" cancer information campaign. The safety health measures adoption is capable of preventing screening which exposes the respondents to all the socio economic, religious and cultural aspect of the barriers as found in the above study.

In their study, Collins, Bowie and Shannon (2019) used descriptive analysis of the health needs, healthcare practices and barriers to accessing healthcare faced by women in Lower Napo River Region, Peru, and to understand health literacy regarding cervical cancer and the need for more effective cervical cancer screening services. The community-based needs assessment adopted Demographic and Health survey methodology with additional questions determining female health literacy on cervical cancer and assessing the availability and need for cervical cancer screening services of 121 women. Finding shows that though it was only 5.9% of women do not have formal health insurance coverage, 75% of the women reported that money was the leading barrier for accessing healthcare. It was also discovered in the study that health literacy regarding cervical and breast cancer was poor among the respondents. These findings are propellers to this current one which set to examine the influence of educationally based campaign on adoption of health safety measures. The study recommended that there is a significant need for education related to cervical cancer screening in this region which will be tailored to

the reality of women's lives in remote communities in Loreto. This study paid attention to the need for screening among the people which was found to be lacking as a result of the factors listed such as money, fear and lack of services facilities in the area. It is related to this current study because it provided a template for the understanding of the state of cervical cancer screening in the area under study. However, it is important to investigate exposure to cancer curriculum and audience adoption of safety measures among undergraduates. These audience in this study have acquired the cancer screening knowledge, but what they have done with it is yet to be identified.

Drawing from the high prevalence of cervical cancer related deaths, Faradisa, Ardiana, Priyantini, Fauziah, and Susanti, (2020) conducted a literature search aimed at exploring the factors influencing cervical screening uptake among women in low and middle-income countries. The study used electronic databases with the keywords "cervical cancer, screening, low-income countries and middle of income countries". The study examined a total of 300 articles published in Scopus, Science Direct, EBSCO and PubMed. The study found that knowledge about the disease and its prevention, knowing someone with cervical cancer and someone who has ever been screened, attitude and perception, husband approval, advice from the health care providers, and the distance to health care service were all important factors related to cervical cancer screening uptake in low and middle-income countries. Significantly, the study found that uptake of cervical cancer screening services was poor in low and middle-income countries. It was recommended that there is a need to strengthen the knowledge and awareness of women about cervical cancer screening services. This study under review differs from the current one in terms of methodology. While the previous study is conducted using secondary data, this current study adopted survey and FGD methods to reach out to the secondary school girls and know what they do with the knowledge gathered as students in the course of their exposure to cervical and breast cancers risk factors and safety measures as contained in the "Arm-Our-Youths" campaign.

## Method of study

This study adopted the mixed method approach. The survey research and FGD were applied in the study. The application of these two research methods was based on the nature of the study. The advantage of this approach was captured in Dawadi, Shrestha and Giri, (2021) who stated that mixed method encourages the collection and analysis of data from multiple sources in a single study. The mixed method helped the researchers to get the needed details that can help in policy making on the state of the campaign. The population of the study was 11 girls' secondary schools in Anambra state selected from the 27 girls' secondary schools in the six educational zones of the state using multi-stage sampling technique. The exert figure of the schools selected is 12,665 students according to PPSS Awka. The total of the girls from SS1-SS3 in all the 27 secondary schools are 12,665. Of this population, the researchers are interested in the SS3 students. The choice of this population was justified by the fact that they have been in the school and have been taught the curriculum for two years and are in the third year. This means that they are conversant with the message and can discuss issue concerning it. The criterion for inclusion to this study was the use of the curriculum necessitated by the "Arm-Our-Youths" campaign. The Rakesh (2013) sample size determination formular was used in the selection of the 367 respondents studied in the survey while the purposive sampling

technique and acceptance of the discussants was adopted in the selection of the students studied in the FGD. The FGD was conducted in three groups with 7 discussants each. The discussion duration lasted for 45 minutes each with the researcher as the moderator.

