Quest Journals
Journal of Medical and Dental Science Research
Volume 12~ Issue 4 (April 2025) pp: 09-17
ISSN(Online) : 2394-076X ISSN (Print):2394-0751
www.questjournals.org

Research Paper

Assessment of the Knowledge, Attitudes and Perceptions to Radiotherapy By Persons With No Previous Exposure In Aba, South Eastern Nigeria

IBE U. IBE
CONSULTANT UROLOGIST
DEPARTMENT OF SURGERY, ABIA STATE UNIVERSITY TEACHING HOSPITAL, ABA NIGERIA

OBINNA CHIKEZIE
MEDICAL OFFICER
DEPARTMENT OF MEDICAL SERVICES MINISTRY OF HEALTH, UMUAHIA

OWO ELEKE
DEPARTMENT OF SURGERY
ABIA STATE UNIVERSITY TEACHING HOSPITAL, ABA NIGERIA

GOODNESS NZECHUKWU
DEPARTMENT OF INTERNAL MEDICINE
ABIA STATE UNIVERSITY TEACHING HOSPITAL, ABA NIGERIA

ABSTRACT
Radiotherapy is a major management modality for most cancers.
It is a loco-regional protocol and so most useful in the organ confined and locally advanced stages. Although a very useful of modality of treatment, it has several adverse effects creating negative public attitude and perceptions which make acceptance to Radiotherapy (RT) poor.
The aim of this study was to assess the knowledge, attitude and perceptions of men and women with no previous exposure to RT.
The study was cross-sectional in design involving the use of structured questionaires written in English Language and given to men and women with no previous exposure.
The questionnaires were distributed to major health institutions in the metropolis.
Out of the 160 questionnaires given out only 130 were completed and duly returned.
The age range of participants was 22 -82 years with mean age of ----.
Of the 130 participants, the age group 51- 60 years had the highest number of 40 (30.8%). The age group 81-90 had the least number 5 (3.8%).
Of the 130 participants, 100 were males 76.9% while 30 were females 23.1%.
55 (42.3%) of the participants had post secondary education.
30 (23.1%) had secondary education. 30 (23.1%) had no formal education while 15 (11.5%) had primary education.
85 participants (65.4%) had heard and known about radiotherapy (RT) while 45 (34.6%) had no knowledge of RT.
The most common source of knowledge was health care providers 55 (64.7%) followed by patients relatives 12 (14.1%).
70 (82.4%) had prior knowledge or the adverse effects of RT while 15 (17.6%) were ignorant.
70 participants (82.4%) felt that RT was very dangerous while 10 (11.8%) felt it was not too dangerous and only 5 (5.9%) felt it was not dangerous.
Many reasons accounted for this poor attitude and perception. 60 (75.5%) felt that the adverse effects were toxic.

10 (12.5%) felt it leads to secondary cancer while 5 (6.25%) felt that it was a necessary evil that could be avoided if there was an alternative. 3 (3.8%) felt it is prone to impotence while 2 (2.5%) felt it was an index of bad prognosis. In other words, the mere prescription of RT meant that death was imminent.
73 participants 85.9% were unwilling to recommend RT while 12 were willing.
While knowledge of RT were fairly good in Aba, attitude and perception were grossly poor.
KEYWORDS: *Knowledge, Attitude, Perceptions, Radiotherapy and Aba.*

R*eceived 08 Apr., 2025;* ***R****evised 17 Apr., 2025;* ***A****ccepted 19 Apr., 2025*
P*ublished with open access at* ***www.questjournas.org***

I. INTRODUCTION

Radiotherapy, also called radiation therapy, is a management modality applied in the treatment of most cancers.
It employs beams of intense energy such as X- rays and protons to destroy cancer cells.
It could be given from outside the body referred to as External Beam Radiotherapy where machines called Linear Accelerators from which high energy beams are focused onto the body.
When radiotherapy (RT) is given internally, it is described as brachytherapy.
Radiotherapy can also be given by the injection of radioactive substances called radiopharmaceuticals into the body.
The mechanism of action is the use of high energy beams to damage the genetic materials in the nucleus of the cells which is ordinarily responsible for division and growth of the cells and tissues.

The indications for radiotherapy include:

- Most malignant tumors
- Benign tumors

Other non neoplastic conditions such as intractable haemorrhage, intractable pains, spinal cord compression and other non- specific conditions.
In malignant conditions, radiotherapy can be applied in the following situations:

- As a primary treatment where it is the only modality of treatment.
- Can be given on a neo-adjuvant basis to shrink and downstage malignant tumors prior to surgery.
- Can be given on adjuvant basis to deal with the remaining cancer cells after surgery.
- Can be used to deal with other symptoms of advanced cancer.
- Can be given in conjunction with chemotherapy-chemoradiation to deal with the cancer.

