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# Factors affecting avaliability and quality of health centers for the uptake of colorectal polyps screening for early detection of colorectal cancer among adults aged 40years and above in Imo state Nigeria

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**Abstract**

Colorectal polpys prevalence has recently attracted the attention of public health experts all over the world because large number of people especially adults from fourty years and above are being diagnosed on daily basis and also the significant burden of colorectal cancer morbidity and mortality associated with it. This work was carried out to investigate factors affecting avaliability and quality of health care centers for the uptake colorectal polyps screening for early detection of colorectal cancer among adults aged fourty years and above in Imo state, South Eastern Nigeria. The study was a population based and adopted a descriptive study design. The study adopted a sample size of 400 adults both male and female of 40 years and above. The study considered d independent variables such as gender, age,marital status, occupation, family history of colorectal cancer, levels of physical activities, cigarette smoking habits and alcohol consumption habit, monthly income, Local Government Area of residence, family size and diabetic status The study followed WHO stepwise approach for survey of non-communicable disease (i.e structured questionnaire and physical measurements). Data were analyzed using IBM-SPSS statistics version 23 and Microsoft Excel 2010 was used in drawing charts. Measured variables were summarized using descriptive statistics of mean and standard deviation. Graphical representations such as bar chart and pie charts were used to represent some of the results. Significant factors in the model were tested using Wald test. The level of significance was placed at 5% for the factors. Confidence interval was placed at 95% and odds ratio was calculated as a measure of the strength of the association between factors affecting uptake and colon cancer of interest in the study. The result showed higher number of participants among females as well as 50 -59 age group having the highest level of participation respectively. Alchol intake (p=0.03) and o smoking (p=0.05) were found to be insignificant in the study for colorectal polyps screening. Regression analysis showed that age had a significant role to play in the uptake of colorectal cancer as well as level of income among the participants. The study found secondary education to be significant in the adjusted analysis (p=0.011, 95%CI= 0.071 – 0.0708).

**Keywords:** colorectal cancer, prevalence, screening

## Introduction

Colorectal polyps prevalence among adults is a chronic non-communicable health challenge that places morbidity and mortality burden to the public health system and the individuals at risk (WHO, 2015). High rates of participation has been consistently associated with screening efficacy in terms of mortality reduction as well as cost-effectiveness (Sirinukunwattana, Ahmed Raza, Yee-Wah Tsang, Snead, Cree, Rajpoot, 2016) [8]. Screening uptake, is defined as a cross-sectional assessment of compliance of a population against any disease so as to critical determine success for any population-based screening program (Khandker, Lee, Jeon, Yun, Kim, and Jang, 2010). Colorectal polyps are polyps that arise from the inner lining of the colon (large intestine) and are very common due to Changes in the genetic material of cells lining the colon (American Cancer Society, 2017) [1]. Elbert (2019) defined Colon cancer as growths that occur on the inner lining of the large intestine (colon) and usually protrude into the colon. Polyps are formed when the genetic material within the cell lining the colon changes and becomes abnormal (mutates).

## Materials and Method

### Study Area

Imo state is one of the 36 states of Nigeria. It is located in the south eastern region of the country, specifically between the lower River Niger and the upper Imo River. It is inhabited mainly by the Igbo ethnic group whose major occupation is agriculture and trading. Owerri is the capital of the state and also its major city. Other cities in the state include Orlu, Okigwe, Mbaise, Oguta, Mbano and Obowo.

### Data Collection Instrument

Data were collected using:
Risk assessment structured questionnaire
Physical extermination

### Questionnaire Design

A pre-tested, self-administered, structured risk assessment questionnaire based on WHO stepwise approach to chronic disease risk factor surveillance (STEPS) instrument was developed and used. The language of the questionnaire was English.

### Study Design

The design employed in this study was a descriptive design.

