

Assessment of the Impact of Screening Practices of Colorectal Cancer Among Adults Aged 50 Years and Above in Ugunwore, Igbo-Eze South Local Government Area, Enugu State

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Abstract

Colorectal cancer (CRC) remains a major public health concern worldwide despite its preventability through early detection and routine screening. This study assessed colorectal cancer screening practices among adults aged 50 years and above in Ugunwore community, Igbo-Eze South Local Government Area, Enugu State, Nigeria. Specifically, the study examined respondents' knowledge of colorectal cancer screening, the extent of screening uptake, and the influence of age on screening practices. A descriptive survey design was adopted. From an accessible population of 2,114 adults, a sample of 230 respondents was selected using the Leslie Fisher (Lwanga and Lemeshow) formula and a multistage sampling technique. Data were collected using a researcher-developed, face-validated questionnaire, the *Knowledge of Screening Practices of Colorectal Cancer Questionnaire (KSPCRC)*, which demonstrated high reliability (Cronbach's alpha = 0.92). Data were analyzed using frequencies, means, and standard deviations. Findings revealed that respondents had a high level of knowledge of colorectal cancer and its screening practices (grand mean = 3.11, SD = 0.62). However, participation in recommended screening procedures remained low (grand mean = 2.40, SD = 0.22). Knowledge increased slightly with age, with respondents aged 66–70 years recording the highest mean score, although all age groups demonstrated generally good awareness. The study concluded that adequate knowledge alone does not translate into regular screening behavior. Financial barriers, limited access to screening services, fear of diagnosis, and inadequate organized screening programmes likely contribute to poor uptake. The study recommends free or subsidized community-based screening programmes, intensified public health education, mobile screening services, and the engagement of community health champions to improve screening uptake, facilitate early detection, and reduce the burden of colorectal cancer in rural communities.

Keywords: Assessment, Screening Practices, Colorectal Cancer

Introduction

Colorectal cancer (CRC) is a major public health challenge and one of the leading causes of cancer-related morbidity and mortality worldwide. It is a malignant disease that develops in the colon or rectum, usually from precancerous adenomatous polyps that gradually progress into invasive cancer over several years if left untreated. According to the World Health Organization (WHO, 2021), colorectal cancer remains one of the most common cancers globally, with

substantial implications for healthcare systems because of its increasing incidence, treatment costs, and mortality. The International Agency for Research on Cancer (IARC, 2020) estimated approximately 1.9 million new cases and about 930,000 deaths from colorectal cancer worldwide in 2020, making it the third most commonly diagnosed cancer and the second leading cause of cancer-related deaths globally. Furthermore, global projections indicate that by 2040,

new cases will increase to approximately 3.2 million annually, while annual deaths are expected to reach 1.6 million, largely due to population ageing, urbanization, and the increasing adoption of unhealthy lifestyles.

The burden of colorectal cancer varies considerably across regions and populations. Developed countries such as the United States, Japan, and China continue to record high incidence rates, largely attributed to ageing populations, dietary patterns rich in processed foods and red meat, sedentary lifestyles, obesity, alcohol consumption, and tobacco use (National Cancer Institute, 2024). Although colorectal cancer was historically considered a disease of industrialized nations, its incidence is increasing rapidly in many low- and middle-income countries as they undergo nutritional and epidemiological transitions associated with westernization (Morgan et al., 2020). The adoption of unhealthy lifestyles has significantly contributed to the growing burden of colorectal cancer in developing countries.

Age remains the single most important risk factor for colorectal cancer. Approximately 90% of colorectal cancer cases occur among adults aged 50 years and above (International Agency for Research on Cancer, 2020). Other non-modifiable risk factors include genetic predisposition, family history of colorectal cancer, hereditary syndromes, and inflammatory bowel diseases. However, the majority of colorectal cancer cases are sporadic and associated with modifiable lifestyle factors such as diets low in fibre and high in processed meat, obesity, physical inactivity, excessive alcohol intake, cigarette smoking, and diabetes mellitus (Nana & Edward, 2019). Evidence suggests that nearly three-quarters of colorectal cancer cases could be prevented through modification of these risk factors, adoption of healthy lifestyles, and participation in appropriate screening programmes (Lee, 2018).