Despite these beneficial effects, radiotherapy has several adverse effects which are dependent on:

- The area of the body radiated
- The dose of radiation given
- The duration of the exposure
- Host immunity
- The presence of co-morbidities

The adverse effects include:

- Hair loss which maybe temporary or permanent
- Fatigue
- Sore throat
- Difficulty in swallowing
- Loss of taste
- Nausea, vomiting and diarrhea
- Mouth sores
- Tooth decay
- Cough
- Shortness of breath
- Erectile dysfunction
- Bladder irritation
- Development of new cancers

The adverse effects maybe classified as:

- Early effects – which occur within a few weeks of radiotherapy exposure

- Consequential effects- due to non-treatment of early effects
- Late effects- occurring months to years post exposure

Radiotherapy is a loco-regional treatment aimed at treating the diseased tissues or organs but has the capacity to affect normal surrounding tissues adversely.
Various methods have been devised to reduce the effects on normal tissues.
The external beams (RT) has several variants:

1. 3- Dimensional conformal radiotherapy (3D-CRT). It uses special computers to map out the diseased organ.
2. Intensity modulated radiotherapy (IMRT). It is an advanced form of 3D –CRT which rotates round the patient delivering radiation to the target organ from several angles. A variant of this is called volumetric modulated Arc Therapy (VMAT). It delivers radiation much quicker than conventional IMRT.
3. Stereostatic body radiation therapy (SBRT). It uses advanced image guided techniques to deliver large doses of radiation to precise area of the targeted organ.
4. MRI- Guided radiation therapy. This combines 3D- CRT and IMRT and image guided techniques in one.
5. Proton Beam Radiation Therapy. It focuses a beam of protons on the target tissues instead of X-rays. Photons or X-rays release their energy before and after hitting their target and may therefore inflict damages on surrounding normal tissues but protons after traveling for a distance to their target release their energy making them less able to damage normal tissues.
6. Hypo-fractionation techniques. It is a technique used to deliver high doses of radiation over a short period so as to reduce the period of exposure.

Brachytherapy, on the other hand, has two (2) major variants. Brachytherapy also called seed implantation or interstitial radiation therapy is used for:

- Early stage cancer, especially low risk cancers
- Used in combination with external beam radiotherapy where risk is high

It is applied with the implantation of radioactive seeds into the target tissues. Variants include:

- Permanent (low dose rate) brachytherapy
- Temporary (high dose rate) brachytherapy

All these measures were instituted to make radiotherapy a safer procedure and improve attitudes and perceptions towards it.

II. METHODOLOGY:

The study was cross-sectional in design. It was carried out among adult males and females attending outpatient clinics of some busy health institutions within the metropolis who had had no previous exposure to radiotherapy.
The study involved the use of structured questionnaires written in English Language and given out by Doctors to patients with no previous RT exposure.
Those with difficulty completing the questionnaires due to low literate level were aided by the Doctors.
The total of 160 questionnaires were given out with only 130 completed and duly returned.
The questionnaires contained questions bothering on knowledge, attitude and perceptions to RT are the reasons for such attitude. Data from the questionnaires were collated, analyzed and interpreted.

Inclusion Criteria

Adult males and females with no previous exposure to radiotherapy.

Exclusion criteria

Adult males and females with previous exposure were excluded.

III. RESULTS

160 questionnaires were given out but 130 completed and duly returned.