## Data presentation, Analysis and Discussion of findings

**Table 1: Respondents' extent of exposure to "Arm-Our-Youths" Cancer Prevention information campaign**

Respondents' extent of exposure to "Arm-Our-Youths"	Frequency	Percent
To a Very large extent	81	22.0
To a large extent	188	51.2
To a moderate extent	98	26.7
To a meager extent	0	0
To a very meager extent	0	0
<b>Total</b>	<b>367</b>	<b>100</b>

**Source: Researcher's field survey, 2023**

The information in this table has demonstrated that the OCI foundation campaign on "Arm-Our-Youths" actually got to the target audience. It shows that the teachers in the secondary schools are doing the job of passing this important information to the girls in order to safe their future from the deadly diseases known as cancer. The implication of the data is that, awareness to cancer risk behaviours and prevention can be concluded to be created considering the contents of the syllabus taught. At least, every student shares a reasonable degree of exposure to the campaign while they are still in school. The high level of exposure as observed in the above data may not be divorced from the fact that they have been in contact with the campaign messages since their SS1.

**Table 2: Whether exposure to cancer risk information among the respondents translate to practice of preventive safety measures**

Respondents practice "Arm-Our-Youths" campaign messages	Frequency	Percent
I practice of all the 8 cancer preventive behaviours	0	0
I practice only 1 out of 8 cancer preventive behaviours	0	0
I practice only 2 out of 8 cancer preventive behaviours	104	28.3
I practice 3 out of 8 cancer preventive behaviours	202	55.0
I practice 4 out of 8 cancer preventive behaviours	51	13.8
I practice 5 out of 8 cancer preventive behaviours	6	1.6
I practice 6 out of 8 cancer preventive behaviours	4	1.0

I practice 7 out of the 8 cancer preventive behaviours	0	0
I practice none of 8 cancer preventive behaviours	0	0
Total	367	100

**Source: Researcher’s field survey, 2023**

The above table demonstrated that the respondents are selective in their choice of what to do and what not to do. Of the 8 identified cancer preventive behaviours, majority of the respondents admitted to practicing about 2-3 with none of them adopting and practicing all the cancer preventive measures. In all, this implies that while some of the cancer risk behaviours are accepted and believed to be real, others are seen as mere teachings to widen knowledge among the respondents.

**Table 3: Ascertain the factors influencing adoption of cancer preventive behaviours in “Arm-Our-Youths” cancer prevention information**

Factors militating against adoption of campaign messages	Frequency	Percent
Respect for Culture and traditions	0	0
Shyness and Reluctance to undergo test	13	3.5
Inaccessibility of facilities and medical personnel	101	27.5
Lack of self-knowledge among respondents & family history	82	22.3
The shame of being examined by a male doctor	62	16.8
Conservative nature of the society	0	0
Lack of the finances to foot the bill	109	26.6
Total	367	100

**Source: Researcher’s field survey, 2023**

This table revealed three aspects of this issue under investigation. Noticeable in this table is that some factors challenge the adoption of the “Arm-Our-Youths” cancer prevention campaign among the respondents. Among the key factors as represented in the data above are inaccessibility of medical facilities to handle cancer test, insufficient fund to foot the bill of the test and lack of self-knowledge of family health history among the respondents. The conservative nature of present-day society and respect for culture and traditions have been found to pose no challenge to the reasons for not adopting health safety measures among the respondents. The implication of this table is that to improve on the respondents’ attitude towards adopting the communicated health safety measures, there must be an improvement in the health facilities and personnel to make them available and accessible, improve the country’s economy to make respondents financially stable to foot their health bill and improve communication and information to reduce information knowledge gap among respondents.