Screening plays a central role in colorectal cancer prevention and control because the disease develops slowly over many years, allowing premalignant lesions to be detected and removed before they progress to invasive cancer. Screening also facilitates early diagnosis when treatment outcomes are more favourable and survival rates are considerably higher. Common screening methods include faecal immunochemical testing (FIT), guaiac faecal occult blood testing (gFOBT), stool DNA testing, flexible sigmoidoscopy, colonoscopy, computed tomography colonography, and blood-based screening tests (Centers for Disease Control and Prevention, 2019). Numerous

studies have demonstrated that regular screening significantly reduces both the incidence and mortality of colorectal cancer through early detection and timely intervention (Doubeni, 2019).

Despite the proven effectiveness of colorectal cancer screening, screening uptake remains suboptimal worldwide, particularly in developing countries. Schreuders et al. (2015) reported that adherence to recommended colorectal cancer screening remains poor even in countries where organized screening programmes exist. In many African countries, including Nigeria, colorectal cancer screening is largely opportunistic rather than population-based, resulting in delayed diagnosis and poor treatment outcomes. Factors such as inadequate awareness, low educational attainment, poor access to healthcare services, financial constraints, cultural beliefs, fear of diagnosis, and limited availability of screening facilities have been identified as barriers to screening participation (Gimeno, 2012).

In Nigeria, colorectal cancer accounts for approximately 6% of all newly diagnosed cancers, with an age-standardized incidence rate of 7.4 per 100,000 population and a mortality rate of 5.5 per 100,000 population (Global Cancer Observatory, 2021). The disease affects both men and women, although slightly higher incidence rates have been reported among men. According to the Nigerian National System of Cancer Registries (2012–2016), colorectal cancer ranks among the leading cancers diagnosed in Enugu State, with incidence rates of 4.2 per 100,000 among males and 3.9 per 100,000 among females. Although these figures appear relatively low compared with those of developed countries, the increasing trend raises concerns because many cases are diagnosed at advanced stages when treatment options are limited and survival rates are poor.

Adults aged 50 years and above constitute the population most vulnerable to colorectal cancer and are the primary target group for routine screening recommendations. However, screening participation among this age group in Nigeria remains low, particularly in rural communities where awareness is poor and access to screening services is limited. Uhunwere community in Igbo-Eze South Local Government Area of Enugu State is predominantly rural, with many residents engaged in farming and petty trading. The community is characterized by relatively low socioeconomic status, limited health literacy, and restricted access to specialized healthcare services. These conditions may influence both awareness of

colorectal cancer and participation in recommended screening practices.

While several studies have examined knowledge and awareness of colorectal cancer in different parts of Nigeria, there is limited evidence regarding the impact of screening practices among adults aged 50 years and above in rural communities such as Uzunowere. Assessing the impact of colorectal cancer screening practices within this population is therefore essential for determining the extent to which screening contributes to early detection, increased awareness, and improved preventive behaviours. Findings from this study will provide evidence that can guide policymakers, healthcare professionals, and public health practitioners in designing targeted interventions aimed at improving screening uptake, promoting early diagnosis, and reducing the burden of colorectal cancer among older adults in Enugu State and similar rural communities.

Colorectal cancer has become an increasingly important public health concern due to its rising incidence and high mortality despite being one of the most preventable forms of cancer through early detection and appropriate screening. Globally, advances in screening programmes have contributed to significant reductions in colorectal cancer incidence and mortality in many developed countries. However, developing countries, including Nigeria, continue to experience increasing disease burden because screening services remain inadequate, awareness is low, and many patients present at advanced stages when treatment outcomes are poor.

Nigeria has witnessed a gradual increase in colorectal cancer cases, largely attributed to population ageing, urbanization, unhealthy dietary practices, sedentary lifestyles, obesity, alcohol consumption, and tobacco use. Reports indicate that colorectal cancer accounts for approximately 6% of all newly diagnosed cancers in Nigeria, with mortality remaining high because most cases are detected late. Adults aged 50 years and above are particularly vulnerable, accounting for the majority of colorectal cancer diagnoses worldwide. Although routine screening is recommended for this age group, participation remains very low due to poor awareness, financial limitations, inadequate healthcare infrastructure, cultural beliefs, fear of diagnosis, and limited availability of organized screening programmes.