TABLE 1: SHOWING DEMOGRAPHIC VARIABLES

S/NO	VARIABLES	OUTCOME	
1	MEAN AGE	45	
2	AGE RANGE	22- 82 YRS	

TABLE 2: SHOWING SEX DISTRIBUTION OF THE PARTICIPANTS

S/NO	SEX	NUMBER	PERCENTAGE
1	MALES	100	76.9
2	FEMALES	30	23.1%
3	**TOTAL**	**130**	**100%**

FIG 1 BAR CHART

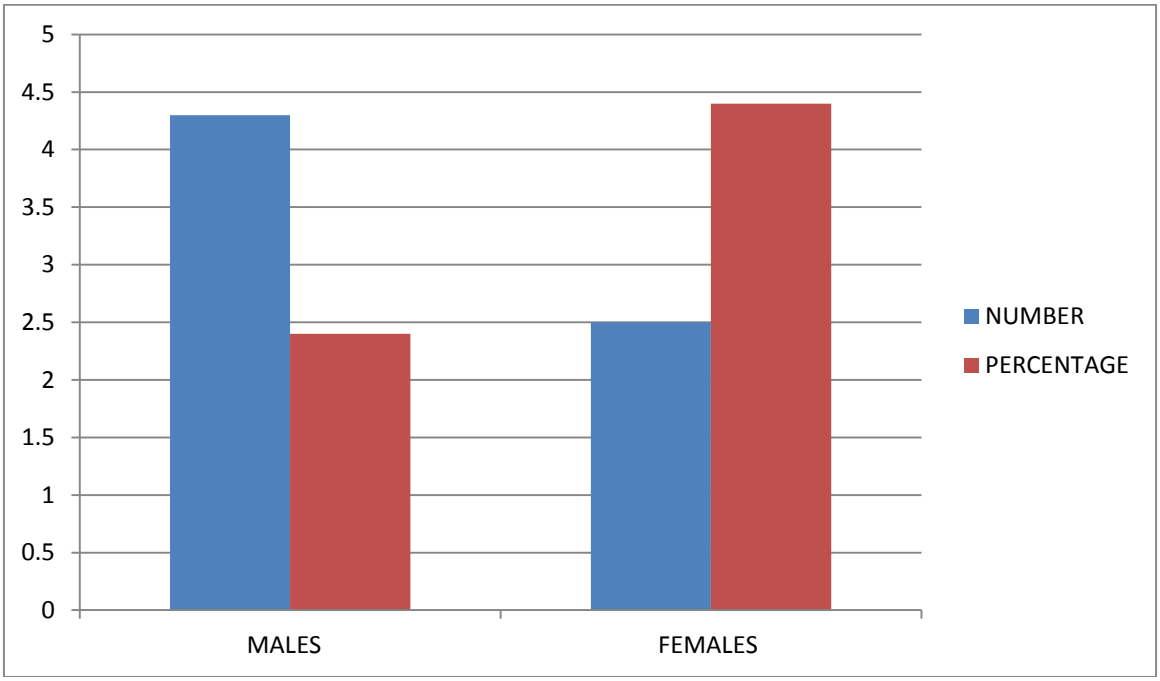


TABLE 3: SHOWING THE AGE GROUP CHARACTERISTICS OF THE PARTICIPANTS (n-130)

S/NO	AGE RANGE IN YEARS	NUMBER	PERCENTAGE
1	20-30 YRS	25	19.2%
2	31-40 YRS	15	11.5%
3	41-50 YRS	10	7.7%
4	51-60 YRS	40	30.8%
5	61-70 YRS	20	15.4%
6	71-80 YRS	15	11.55%
7	81-90 YRS	5	3.8%
	TOTAL	**130**	**100%**

TABLE 4: SHOWING THE EDUCATIONAL STATUS OF PARTICIPANTS (n-130)

S/NO	EDUCATIONAL STATUS	NUMBER	PERCENTAGE
1	POST SECONDARY EDUCATION	55	42.3%
2	SECONDARY EDUCATION)	30	23.1%
3	NO FORMAL EDUCATION	30	23.1%
4	PRIMARY EDUCATION	15	11.5%
5	**TOTAL**	**130**	**100%**

Participants with secondary and post-secondary education totaled 85 (65.4%) which is literate enough.

FIG 2 BAR CHART

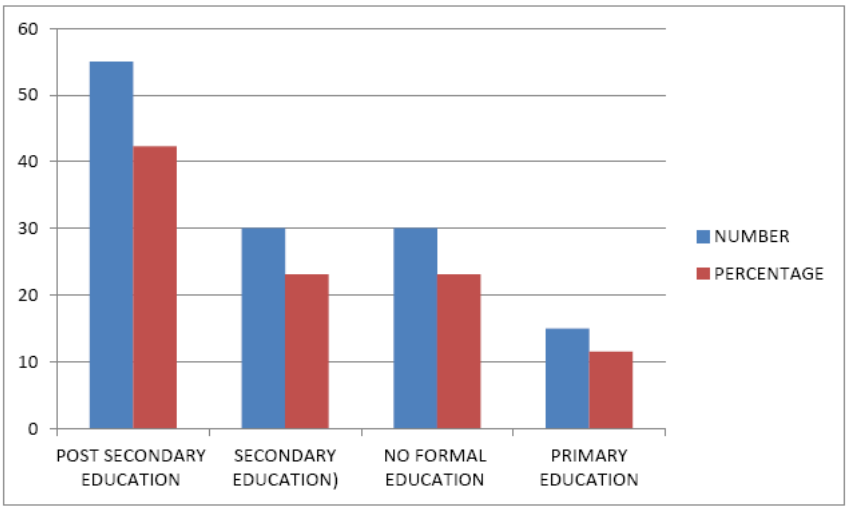


TABLE 5: SHOWING KNOWLEDGE OF RADIOTHERAPY

S/NO	KNOWLEDGE OF RADIOTHERAPY	NUMBER	PERCENTAGE
1	THOSE WHO HAD HEARD AND KNOWN ABOUT RT	85	65.4%
2	THOSE WHO HAD NOT HEARD AND HAD NOT KNOWN ABOUT RT	45	34.6%
3	**TOTAL**	**130**	**100%**