**Focus Group Data**

On the first research question which was on the extent of exposure to the message of “Arm-Our-Youths” cancer prevention campaign, reactions show that the respondents have higher degree of exposure

to the message. Quality views show that the students are taught of cancer and its risk behaviours at least once every week except on some exceptional cases like public holidays or absence of their teacher(s). All the discussants in the three groups admitted that they are exposed to these messages of cancer prevention by accepting that their teachers came to classes for the lessons regularly. *In our school, we do not miss civic class. Our principal is particular about the dangers of cancer and sometimes strive to see our notes when our teacher is done with her classes before the closure of the term. She has been doing that for two years now,* Said PG3. This view was corroborated by another participant in the same group who stated that she did not know why they are very interested in this very class. According to her, *like English and mathematics, we have civic classes twice a week. We can miss every other class but that of civic education must be there and on time. We normally have her classes on Wednesday after long break and Friday before dismissal. Sometime, we miss afternoon assembly while in her classmates,* she added. To another discussant in FG1, PG5, *civic education may have been made compulsory because of this very particular target to get us to know ourselves and likely things we may not do for our own good. I think is good Shaa.* The collective acceptance that their teachers and schools take this message seriously is a pointer that they have high extent of exposure to this message of cancer prevention and risk behaviours. A look at their notes also corroborated the view expressed above.

On whether exposure to cancer health information from the school translate into action of attitude change, discussants were like divided. The reason for this division is not far from the views expressed in believability of the message. While some share the views that they act the ones they can do themselves, others are of the views that they can only go for medical test if they have the cash or it is free, others believe that they can go to hospital if they suspect that they are being infested since they have known the symptoms. Although there are views that suggest that they have partial adoption of the communicated messages, there are quality opinions show that many of the respondents have received the messages but hardly subscribe to the actions canvassed in the message. The implications of this, is that the people need more convincing messages to increase their rate of believability in order that the right action can be taken. Without serious convincing measures, it will be hard for the target to accept that they are at risk of contracting cancer by exhibiting some cancer risk attitudes. *“Well, as for me, I have never tried any of these safety health measures of cancer. I have just learnt them and it is my belief that it won't happen to me, I trust God on that”,* discussant PG7 from FG2 said. This reliance and trust in God among Nigerians are the major cause that we pray more than we act to get things done. This view was corroborated by discussant PG1 in FG3 who argued that she remembered the things taught while in class but feels very reluctant in taking the communicated action. This could probably be because she is certain that it is not her portion to become a cancer patient. However, views are there showing that some of the respondents nurse the fear that they may be patients. In her submission, PG6 in FG3 concluded that she has no time to waste rather than to adopt every measure that can set her free from this disease. In her words, *‘while am not trying to challenge God, there is every need for us to work before praying. Considering people who have fallen short of the safety measures and are yet not patients may be dangerous. The reason is that they do what they do out of ignorance but since we have been exposed to this teaching, I don't think that I can maneuver the safety measures.* **Onvé chi na-**

*azo na azokwanu onweya'*. This discussant is convinced that before the adoption of the teachings they are exposed, it has been scientifically examined and found tangible to be taught in class. PG4 from FG2 reiterated the need to observe the precautionary measures considering the danger of cancer in human body. *Nobody is praying for cancer but it is real and can kill* she added. When asked why she said so, the lady stated that whoever has not seen cancer patient before cannot really understand what the disease means. She sounds knowledgeable in this discussion considering the view she presented above. However, this finding has just shown that the observed division on taking safety measures is not advancing the course at which the “*Arm-Our-Youths*” content was initiated.

The final research question that was answered using this FGD was the identification of the factors that are militating against the adoption of the communicated health safety measures of the campaign. In this question, the discussants are asked to state reasons why they adopt and or fail to adopt the health safety measures. Again, the opinions shared on this question justify that there are division in the acceptance and believability of the cancer prevention messages taught to the students. Those who are skeptical about some of the messages disseminated to them about cancer prevention cited some reasons while those who accepted other ones also advances the reasons why they so hold. Significantly, lack of medical personnel and financial requirement of cancer treatment and routine examination dominated the reasons advanced for none-compliance to the health safety tip as supplied among the discussants. This was captured in the views of discussant PG7 from FG3 who stated that she is acceptance of every health measure but there are what she cannot do for herself which is accessing the routine check for the disease. Discussant PG2 from the same group agreed with this view blaming lack of cancer testing facilities for their noncompliance. In her words, *running routine check on oneself through these self-examination methods are very good. I am ok with that but I want to state that that is not enough as an individual running a test on herself may not be perfect in detecting the true cancer state through such self-examination. So, we cannot perfectly fight this disease without medical facilities and personnel.* Another discussant in FG3 added that the financial implication of cancer examination is also an issue in the fight against cancer. According to the lady, *there is fear in going to the hospital or even running a check on oneself. The fear of what cancer means to any patients makes the desire to run a check neglected. Think of the fear of checking for HIV. Any patient diagnosed of cancer is almost in the grave and nobody wants to die that earlier considering that the money and the facilities are not there to handle the situation.*