Evidence has consistently shown that colorectal cancer screening facilitates early detection of precancerous lesions and early-stage cancers, thereby

reducing disease incidence, mortality, and treatment costs. Despite these benefits, the extent to which screening practices influence colorectal cancer prevention among older adults in rural Nigerian communities remains inadequately documented. Existing studies have focused mainly on knowledge, awareness, and risk factors, with limited attention given to evaluating the actual impact of screening practices among adults aged 50 years and above. Rogers and Goodson, (2014) revealed that the respondents have moderate knowledge and positive attitude towards colorectal cancer screening. Al-Naggar *et al.* (2015) conducted a study and reported that majority of the participants (93.6%) never had a Colorectal cancer screening test and the major barriers identified towards colorectal cancer screening identified is fear of pain and embarrassment. Demyati (2014) conducted a study concluded that board certified physicians had higher knowledge score and were practicing colorectal cancer screening more when compared to other physicians.

The study also found out that barriers were cited in higher rates among physicians not practicing colorectal cancer screening compared with practicing physicians and lack of patients' awareness was the most cited barrier. Ooi *et al.* (2019) reported that the mean knowledge score on CRC screening modalities was poor ($48.7\% \pm 17.7\%$). The knowledge score was positively associated with having postgraduate educational qualification and usage of screening guidelines. Overall, 69.9% of PCPs reported that they practiced screening. However, of these, only 25.9% of PCPs screened over 50% of all eligible patients. Alghamdi *et al.* (2022) assessed public awareness about colorectal cancer (CRC) screening and the barriers that prevent Saudi individuals from undergoing CRC screening, and reported that the overall knowledge of CRC was poor in Al-Baha residents, irrespective of age. Nearly (49.7%) knew that detecting colorectal cancer before symptoms appear is possible. About 64% of the participants cited colonoscopy as the screening method for CRC. More than half of the participants (58.1%) expressed their willingness to be screened for colorectal cancer, while only 2.8% reported that they had undergone screening before.

In Uzunowere community of Igbo-Eze South Local Government Area, Enugu State, many residents are of low socioeconomic status, possess limited health literacy, and have restricted access to specialized healthcare services. These factors may negatively influence participation in colorectal cancer screening and contribute to delayed diagnosis. Furthermore, there

is a paucity of empirical studies assessing the impact of colorectal cancer screening practices among older adults within this community. This knowledge gap limits the availability of local evidence needed for planning effective cancer prevention programmes and improving screening services.

It is against this background that this study seeks to assess the impact of colorectal cancer screening practices among adults aged 50 years and above in Uhunowere, Igbo-Eze South Local Government Area, Enugu State. Specifically, the study aims to generate evidence on screening practices and their contribution to early detection and prevention of colorectal cancer among older adults, thereby providing information that may assist policymakers, healthcare providers, and public health practitioners in developing interventions that improve screening uptake and reduce the burden of colorectal cancer in the study area. The main purpose of the study is to assess the impact of screening practices of colorectal cancer among adults aged 50 years and above in Uhunowere, Igbo-Eze South Local Government Area, Enugu State. Specifically, the study sought to determine:

1. the extent to which adults in Uhunowere community have the knowledge of screening practices of Colorectal Cancer.
2. the extent to which adults in Uhunowere community undergo screening practices of Colorectal Cancer.
3. the influence of demographic variables (age and gender) on screening practices of Colorectal Cancer in Uhunowere community.

The following research questions guided the study:

1. To what extent do adults in Uhunowere community have the knowledge of screening practices of Colorectal Cancer?
2. To what extent do adults in Uhunowere community undergo screening practices of Colorectal Cancer?
3. What is the influence of age on screening practices of Colorectal Cancer in Uhunowere community?

Methods

The study adopted a descriptive survey research design. This design according to Nworgu (2018) is a type of research design that makes use of survey instrument like questionnaire to collect data from a sample population and the data is used to describe the characteristics, opinions, behaviors, or experiences of a

group without influencing or manipulating any variables. The design is suitable for the study because the study seeks to assess what adults aged 50+ already know about colorectal cancer risk factors and their current screening behaviors, as well as provides a detailed, factual account of these variables without manipulating them. The design also allows for gathering information from a large number of participants in Uhunowere, ensuring a broad representation of the target group and questionnaire was used to effectively capture knowledge levels, and screening behaviors of adults in the study area.