FIG 3:
BARR CHART

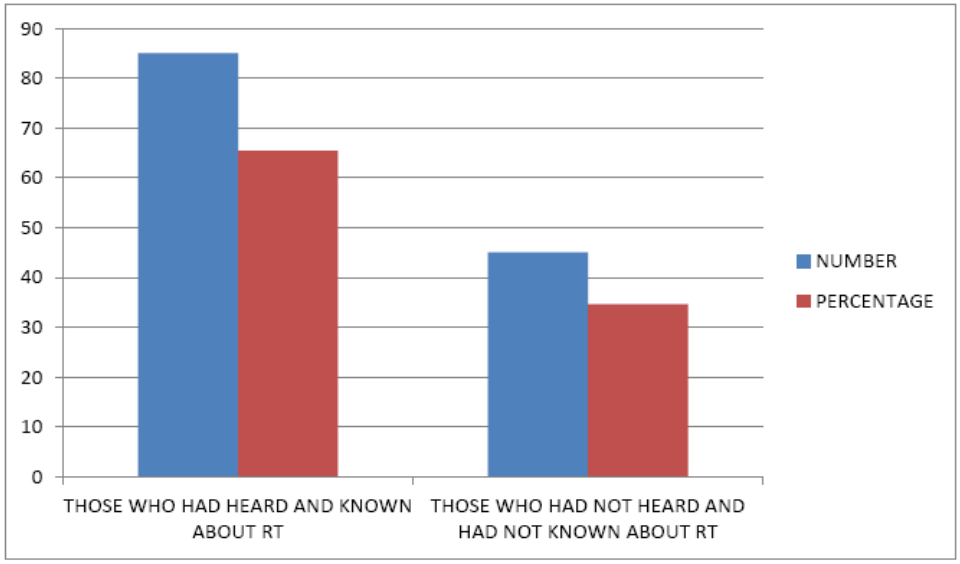


TABLE 6: SHOWING THE SOURCES OF KNOWLEDGE OF RADIOTHERAPY (n-85)

S/NO	SOURCE OF KNOWLEDGE	NUMBER	PERCENTAGE
1	HEALTH CARE PROVIDERS	55	64.7%
2	PATIENTS RELATIVES	12	14.1%
3	NEWS MEDIA	10	11.85
4	HEALTH SEMINARS	8	9.4%
5	**TOTAL**	**85**	**100%**

Health care providers were the most common source of knowledge of RT.

FIG 4:
BARR CHART

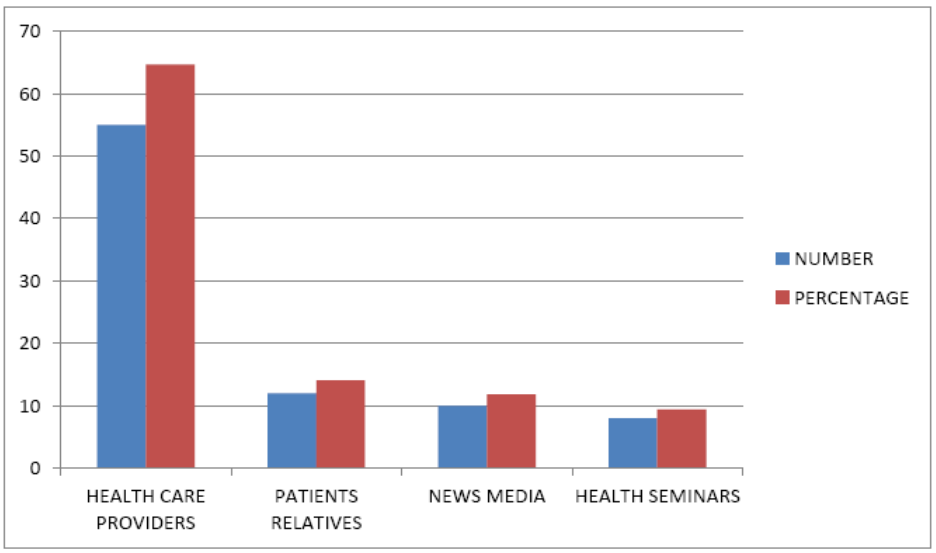


TABLE 7: SHOWING THE KNOWLEDGE OF ADVERSE EFFECTS OF RADIOTHERAPY

S/NO	ADVERSE EFFECTS	NUMBER	PERCENTAGE
1	KNOWLEDGE OF ADVERSE EFFECTS	70	82.4%
2	NO KNOWLEDGE OF ADVERSE EFFECTS	15	17.6%
3	**TOTAL**	**85**	**100%**