### Sampling Technique

The sample size calculation will be calculated using the

Taro Yamane formula for sample size calculation for a given population (Uniproject, 2021), formulated by the statistician Taro Yamane in 1967. The mathematical illustration of the Taro yamene formula is as follows:

n = N/1 + N(e)2

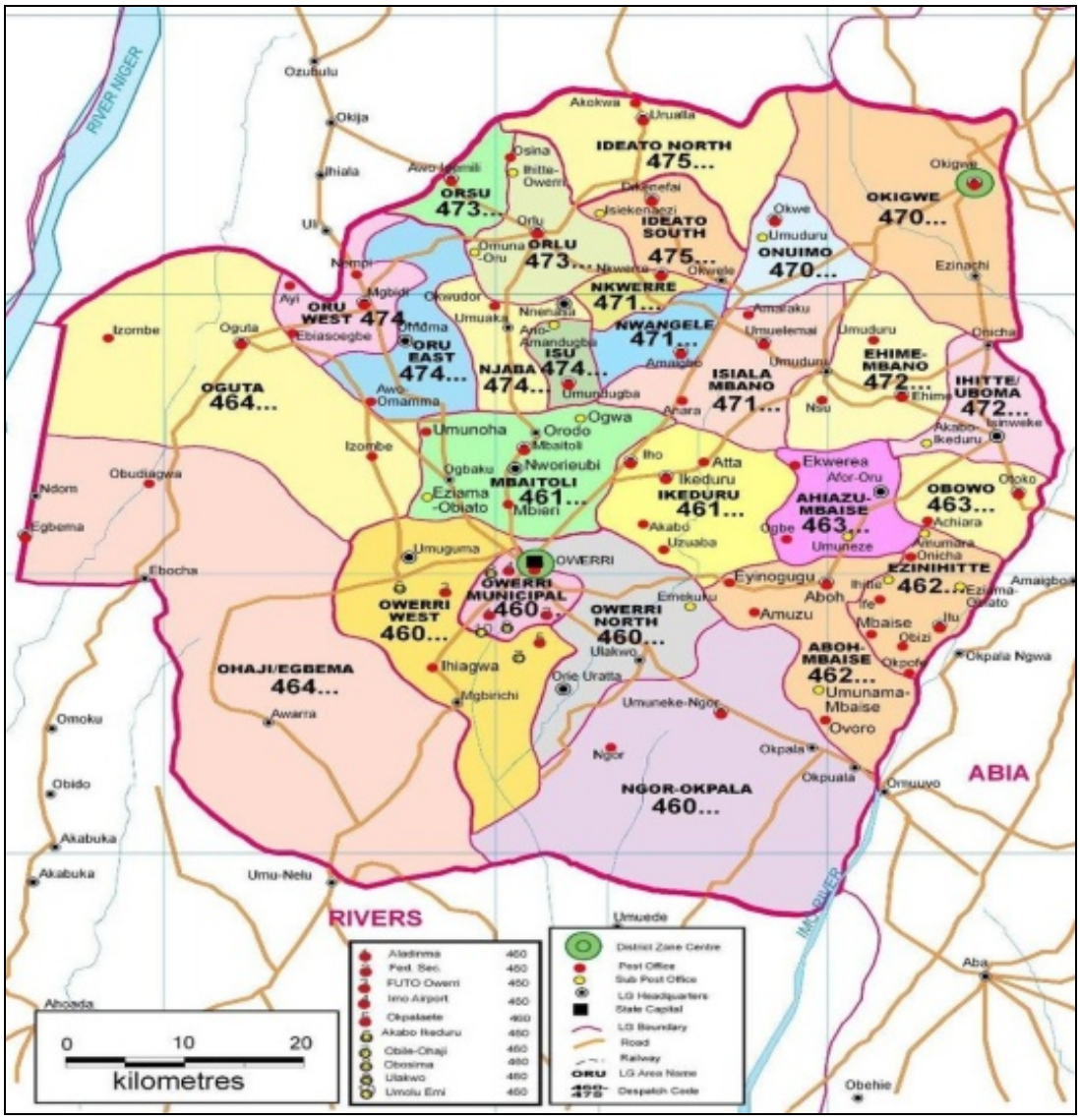
Where
n is the sample size
N is the population under study
e is the marginal error

The population under study is calculated from the 2016 projected population according to National Population Commission (NPC) of the Local Government areas under study. Five percent of this at risk adult population will be used for the study. Thus for Orlu zone the population for the LGAs under study include OhajiEgbema- 251,900, Oguta - 196,000, Oru East- 153,900 while five percent of the entire population of each LGA was include 12,595,9,830 and7,695 respectively, For Owerri Zone, the population for the LGA under study is Ikeduru-206,200, Owerri West-140,100 and Owerri Municipal- 172,600. Five percent of the population will be 8,085, 6,840 and 8,630 while Okigwe zone has Obowo-161,700 and Okigwe- 182,700 and five percent shall be 8,085 and 9,135 respectively.