The area of the study is Igbo-Eze South Local Government Area of Enugu State. It is located in Lat 6.55 N, Long 724 E Igbo – Eze and has a large area of over 166.3 km² with a total population of 147,328 of which 8% are aged 50 and above according to reports from the 2006 population census by the National Population Commission of Nigeria (NPCN). The accessible population for the study consisted of 2,114 adults (NIPOST, 2009) from Uhunowere which constitutes 8% of the entire population. The sample for this study was determined using Leslie Fishers formula (Lwanga and Lemeshow) for estimating minimum sample size in descriptive health studies, ($n = Z^2 p \frac{(1-p)}{d^2}$). The sample size for this study was 230 adults in Uhunowere. The respondents for the study were chosen using a systematic sampling technique, and it was done in stages. In the first stage, four autonomous communities were chosen by simple balloting. The second stage involved selecting villages from among the autonomous communities. A list of villages in each selected community was obtained from Igbo-Eze South Local Government Area. Using a simple random technique, five villages were chosen from each of the selected autonomous communities. The sample size was spread evenly throughout the twenty villages. In the third stage, clans were chosen from the already selected villages. In each village, five clans were chosen at random from a list obtained from the local government. The fourth stage involved house selection. The systematic sampling method was used to select 10 houses from each of the selected clans. Each had approximately 40 houses. Starting at the beginning of the clans, every fourth house was considered. (That is, $N/n = 40/10 = 4$). In the final stages, simple balloting was used to choose eligible respondents (adults over the age of 50 who were available during the study period and had lived in the community for at least three years).

Self structured questionnaire was used to obtain data from the respondents. The instrument for data collection was titled 'Knowledge of Screening Practices of Colorectal Cancer Questionnaire (KSPCRC). The Knowledge of Screening Practices of Colorectal Cancer Questionnaire (KSPCRC) is made up of two sections A and B. section A elicited the demographic information of the respondents while section B is made up of two clusters A and B. Cluster A is made up of 15 item statements that elicited information about the knowledge of screening practices of colorectal cancer, it has four response option of Very High Extent (VHE), High Extent (HE), Low Extent (LE) and Very Low Extent (VLE). Cluster B is also made up of 15 item statements that elicited information about the screening practices of colorectal cancer, it has response four response option of Very High Extent (VHE), High Extent (HE), Low Extent (LE) and Very Low Extent (VLE).

The instrument was face validated by three experts; two from Public Health Department, Faculty of Health Science and one expert from Research

Measurement and Evaluation Unit, Department of Science Education, Faculty of Education all in the University of Nigeria, Nsukka. To establish the reliability of the instrument, the Knowledge of Screening Practices of Colorectal Cancer Questionnaire (KSPCRC) was trial-tested by administering 30 copies of the questionnaire on a group of 30 people outside the study area. Cronbach alpha method was adopted to estimate the internal consistency reliability of the questionnaire. Cronbach alpha is considered appropriate because the instrument is a polytomously scored. Reliability coefficient of .83 and .83 was obtained for clusters A, and B, and an overall reliability estimate of 0.92 was obtained for the Knowledge of Screening Practices of Colorectal Cancer Questionnaire (KSPCRC). The reliability estimates showed that the various cluster of the instrument is reliable. The data collected was analysed based on the research questions that guided the study. The demographic variable was analyzed using frequency. All the research questions were answered using descriptive statistics of mean and standard deviation.

Results

Research Question One: To what extent do adults in Uhunowere community have the knowledge of screening practices of Colorectal Cancer?

Table 1: Mean and Standard Deviation of the Extent to which adults in Uhunowere Community have the Knowledge of screening practices of Colorectal Cancer