FIG 5 BAR CHART

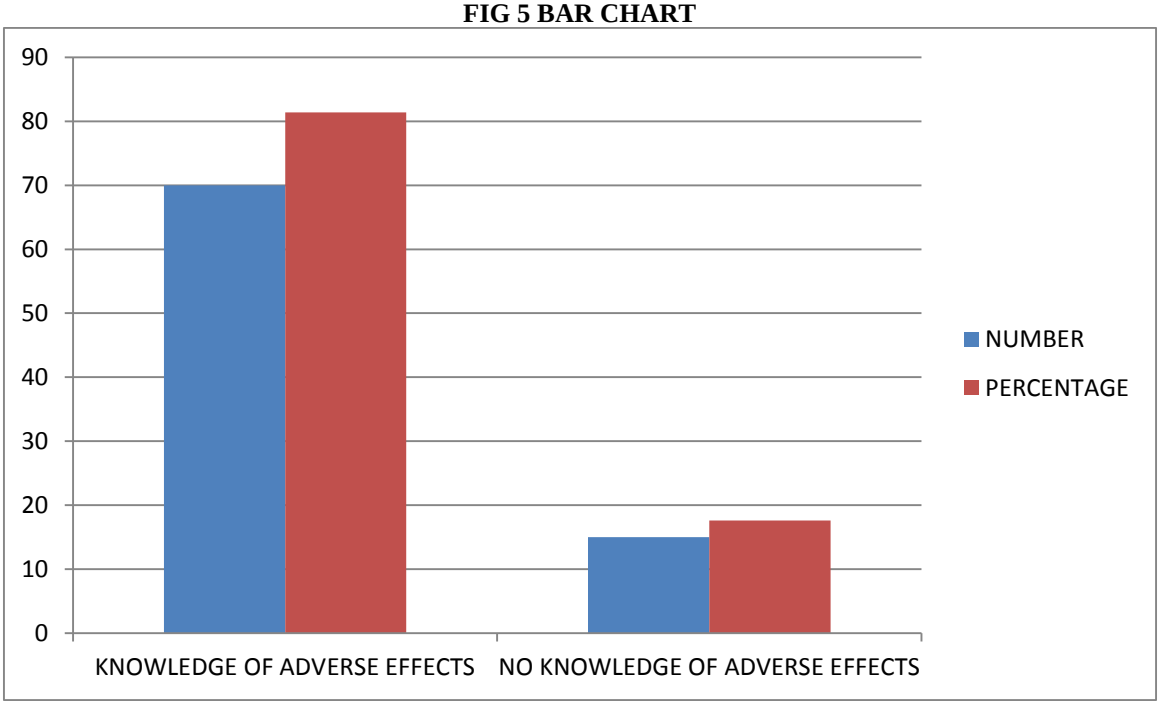


TABLE 8: SHOWING ATTITUDE AND PERCEPTIONS TO RADIOTHERAPY

S/NO	ATTITUDE AND PERCEPTION	NUMBER	PERCENTAGE
1	VERY DANGEROUS	70	82.48%
2	NOT TOO DANGEROUS	10	11.8%
3	NOT DANGEROUS	5	5.9%
4	**TOTAL**	**85**	**100%**

FIG 6: BAR CHART

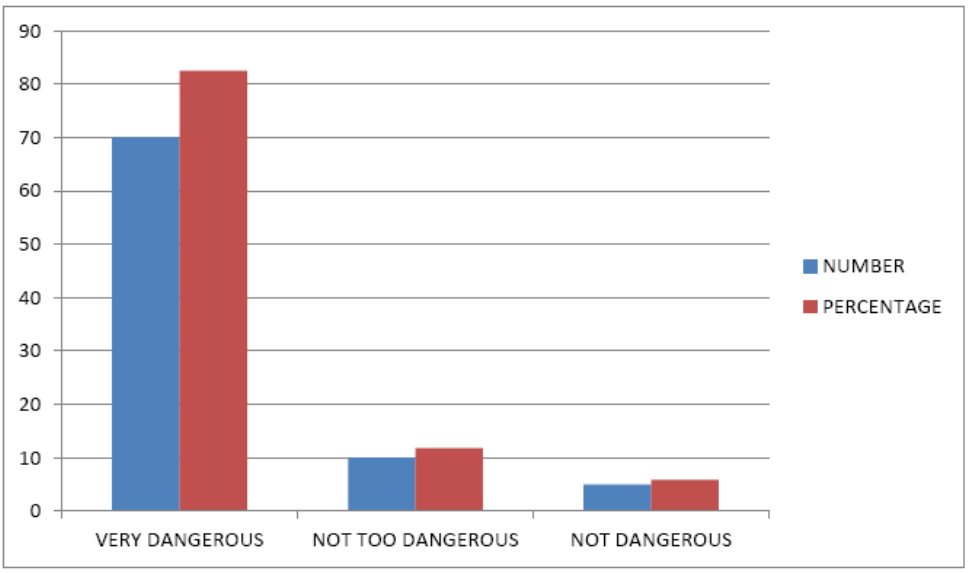


TABLE 9: SHOWING THE REASONS FOR POOR ATTITUDE AND PERCEPTION TO RADIOTHERAPY (n-80)