## Discussion of findings

On the first research question which investigated the extent to which the respondents are exposed to cancer prevention campaign messages initiated by “*Arm-Our-Youths*”, both quantitative and qualitative data revealed that the respondents are to a large extent exposed to the messages. According to the table, no respondent selected “*To a meager extent*” or “*To a very meager extent*” response categories from among the 367 respondents under study. Of the 367 respondents 51.2 percent admitted that they are to a large extent exposed to cancer risk behavior and preventions campaign messages by “*Arm-Our-Youths*”. 26.7 percent said that they are “*moderately exposed*” while 22.0 percent admitted being exposed “*to a very large extent*”. The above data was supported by

the views expressed by the discussants from the focus groups discussion where popular views revealed that civic education as a subject is taught every weak at least once with special focus in breast and cervical cancer information. Knowingly or unknowingly, the essence of this effort is to increase knowledge among the respondents and ensure that they strive to stay safe from the disease. This was captured in the views expressed by PG3 who confirmed that even their principal took it upon herself to ensure that the teacher in charge of the subject delivers the content as designed before the end of each term (See her comment above). The summary of the above finding is that with the introduction of the “*Arm-Our-Youth*” campaign and its curriculum targeted to educating the potential cancer victims on time had achieved a purpose which is to get them to know of the dangers in some of the behaviours they exhibit. From here, the next thing is what the respondents do with the messages that they have been exposed to. Importantly, it is up to the students to put what they were taught in practice or not since OCI foundation has succeeded in getting them informed. The claim above finds expression in the finding made in Adika, Joffa, Makoro, Yagba-Obariobora, and Apiyanteide (2012) where it was found that exposure actually increases knowledge but knowledge does not translate into practices all the times. One part of the problem of cancer which is lack of information on casual factors and behaviours can, at this point, be adjudged to have been addressed as the respondents have admitted being well exposed to the messages (see table 1 for details. See also, discussants comments in FGD data).

The second research question investigated the extent to which exposure to cancer risk information translate to practicing communicated behaviours among respondents. Data from the quantitative aspect of this study revealed that although exposure encouraged practice, the number of cancer preventive information messages practiced is limited. As contained in the data, 202 of the respondents representing 55.0% admitted practicing only 3 out of the 8 preventive measures canvassed in this information campaign followed by 104 other accounting for 28.3 percent who admitted that they practice only 2 of the 8 information messages. Unfortunately, none of the respondents admitted practicing all, 7, and none of the measures canvassed. On average of 4 information messages, only 51 respondents accounting for 13.8 percent of the sample are practicing about 4 of the preventive measures while only 6 and 4 respondents accounting for 1.6 and 1.0 percent respectively are practicing 5 and 6 of the safety health measures of cancer as canvassed in the “*Arm-Our-Youths*” cancer information campaign. The poor practice of communicated safety measures shows that awareness and exposure to cancer risk behaviours does not really translate to adoption of the health safety measures. The finding is in line with that of Mazari, Holt, and Azmy (2017) where it was found that although “*Be Clear on Cancer*” campaign resulted in a significant increase in breast cancer referrals, it did not translate into an increase in biopsy rates or cancer detection rates. The above finding is almost the same thing obtained from the FGD where different reasons were expressed as fighting their desire to take up the communicated safety measures. In summary, although there are views that suggested that respondents have partial adoption of the communicated messages, there are quality opinions that show that many of the respondents have received the messages but hardly subscribe to the actions canvassed in it. This was captured in one of the responses given by discussant PG7 from FG2 who relied on God for her safety (See comment in the FGD session). This finding corroborates that of Ikegbunam and Obiakor