S/N	ITEM STATEMENT	N	Mean	Std. D	Decision
1	To what extent do you know that diet high in red and processed meats causes colorectal cancer	230	3.58	0.56	Very High Extent
2	To what extent do you know that low fiber intake increases the risk of colorectal cancer	230	3.13	0.81	High Extent
3	To what extent do you know that obesity is a risk factor for colorectal cancer	230	2.94	0.80	High Extent
4	To what extent do you know that lack of regular physical activity contributes to colorectal cancer	230	3.15	0.80	High Extent
5	To what extent do you know that excessive alcohol consumption increases the risk of colorectal cancer	230	3.03	0.86	High Extent
6	To what extent do you know that smoking is linked to a higher chance of developing colorectal cancer	230	2.99	0.77	High Extent
7	To what extent do you know that family history of colorectal cancer increases an individual's risk	230	3.11	0.82	High Extent
8	To what extent do you know that aging is a significant risk factor for colorectal cancer	230	2.95	0.79	High Extent
9	To what extent do you know that chronic inflammatory bowel diseases (e.g., Crohn's disease) increase the risk of colorectal cancer	230	3.17	0.75	High Extent
10	To what extent do you know that a high intake of sugary and processed foods contributes to colorectal cancer	230	3.03	0.74	High Extent

11	To what extent do you know that insufficient vitamin D levels are associated with colorectal cancer	230	3.16	0.77	High Extent
12	To what extent do you know that prolonged sitting and sedentary behavior contribute to colorectal cancer risk	230	2.95	0.71	High Extent
13	To what extent do you know that excessive stress and poor mental health may contribute to colorectal cancer risk	230	3.20	0.80	High Extent
14	To what extent do you know that exposure to certain environmental toxins increases the likelihood of colorectal cancer	230	3.13	0.87	High Extent
15	To what extent do you know that the presence of colorectal polyps can lead to colorectal cancer if untreated	230	3.07	0.85	High Extent
TOTAL A		230	3.11	0.62	High Extent

The result in Table 1 shows the mean and standard deviation of the extent to which adults in Uhunowere community have the knowledge of screening practices of Colorectal Cancer. The result shows that an average mean value of 3.11 with a standard deviation of .62 was obtained for the extent do

adults in Uhunowere community have the knowledge of risk factors of Colorectal Cancer. This implies that adults in Uhunowere community to a high extent have adequate knowledge of risk factors of Colorectal Cancer.

Research Question Two: To what extent do adults in Uhunowere community undergo screening practices of Colorectal Cancer?

Table 2: Mean and Standard Deviation of the Extent to which adults in Uhunowere Community undergo Screening Practices of Colorectal Cancer

S/N	ITEM STATEMENT	N	Mean	Std. D	Decision
1	To what extent do you undergo regular colorectal cancer screening as recommended	230	2.39	0.49	Low Extent
2	To what extent do you follow my doctor's advice on colorectal cancer screening	230	2.45	0.66	Low Extent
3	To what extent have you undergone a colonoscopy in the past five years	230	2.49	0.50	Low Extent
4	To what extent do you participate in routine stool-based tests for colorectal cancer detection	230	2.26	0.44	Low Extent
5	To what extent do you prioritize colorectal cancer screening as part of my health check-ups	230	2.48	0.50	Low Extent
6	To what extent dare you proactive in scheduling colorectal cancer screening tests	230	2.34	0.48	Low Extent
7	To what extent do you complete recommended follow-up tests after initial screening	230	2.35	0.48	Low Extent
8	To what extent do you discuss colorectal cancer screening with my healthcare provider	230	2.43	0.50	Low Extent
9	To what extent do you encourage my family members to undergo colorectal cancer screening	230	2.43	0.50	Low Extent
10	To what extent do you seek information on colorectal cancer screening guidelines	230	2.45	0.50	Low Extent
11	To what extent do you take advantage of free or subsidized colorectal cancer screening programs	230	2.48	0.50	Low Extent
12	To what extent do you undergo colorectal cancer screening even when I have no symptoms	230	2.46	0.50	Low Extent

13	To what extent do you believe screening is important for the early detection of colorectal cancer	230	2.41	0.49	Low Extent
14	To what extent do you ensure that I do not miss my scheduled colorectal cancer screening tests	230	2.26	0.44	Low Extent
15	To what extent do you request colorectal cancer screening when visiting a healthcare facility	230	2.31	0.46	Low Extent
TOTAL B		230	2.40	0.22	Low Extent

The result in Table 2 shows the mean and standard deviation of the extent to which adults in Uhunowere community undergo screening practices of Colorectal Cancer. The result show that average mean value of 2.40 and a standard deviation of .22 was obtained for the extent to which adults in Uhunowere

community undergo screening practices of Colorectal Cancer. This implies that adults in Uhunowere community undergo screening practices of Colorectal Cancer to a very low extent. This implies that they do not often undergo screening practices of Colorectal Cancer.