So using the formula n = N/1 + N(e)2
sample size n will be
N= (12,595+9,830+7,695+8,085+6,840+8,630+8,085+9,13) =70,895
e = 0.05, Therefore
n = 70,895÷(1+70,895(0.05×0.05)
=399.99

**Data Analysis Method**

Data analysis was performed using IBM-SPSS statistics version 23 (SPSS Inc. Chicago, USA) for data analyses. Microsoft Excel 2010 was used in drawing charts. Descriptive statistics was used to summarize the data. The frequencies distribution of the variable characteristics were computed by case and control and presented in a table of distribution which were all expressed as the percentage of the distribution. Measured variables were summarized with mean and standard deviation Graphical representations such as bar chart bar was used to represent some of the results.




**Source:** Owerri Capital Development Authority, 2019

**Fig 1:** Map of Imo State

## Results and Discussion

### Demographic Distribution for Study Participants

A total of 400 subjects were available for analysis. The distribution for demographic characteristics of the subjects is presented in Tables 1-10. The overall gender that contained the highest number of study participants was the female with 250(61.6%) and was closely followed by the males with 150 (36.9%) while the age range containing the 50 - 59 years with 138 (34.0%), 60 – 69 years of age closely followed with 108(26.6)respectively. Also, 70- 79 older age group had the least participant with 40(9.9%) and while 40-59 age group with 114 (28.1%).

Results show clear majority were married 345 (85.0%), 15 (7.6%) were never married while 55 (13.6%) were widowed, divorced/separated. The largest occupation practiced among the participants was farming 163(40.1%), followed by civil servants 113(27.8%) and others 61(15.0%). Students were the least occupation among the participants 11(2.7%), followed by unemployed 52(12, 8%). Participants were distributed equally from the eight local governments with 50(12%) each. Close to half of the study participants attained up to College, vocational school with 173(42.6%), followed by those who stopped at primary level with 172(42.4) % leaving tertiary education level 37(9.1%) respectively. A very large number of participants were living below 10,000 naira income with 132(32.5%) closely followed by those earning 11,000 -30,000 having 99(24.4%). Those with no income have 62(15.5%) while from 31,000 -60,000 had 50(12.3%) leaving the group of 61,000-90,000 and greater than 90,000 at 44(10.8%) and 12(3.0%) respectively. Participants who engage in alcohol have 46(11.3%) lower than those who don't take it with 354(87.2%). Smoking is not left out as the yes group had 36(8.9%) leaving those participants who don't smoke at 364(89.9%). The wieght of the participants were recorded with 60 -69kg with 271(66.7%), closely followed by 50 - 59kg having 72(17.7%) and 70 -79kg with 56(13.8%).

**Table 1:** Sex

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Male | 150 | 36.9 | 37.5 | 37.5 |
| | Female | 250 | 61.6 | 62.5 | 100.0 |
| | Total | 400 | 98.5 | 100.0 | |
| Missing | System | 6 | 1.5 | | |
| Total | | 406 | 100.0 | | |