S/NO	REASONS	NUMBER	PERCENTAGE
1	TOXIC ADVERSE EFFECTS	60	17.5%
2	LEADS TO SECOND CANCER	10	12.5%
3	NECESSARY EVIL	5	6.3%
4	IMPOTENCE	3	3.8%
5	POOR PROGNOSIS	2	2.5%
6	TOTAL	80	100%

FIG 7:BAR CHART

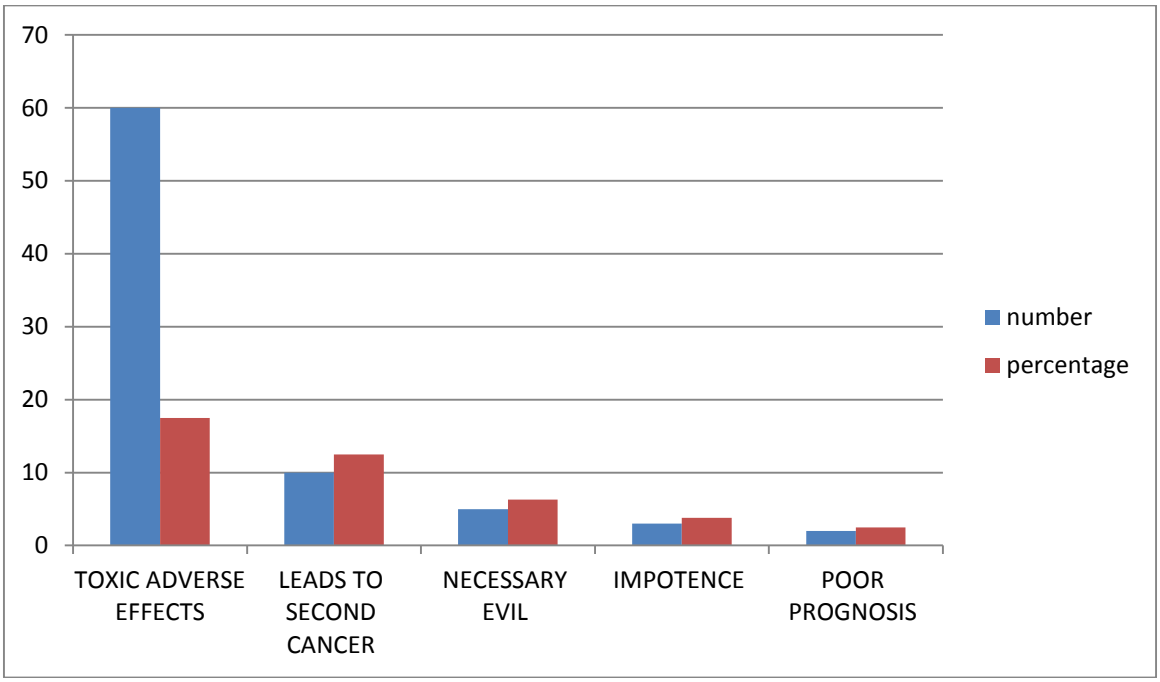
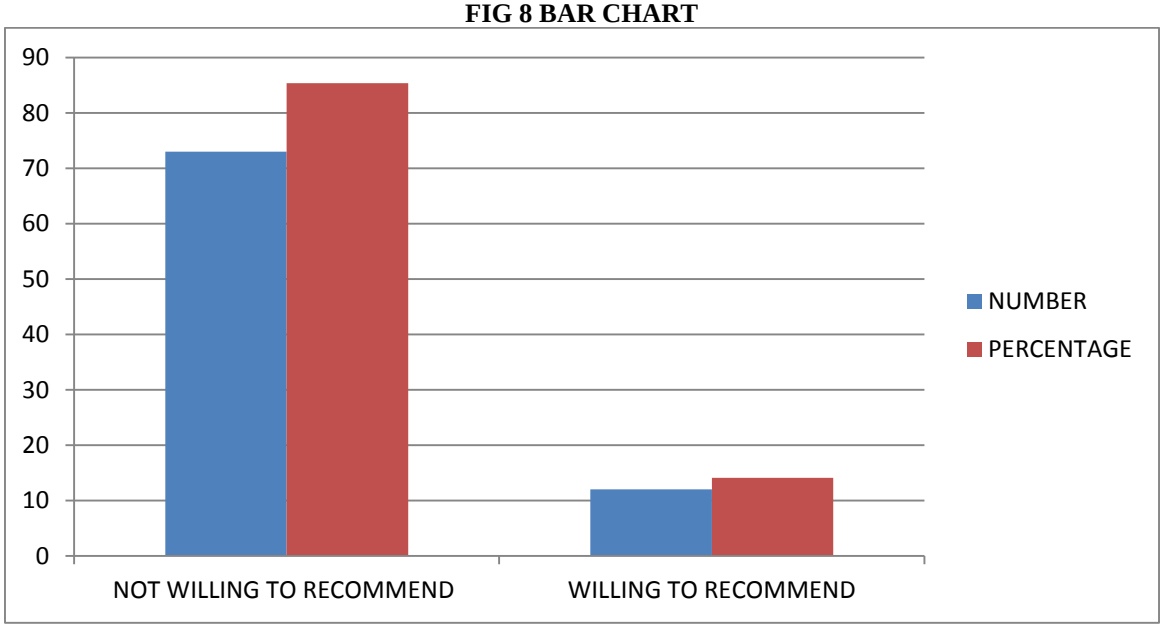