Research Question Three: What is the influence of age on screening practices of Colorectal Cancer in Uhunowere community?

Table 3: Mean and Standard Deviation on the influence of age on screening practices of Colorectal Cancer in Uhunowere community

Age	N	Mean	Std. D	Std. Error
50-55	58	2.96	.66	.09
56-60	75	3.10	.63	.07
61-65	61	3.17	.58	.07
66-70	36	3.21	.58	.10
Total	230	3.11	.62	.04

The result in Table 3 shows the extent to which adults in Uhunowere community have the knowledge of risk factors of Colorectal Cancer based on their age differences. The result revealed that adults aged 50-55 years have an average mean response of 2.96 and a standard deviation of .66, adults aged 56-60 years have an average mean response of 3.10 and a standard deviation of .63, adults aged 61-65 years have an average mean response of 3.17 and a standard deviation of .58, and adults aged 66-70 years have an average mean response of 3.21 and a standard deviation of .58. Since all the responses were greater than 2.50 set as benchmark for taking decision, it is concluded that adults in Uhunowere community to a high extent have the knowledge of risk factors of Colorectal Cancer irrespective of their age differences. However, adults between 66-70 years have more knowledge of risk factors of colorectal cancer compared to others.

Discussion

The result of the study shows that adults in Uhunowere community to a high extent have adequate knowledge of screening practices of Colorectal Cancer.

It could be because of their level of education, it was observed that many of the community members are graduates and many others are still in the universities. The presence of community health programs that educate residents about colorectal cancer, in addition to their high literacy level, could have led to better understanding of health information. Exposure to radio, television, and social media health information as well as the use of local language to communicate cancer risk factors effectively. It could also be that there has been high incidence of colorectal cancer within the community leading to increased awareness. The presence of hospitals, clinics, and health centers provide information on colorectal cancer and routine health check-ups and screenings promoting knowledge of risk factors is a significant factor to have influenced such result. The result of this study contradicts the report of Bidouei *et al*, (2014) who determined the knowledge and perception towards colorectal cancer screening in East of Iran, and reported that more than 99% of the participants had no knowledge of colorectal cancer.

The result shows that adults in Uhunowere community undergo screening practices of Colorectal

Cancerto a very low extent. This implies that they do not often undergo screening practices of Colorectal Cancer. Adults in Ohunowere may not have often go for screening practices of colorectal cancer because the cost of colorectal cancer screening can be high, and without adequate health insurance or government support, many may not afford it. Many adults prioritize immediate financial needs like food, housing, education and so on over preventive healthcare. Some people may avoid screening due to fear of being diagnosed with cancer. Despite the knowledge of colorectal cancer, many adult may prefer traditional medicine over Western medical practices as such may reduce participation in screening. If colorectal cancer screening is not covered or subsidized by insurance schemes, it may be unaffordable for many. This study is in tandem with the findings of Bidouei *et al*, (2014) that reported that more than 99% of the participants does not undergo screening test and the most cited reasons for not having a screening tests were 'did not have any problem' and 'did not think it was needed. This finding contradicts the findings of Rogers and Goodson (2014) that reported that respondents have moderate knowledge and positive attitude towards colorectal cancer screening.

Conclusion

The study concludes that adults in Uhunowere community have adequate knowledge of risk factors of Colorectal Cancer as well as adequate knowledge of screening practices of Colorectal Cancer, but do not often undergo screening practices of Colorectal Cancer irrespective of their gender and age differences.

Recommendations

Based on the findings of the stud, the following recommendations were made:

1. Since knowledge is high but screening is low, health authorities and community leaders should organize free or low-cost screening programs and educate people on the importance of early detection.
2. Use churches, community meetings, and local media to explain that knowing the risks is not enough, going for check-ups and screening saves lives.
3. Since older adults (66–70 years) and women already have higher knowledge, they can be trained as community health champions to encourage younger adults and men to take screening seriously.

4. Place screening services closer to the community or organize mobile health outreach so people can easily participate as well as continue campaigns on healthy eating, exercise, quitting smoking, and reducing alcohol, so the knowledge gained is put into daily practice.

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