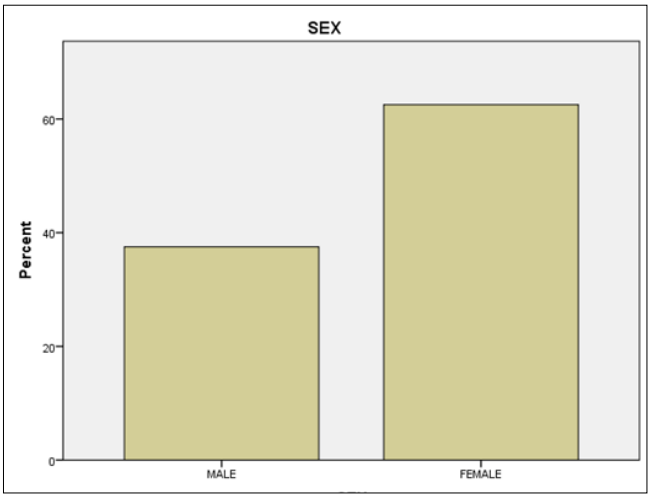



**Fig 1:** Sex

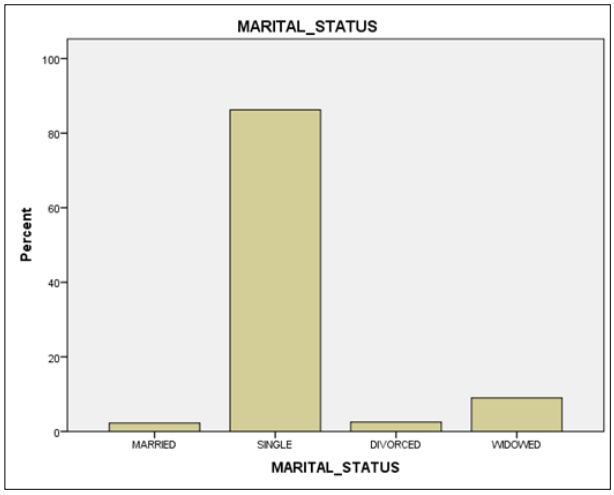



**Fig 2:** Marital status

**Table 2: AGE**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 40-49 | 114 | 28.1 | 28.5 | 28.5 |
| | 50-59 | 138 | 34.0 | 34.5 | 63.0 |
| | 60-69 | 108 | 26.6 | 27.0 | 90.0 |
| | 70-79 | 40 | 9.9 | 10.0 | 100.0 |
| | Total | 400 | 98.5 | 100.0 | |
| Missing | System | 6 | 1.5 | | |
| Total | | 406 | 100.0 | | |
| | | | | | |