(2023) who found that sometimes, people leave the safety measures they need to take but rely on God to do what they can do for themselves by making efforts. This attitude which is rampant among girls who use to say it is not my portion was in the study, concluded to have led many In-School girls to their early grave. Moreover, the finding that there is low adoption of safety measures in this study disagrees with that of Asogwa and Oluwakemi (2018) who found that though the level of understanding of cancer campaign was low among the respondents, majority of the respondents adopt breast self-examination practice.

The third research question which sought to ascertain the factors militating against the adoption of the communicated messages of “*Arm-Our-Youths*” information campaign among the respondents revealed that the three major factors among others leading to none adoption of health safety measures are inaccessibility of medical facilities, lack of the finances to foot the bill and lack of knowledge of family history among respondents. According to the data from the table, 109 respondents accounting for 29.7 percent said that their major challenge leading to none adoption of safety health measures is “*lack of the finances to foot the bill*”. This was followed by another 101 respondents accounting for 27.5 percent of the sample who said that their challenge leading to none practice of communicated health safety measures is “*inaccessibility of medical facilities and personnel*” in the country. This was closely followed by the “*lack of the finances*” response category. The table further revealed that 82 other respondents representing 22.3 percent of the sample said that “*lack of knowledge of family history*” triggers none adoption and practice of communicated safety messages among respondents (See table 3 for more). Lack of financial wellbeing was also found to be a factor discouraging cancer medical test in Olasehinde, *et al*, (2019) wherein lack of awareness, lack of perceived need and cost of running the test were cited as militating against the adoption of safety measures. Both lack of finances and inaccessibility of medical personnel and facilities are interrelated and are common features of a developing state like Nigeria. The finding agrees with that of Désirée, *et al*, (2018) where it was found that as a low and middle-income economy, Malaysia and other Asian countries suffer from lack of sufficient resources to control cancer. This data gained the support of quality views as expressed in the FGD where the accessibility and funding formed the matter of discussion among discussants. One of the discussants reiterated the need for both accessibility of medical experts and facilities and funding as the major issue guiding against the adoption of the safety measures. In her words, *...So, we cannot perfectly fight this disease without medical facilities and personnel*. This was corroborated by discussant PG6 from the same group who said “*everyone wants to be free from all kinds of diseases. It is not only cancer. Unfortunately, the challenge that confronts all as far as majority of the citizens are concerned are funding and accessibility of the needed care. Corruption has murdered the health sector leading to none implementation of policies and desires of our medical experts to ‘Jakpa’ to the western world*”. The reaction above captures the finding in Asogwa and Oluwakemi (2018) who found that respondents do not adopt the clinical medical examination safety measures which is most likely to identify impending dangers of breast cancers among potential victims. The view expressed by the discussant was supported by another discussant in the same group who stated thus: “*Any patient diagnosed of cancer is almost in the grave and nobody wants to die that earlier considering that the money and the facilities are not there to handle the situation*”.

Further, the grave implication of knowledge gap on exhibition of cancer risk behaviours among the respondents was established in Uzochukwu and Ikegbunam (2023) where they found that people engage in certain cancer risk behaviours such as alcoholism and smoking because of total lack of the knowledge that being an alcoholic-smoker is a double risk behavior.

## Summary of findings and conclusion

This study investigated the influence of “*Arm-Our-Youth*” cancer information campaign on adoption of safety health measures among In-School adolescent girls in Anambra state. The general objective of the study is to find out if the in-school adolescent girls' exposure to risk behaviours of cervical and breast cancer encourages adoption of safety health measures as communicated in the campaign messages of “*Arm-Our-Youths*”. On the research questions posed for the study, the data obtained from the quantitative and qualitative enquiry revealed that although the respondents are well exposed to cancer risk behaviours and safety measures through the “*Arm-Our-Youths*” campaign messages, the rate of recall and believability of the messages are not encouraging. Further, the data also revealed that the level of exposure to the risk behaviours and safety measure does not correspond to that of adoption of the health safety measures which is the basic target of the campaign. The study revealed that inaccessibility of health facilities and medical experts are the major factor militating against the practice of cancer safety measures among the people.