TABLE 10: SHOWING WILLINGNESS TO RECOMMEND RADIOTHERAPY TO PATIENTS

S/NO	RECOMMENDATION	NUMBER	PERCENTAGE
1	NOT WILLING TO RECOMMEND	73	85.9%
2	WILLING TO RECOMMEND	12	14.1
3	**TOTAL**	**85**	**100%**

FIG 8 BAR CHART



IV. DISCUSSION

Radiotherapy or radiation therapy is a very important cancer management protocol especially in the organ confined and locally advanced stages. Despite its importance, it has several adverse effects which could be:

- Early effects
- Consequential effects and
- Late effects

These adverse effects were responsible for poor public attitude and perceptions ultimately leading to low acceptance.

Over the years, RT has undergone advanced methodology, techniques and biological improvements in order to it safe and more acceptable.

Despite these efforts, attitude and perceptions have remained low especially in people with no previous exposure.

In our work, we found substantial number 85 (65.4%) with prior knowledge of RT while only 45 (34.6%) were ignorant.

Of those who knew, 70 (82.4%) were aware of the adverse effects while only 15 (17.6%) were ignorant of the side adverse effects of RT.

Of the 130 participants, 55 (42.3%) had post-secondary education while 30 (23.1%) had secondary education both groups being quite literate.

Despite these factors, 70 (82.4%) felt RT was very dangerous while 10 (11.8%) felt it was dangerous but not too dangerous, suggesting poor attitude and perception.

Overall, 73 (85.9%) were unwilling to recommend RT to others while only 12 (14.1%) were willing to do so.

This is in sharp contrast to our previous work on people with prior exposure to radiotherapy were we had 79% willing to recommend RT to others while only 13.5% were unwilling to do so.

Jennifer Novak et al, in their work on patient perception to radiation therapy prior to initial consultation with radiation oncologists concluded that 50% of patients reported complete lack of knowledge regarding RT.

27% reported that RT is their most worrisome cancer treatment compared to chemotherapy and surgery. The most common self-reported fears of RT included general side effects, skin burns, pain and organ damage.

The most common frequently reported concerns of physical side effects included pains 67%, memory loss 62%, nausea and vomiting 60% and skin reactions 58%.

62% of respondents reported either being moderately or very concerned about the ability to perform daily activities.

36% of respondents reported at least moderate concern over the financial cost of RT.

26% reported at least moderate concern regarding the transportation to RT.

48% reported concerns about emitting radiation to others.

V. CONCLUSIONS

There is a fairly good knowledge of radiotherapy among the non-exposed persons in Aba but attitudes and perceptions have remained abysmally low.

VI. RECOMMENDATIONS

1. Aggressive campaigns and comprehensive counseling at health seminars will go a long way to educate the public.
2. The use of print and electronic media to disseminate information about radiotherapy and in fact other oncotherapeutic protocols will help educate the public.
3. Aggressive counseling by care givers in hospital settings will help to ameliorate this ugly situation.