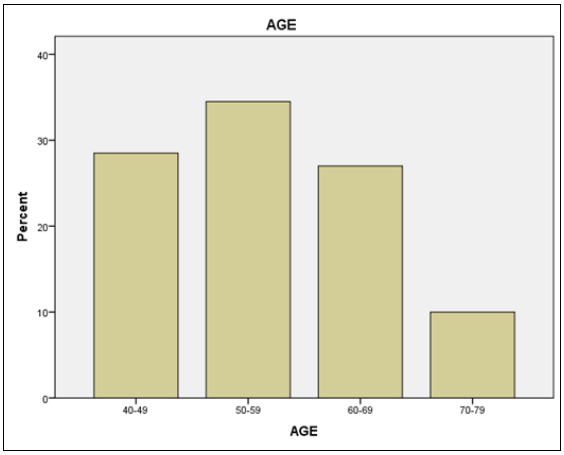



**Fig 3:** Age

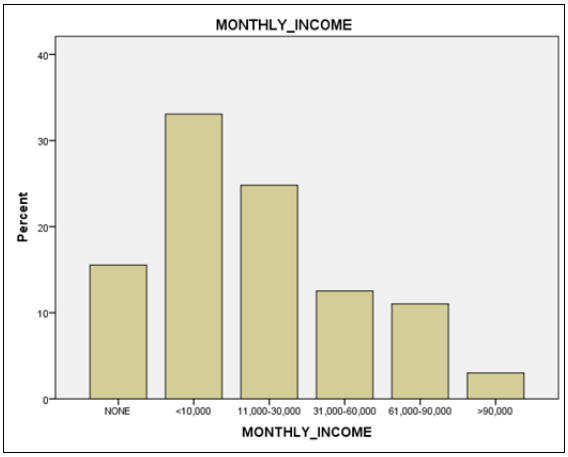



**Fig 4:** Monthly income

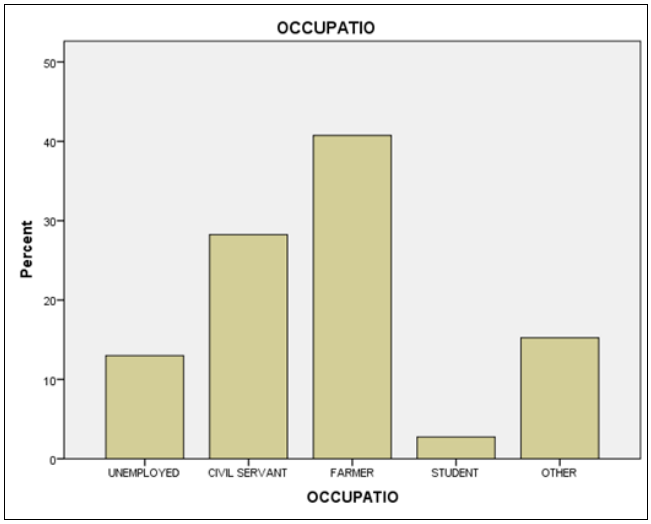



**Fig 5:** Occupation

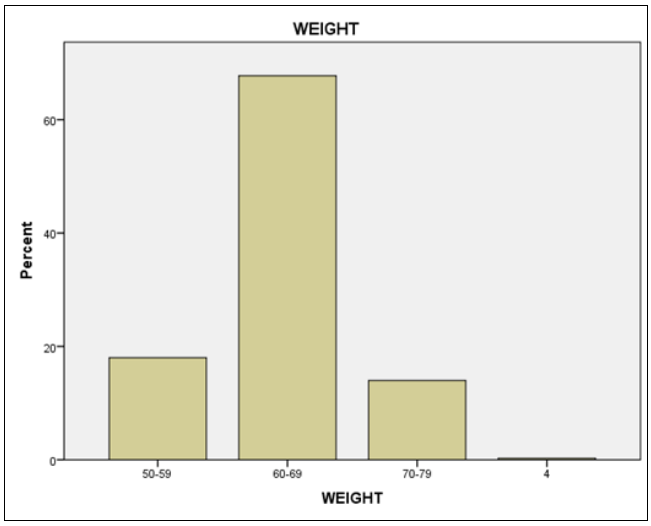



**Fig 6:** Respondent Weight

## Discussion

This study is consistent with (WHO, 1999) related study which shows that majority of the respondents 250(62.5%) are females, although ignorance on uptake of colorectal cancer was common among those aged 50:59 years 138(34.5%) as well as married people in both studies rather show a higher rate 345(85.0)% among those with less than 10,000 income at 132(32.5). The study contrary to previous by (Rosilio *et al.*, 1998) shows that 34% of the respondents are mostly farmers with 163(40.1) and also majorities are secondary Education having 173(42.6%) with alcohol intake, smoking and having majority as NO 87.2% and 89.7% leaving their weight as 66.7%.

Results of deferentialand regression analysis showed smoking and alcohol are no significant risk factors to uptake of colorectal cancer screening. One interesting thing about this finding is that different levels of income required played significant role in the uptake of colorectal cancer screening. Shittu, (2016), found s lifestyles as significant predictor for colorectal cancer. The present finding agreed with Jangra, Malik, Singh and Sharma, (2019) [3] on the beneficial role of exercise in preventing colorectal cancer aside early screening and Leske *et al*, (2008) on the role of exercise, and also Shittu (2016) [6] on the role of exercise on cancer comorbidity. Physical activity according to Goodyear and Kahn, (1998) increases muscle glucose uptake and insulin sensitivity. During physical activity there is increased uptake and utilization of glucose thereby meeting the metabolic fuel need of the body. Also Rats models research has shown that the period after physical activity is characterised by increased insulin sensitivity in muscles (Ivy and Holloszy 1981). During physical exercise there is increased muscle mass and raised capillary proliferation in muscles and increased sensitive types of muscle fibres all work synergistically to contribute to enhance insulin sensitivity which is beneficial to the body with (Goodpaster and Brown, 2005) [2].

## Conclusion

Lifestyle factors such as active physical exercise, moderate/avoiding alcohol consumption and avoiding cigarette smoking are cardinal for the prevention of colorectal cancer among the adults. The present study indicate that having family history of colorectal cancer is accompanied with more risk of cancer Comorbidity. Significant relationship was obtained between the colorectal cancer and demographic factors.

## Ethical consideration

Ethical issues (including plagiarism, data fabrication, double publication) have been completely observed by the authtors

## Competing Interest

The authors declare that they have no competing interest

## Consent for publication

Not applicable

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