## Recommendations

Relying on the research findings, this study recommended as follows:

1. That both medical personnel, facilities for testing for cancer and vaccine must be made available by the government with highly subsidized cost to boost cancer diagnoses in the state.
2. The individuals themselves should strive to pay attention to the cancer risk behaviors, observe them and adopt all of them on time rather than waiting till they see the signs and symptoms as that may amount to the waste of the learning they have acquired.
3. That future studies should investigate why high exposure recorded in this study failed to translate to high adoption of cancer health safety measures among the students.

## Direction for future research

This study has established that there is difference between exposure to health information campaigns and adoption of the campaigns among the respondents. In this regards, it is important the future studies should investigate why the high exposure recorded in this study failed to translate to high adoption of cancer health safety measures among the students.

## References

1. Adika, V., Joffa, P., Makoro B., Yagba-Obariobora, J. & Apiyanteide, F. (2012). Nurse's practices and knowledge of BSE in selected hospitals in Bayelsa State Nigeria. *Int J Trop Med*, 7, 17-23.
2. Allen, J. A, Duke, J. C., Davis, K. C., Kim, A. E., Nonnemaker, J. M. & Farrelly, M. C. (2015). Using mass media campaigns to reduce youth tobacco use: A review. *American Journal of Health Promotion* 30, e71–e82.