REFERENCES

1. Jennifer Novak, Colton Ladbury, Tarig Abuali, Virginia Sun, Mathew J. Loscalzo and Arya Amini.
   Patient perceptions of radiation therapy prior to initial consultation with a radiation oncologist.
   Advances Vol. 10 issue 1, January 2025
2. E.J. Maher
   The influence of National Attitudes on the Use of Radiotherapy in Advanced and Metastatic Cancer, with particular reference to Differences between the United Kingdom and the United States of America. Implications for Future Studies.
3. Sidra, Sidra Siddloye, Fatima Bhyat, Shantec Lewis,
   The Lived Experiences of Radiotherapists Treating Pediatric Patients: Gauteng, South Africa.
   Journal of Medical Imaging and Radiation Sciences, May 26 2022
4. K. Vidhya, Sweety Gupta, R. Lekshmi, Kritika Bhardwaj, K. Kusum, Vasanth C. Kalyani, Amit Gupta,
   Assessment of Patient Knowledge, Attitude and Beliefs about cancer: An Institute – Based Study, J. Educ. Health Promot, 2022, 11.49
5. Yasamin Sharifzapeh, Alexander N. Slade, Elizabeth Weiss, Arnethea L. Sutton and Vanessa B. Sheppard.
   Attitudes and Perceptions Towards Radiation Therapy in Breast Cancer Patients: The Role of a multidisciplinary Care team.
   J cancer Educ. 2021, Jun 36 (3) 639-645
6. K. Sharma, A Malik

Perception, Attitudes and knowledge regarding radiotherapy among physicians at a tertiary care centre
Journal if Current Oncology, 2019 Medicine
7. Ardha, Aarathi, Prathyushar, Nanurala: Atreya, Jijal, Asha, D. Kumari, Sanjeeva.
Knowledge, attitude and practice of radiation oncologists during COVID -19 Pandemic
Journal of Cancer Research and Therapeutics 18 (1), p 214- 219, Jan – Mar 2022.
8. Rasha F. Abdellah, Shaimaa A. Attia, Ahmed M. Fourd, Amani W. Abdel- Halim.
Assessment of physician's knowledge, attitude and practices of radiation safety at Suez Canal University Hospital, Egypt.
Open Journal of Radiology, Volume 5, issue 4, December 2015.
9. Sussan S. Khalil, Henry J. Silverman, May Raata, Samer El- Kamaryi, Magged El- Setouhy.
Attitudes, Understanding and concerns regarding medical research amongst Egyptians: A qualitative Pilot study.
BMC Medical Ethics, 2007
10. Cletus Uche Eze et al
Assessment of Radiation protection practices among radiographers in Lagos, Nigeria .
Niger Med J., 2013 Nov.
11. Samuel Yaw Opoku, Martin Benwell, Joel Yarney.
Knowledge, Attitudes, Beliefs, Behavior and Breast Cancer Screening Practices in Ghana, West Africa.
Pan. Afri. Med. J., 2012
12. Geoffrey F. Soko, Anthony B. Burambo, Mpanda M. Mngoya, Burhani A. Abdul.
Public Awareness and perceptions of radiotherapy and their influence on the use of radiotherapy in Dares Salaam, Tanzania.
JCO Global Oncology, Volume, JGO, 19, 00175.
13. Nuhu Tumba, Sunday Adeyemi- Adewuyi, Kelechi Eguzo, Adeniyi Adenipekun and Ralaaq Oyesegun.
Radiotherapy waiting time in Northern Nigeria: Experience from a resource limited setting.
C. Cancer Medical Science, 2020.
14. Nwankwo, Kenneth Chima, Dawotola, David A., Sharma, Vinay, Radiotherapy in Nigeria current status and future challenges.
West African journal of radiology, 20 (2) p. 84-88, July – Dec 2013.
15. Xingxing Chen, Ruifang Lin, Huifang L.I., Meng S.U., Wenyi Zhang, Xia Deng, Ping Zha and Changun Zou.
Knowledge, attitudes and practices related to pre-operative chemoradiotherapy in Rectal Cancer Patients.
Gastroenterol. Res. Pract. 2016, Sept. 27.
16. E. Onyekunle, B, Akinlade, I. Uwadiae, C. Madu
Awareness and training in medical physics: Avenue to enhance cancer care delivery in a Low Resource setting.
JGO Global Oncology, 2020.
17. E. Onyekunle, B. Akinlade
Assessment of knowledge and attitude of Radiotherapy professionals towards prevention of incidents during treatment in Nigeria.
Medicine, environmental sciences 2023.
18. Jim Leng, B.A., Atard Intekom, Abiola Ibraheem, Chidinma P. Anakwenze, Daniel W. Golden, Olufunmilayo I. Olopade.
Infrastructural Challenges lead to delay of curative radiotherapy in Nigeria.
JGO Glob Oncol 2020 6, JGO 10 00286.
19. Oiza Tessy Ahmadu, Shehu Salihu Umar, Lawal Abubakar Kbai, Desiree Jummai Jimeta, Hadiza Enias Theyva.
Assessment of Knowledge, attitude and utilization of Nuclear medicine imaging among clinical and radiation oncologists in Nigeria.
Journal of medical and basic scientific research, Vol. 4, No. 1-2 (2023).
20. A O.' Donovan, A.O. Herlihy, M. Cunningham.
Knowledge and attitude of radiation therapists and undergraduate students towards older people.
Radiography, vol. 21, issue 3, August 2015, pages c 96-c1-2.