3. Asogwa, C. E. and Oluwakemi, S. (2018). Influence of televised breast cancers preventive campaigns on women in Kogi state, Nigeria. *The Nigerian Journal of Communication Education (TNJC)*, 15(2), 335-341.
4. Bellanger, M., Zeinomar, N. & Tehranifar P (2018). Are global breast cancer incidence and mortality patterns related to country-specific economic development and prevention strategies? *J Glob Oncol* 4:1-16.
5. Boskey, E. (2023). How the Health Belief Model Influences Your Behaviors. <https://www.verywellmind.com/health-belief-model-3132721#citation-9>
6. Centers for Disease Control and Prevention (CDC), (2019). Cancer prevention starts in childhood. You can lower your child's risk of getting cancer later in life. <https://www.cdc.gov/cancer/index.htm>
7. Collins, J. H., Bowie, D. & Shannon, G. A. (2019). *Descriptive analysis of health practices, barriers to healthcare and the unmet need for cervical cancer screening in the Lower Napo River region of the Peruvian amazon*. Womens' Health London. Doi: 10.1177/1745506519890969. PMID: 31840562; PMCID: PMC6918491
8. Dawadi, S., Shrestha, S. & Giri, R. A. (2021). Mixed-Methods Research: A Discussion on its Types, Challenges, and Criticisms. *Journal of Practical Studies in Education*, 2(2), 25-36 DOI: <https://doi.org/10.46809/jpse.v2i2.20>.
9. Désirée, S., Michael, D., Maznah, D., Siew, Y. L., Ibrahim, N. S. B. T., Saunthari, S., Conan, D. & Tin, T. S. (2018). The 'be cancer alert campaign': Protocol to evaluate a mass media campaign to raise awareness about breast and colorectal cancer in Malaysia. *BMC Cancer*, 18(1), 881. <https://doi.org/10.1186/s12885-018-4769-8>.
10. Dodo, A. M., Sykes, P. & Powell, C. (2016). Exploring the barriers to breast and cervical cancer screening in Nigeria: A narrative review. *African Journal of Reproductive Health*, 20(4), 89–98. <https://doi.org/10.29063/ajrh2016/v20i4.9>.
11. Donatus, L., Nina, F. K., Sama, D. J., Nkfusai, C. N., Bede, F., Shirinde, J. & Cumber, S. N. (2019). Assessing the uptake of cervical cancer screening among women aged 25-65 years in Kumbo west health district, Cameroon. *Pan African Med J.*, Jun 12(33), 106. Doi: 10.11604/pamj.2019.33.106.16975. PMID: 31489084; PMCID: PMC6713511.
12. Faradisa, E., Ardiana, H., Priyantini, D., Fauziah, A. & Susanti, I. (2020). A systematic review of the factors associated with cervical cancer screening uptake among women in low and middle-income countries. *Journal Ners, Special Issues*, 113-119. Doi: <http://dx.doi.org/10.20473/jn.v15i2.18991>.
13. Fatiregun, O. A., Bakare, O., Ayeni, S., Oyerinde, A., Sowunmi, A. C., Popoola, A., Salako, O., Alabi, A. & Joseph, A. (2020). 10-Year Mortality Pattern Among Cancer Patients in Lagos State University Teaching Hospital, Ikeja, Lagos. *Frontiers in oncology*, 10, 573036. <https://doi.org/10.3389/fonc.2020.573036>.
14. Fatiregun, O. A., Oluokun, T., Lasebikan, N. N., Nwachukwu, E., Ibraheem, A. A. & Olopade, O. (2021). Breast cancer research to support evidence-based medicine in Nigeria: A review of the literature. *JCO Global Oncology* :7, 384-390.
15. Ghorbani-Dehbalaei, M., Loripoor, M. & Nasirzadeh, M., (2021). The role of health beliefs and health literacy in women's health promoting behaviours based on the health belief models: A descriptive study. *BMC women's health* 21(1): 421.
16. Gordon, L. G., Walker, S. M. & Mervin, M. C. (2017). Financial toxicity: a potential side effect of prostate cancer treatment among Australian men (serial online). *European Journal of Cancer Care (Engl)*. 26, e12392.
17. Hayam, E., Howida, A. & Zakeya, B. (2014). Effect of health education on raising female students' awareness' regarding breast cancer at Saudi Arabia. *Journal of Natural Sciences Research* 4(9). <https://iiste.org/Journals/index.php/JNSR/article/view/13190/13557>
18. Health Communication Capacity Collaborative (HC3) (2016). *Health communication capacity collaborative (HC3), Nigeria*. <https://thecompassforsbc.org/project-examples/health-communication-capacity-collaborative-hc3-nigeria>
19. Ifediora, C. O. & Azuike, E. C. (2018). Knowledge and attitudes about cervical cancer and its prevention among female secondary school students in Nigeria. *Tropical medicine & international health: TM & IH*, 23(7), 714–723. <https://doi.org/10.1111/tmi.13070>
20. Ikegbunam, P. C. & Obiakor, U. C. (2023). *Exposure to Social Media Videos of YahooPlus Victims and Its Influence on Attitude Changes among Young Ladies in Nigeria*, *ANSU Journal of Arts and Social Sciences (ANSUJASS)*, 10 (1): 101-117
21. Ikegbunam, P. C. & Agudoso, F. I. (2021). Cultivating Biafran agenda in Nigeria: Evaluation of the influence of radio Biafra's rhetoric of ethnic marginalization on rural dwellers in the South-east. *Journal of Media and Communication Studies (JMCS)*, 13(1), 23-37. Doi: 10.5897/JMCS2020.0698. <http://www.academicjournals.org/JMCS>.
22. Kassahun, E., Tsega-Ab, A. & Admas, A. A. (2019). *Role of awareness on cervical cancer screening uptake among HIV positive women in Addis Ababa, Ethiopia. A cross-sectional study*. Doi: <https://doi.org/10.21203/rs.2.19261/v1>.
23. Kruk, M. E., Gage, A. D., Arsenaault, C., Jordan, K., Leslie, H. H., Roder-DeWan, S., Adeyi, O., Barker, P., Daelmans, B., Doubova, S. V., English, M., García-Elorrio, E., Guanais, F., Gureje, O., Hirschhorn, L. R., Jiang, L., Kelley, E., Lemango, E. T., Liljestrand, J., Malata, A., Marchant, T., Matsoso, M. P., Meara, J. G., Mohanan, M., Ndiaye, Y., Norheim, O. F., Reddy, K. S., Rowe, A. K., Salomon, J. A., Thapa, G., Twum-Danso, N. A. Y., Pate, M. (2018). High-quality health systems in the Sustainable Development Goals era: time for a revolution. *Lancet Glob Health*. 6(11):e1196-e1252. Doi: 10.1016/S2214-109X(18)30386-3.
24. Mazari, F. A. K., Holt, S. & Azmy, I. A. (2017). The impact of "be clear on cancer" campaign on breast care services provided by a specialist oncoplastic unit - A

- retrospective case control study. *Int J Surg.*, 47, 54 – 60. 10.1016/j.ijisu.2017.09.056.\
25. Ndikom, C. M. & Ofi, B. A. (2012). Awareness, perception and factors affecting utilization of cervical cancer screening services among women in Ibadan, Nigeria: A qualitative study. *Reproductive Health*, 9, 11. <https://doi.org/10.1186/1742-4755-9-11>
  26. Njoki, M. M. (2013). Effect of customer perception on performance of private hospitals in Nairobi: A case study of Karen hospital. *International Journal of Business and Commerce in Asian Society of Business and Commerce Research*, 4(5), 60-71.
  27. Nwanmuo, A. N & Nwachukwu, A. O. (2021). *Social media use in information dissemination in covid-19 outbreak: A study of NCDC Telegram and Twitter Handles.*
  28. Okeke, N. E. (2018). Influence of mass media campaigns on breast cancer knowledge among women in Enugu State. *Global Journal of Arts, Humanities and Social Sciences*, 6(4), 16-43, [www.eajournals.org](http://www.eajournals.org) 16 ISSN: 2052-6350(Print) ISSN: 2052-6369 (Online).
  29. Olasehinde, O., Alatise, O. I., Arowolo, O. A., Mango, V. L., Olajide, O. S., Omisore, A. D., Boutin-Foster, C. & Kingham, T. P. (2019). Barriers to mammography screening in Nigeria: A survey of two communities with different access to screening facilities. *European Journal of Cancer Care*, 28(2), e12986. <https://doi.org/10.1111/ecc.12986>.
  30. Post Primary School Service Commission (2023). *One on one consultation report as provided by the commission at its office in Awka.*
  31. Rakesh, R. P. (2013). Sample size: From formulae to concepts II. *International Journal of Basic and Clinical Pharmacology*, 2(1), 94-95. Doi: 10.5455/2319-2003ijbcp20130119 ISSN 2319-2003, online ISSN 2279-0780.
  32. International Agency for Research on Cancer (IARC) (2020). *Cervix uteri*. Retrieved from The Global Cancer Observatory: <https://gco.iarc.fr/today/data/factsheets/cancers/23-Cervix-uteri-fact-sheet.pdf>.
  33. Uzochukwu, C. E., Ikegbunam, P. C. (2023). Evaluation of Cancer Health Information Knowledge Gap Among Female Alcoholic-Smokers in Awka Metropolis. A conference paper presented at the 2023 NDLEA/COOU Mass Communication national conference on drug abuse and drug related crimes in contemporary Nigeria mass media as Panacea held on the 4-6<sup>th</sup> august 2023
  34. Uzochukwu, C. E., Ikegbunam, P. C. (2022). Analysis of newspaper coverage of world cancer day: A study of select newspapers in Nigeria. <https://doi.org/10.5897/JMCS2022.0781>. 14(4), pp. 79-91.
  35. Wakefield, M. A., Loken, B. & Hornik, R. .C (2010). Use of mass media campaigns to change health behaviour. *Lancet (London, England)*, 376(9748), 1261–1271. [https://doi.org/10.1016/S0140-6736\(10\)60809-4](https://doi.org/10.1016/S0140-6736(10)60809-4).
  36. Workman, P., Draetta, G. F., Schellens, J. H. M. & Bernards, R. (2017). How much longer will we put up with \$100,000 cancer drugs? *Cell*, 168, 579–583. PubMed: 28187281