

Oncology as a Career Path: A Nationwide Study of Nigerian Medical Students' Perspectives and Career Interests

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Abstract

Background

Cancer remains a leading cause of mortality globally, with low- and middle-income countries like Nigeria facing high mortality-to-incidence ratios partly due to limited oncology specialist availability.

Understanding medical students' perceptions and interest in oncology is essential for strengthening human resources in oncology. This study assessed the knowledge, attitudes, perceptions, and factors influencing Nigerian medical students' interest in pursuing oncology as a career.

Methods

A descriptive cross-sectional survey was conducted among clinical-year medical students across Nigerian medical schools in the 6 geopolitical zones to evaluate their knowledge, attitudes, perceptions, interest, and factors influencing oncology as a career choice. Data were collected using a validated self-administered questionnaire and analyzed using descriptive statistics, bivariate, and multivariate logistic regression analyses.

Results

A total of 531 respondents participated, with 55.6% female and a mean age of 23.4 years. Although more than 75% were aware of oncology sub-specialties, only 29.2% knew of training programs within their institutions. Overall, 59% had a positive attitude toward oncology, yet only 36.3% expressed high interest and 25% indicated a strong likelihood of pursuing the field. Key facilitators of interest included mentorship (62.0%), research opportunities (62.1%), and Influence of role models (62%) whereas barriers included long training duration (64.2%) and difficulty securing residency (58.9%). Multivariate analysis identified higher knowledge ($p = 0.003$), positive attitude ($p = 0.006$), and family history of cancer ($p = 0.020$) as significant predictors of oncology career interest.

Conclusion

Nigerian medical students demonstrate moderate interest in oncology, influenced by knowledge, personal experience, and educational exposure. Addressing barriers, enhancing oncology education, and strengthening mentorship could foster greater interest to help mitigate the oncology workforce shortage. These findings underscore the need for sustained, targeted interventions to support the development of a robust oncology workforce in Nigeria.

Background

Cancer has been reported as the second leading cause of death globally.^[1] The disease is associated with a bleak prognosis in low and middle-income countries like Nigeria, where access to quality healthcare is scarce, healthcare facilities are substandard, and the number of healthcare workers is dwindling.^[2, 3] The GLOBOCAN report stated that in 2022, Nigeria recorded 127,763 new cancer cases, with 79,542 resulting in death, leading to a mortality-to-incidence ratio of 0.71.^[4] This high mortality rate is attributed to various factors, including late presentation, late-stage diagnosis, limited access to oncologists, high cost of cancer treatment, and inadequate health care infrastructures.^[2] Despite this rising incidence of cancer and the associated high mortality rate, a recent study on Nigeria's oncology workforce revealed that the country has fewer than 70 clinical oncologists, indicating a critical oncology workforce shortage nationwide .^[3, 5]

This highlights the need for increased recruitment of early-career doctors into oncology related fields.^[6] As the cancer burden continues to rise, more cancer specialists and researchers will be needed to meet the demand. Several studies have highlighted the disparity between the rate of cancer incidence and the availability of oncologists.^[7, 8] Various projections indicate that even high-income countries like the United States will face a shortage of oncologists by 2025.^[9] This is further substantiated by the Global Survey of Clinical Oncology Workforce's study which revealed that in 25 African countries, including Nigeria, which represents 78% of the countries surveyed, there were more than 1,000 new cancer cases per clinical oncologist.^[8] A global look at the workload of medical oncologists shows that in low- and middle-income countries, 58 out of the 147 oncologists surveyed see more than 500 new cancer patients each year. Additionally, 30 of them handle over 50 patients on clinic days, leaving little time for doctor-patient interaction.^[10] This highlights the urgent need to strengthen the oncology workforce, especially in LMIC countries like Nigeria.

Medical students' career choices significantly impact the future distribution of the workforce across medical specialties.^[11] Studies have identified several factors that influence these decisions, including pre-admission experiences, medical school exposure, and post-graduation influences. These factors include personal interest, family and peer influence, financial remuneration, training duration, stress during residency, and mentorship.^[11–13] A study of 457 final-year medical students in Southeastern Nigeria found that 51.8% decided on their specialization during their clinical years. This was attributed to increased exposure to different specialties.^[11]

There is a significant paucity of literature on how Nigerian medical students perceive oncology as a career option.^[6] This gap leaves policymakers without the information needed to make necessary curriculum changes that could address the imbalance between doctor availability and patient needs. This study aims to explore the knowledge, attitudes, perceptions, interest, and factors influencing career choices among Nigerian medical students regarding oncology as a field of specialization.

Methods

Study design

This study was a descriptive cross-sectional survey conducted among medical students across Nigeria. It aimed to evaluate their perceptions, level of interest, and factors influencing their career choices in oncology.

Study population (inclusion and exclusion criteria)

The study population comprised clinical-year medical students (400–600 level) enrolled in Nigerian medical schools. Nigerian medical education follows a standardized curriculum, with three years of preclinical coursework followed by three years of clinical training. This ensures that students at the clinical level have had some exposure to oncology and can meaningfully respond to questions about the specialty.^[11] Participants eligible for the study included medical students in the clinical years who were currently enrolled in a Nigerian university and provided informed consent. Preclinical students, those in 100–300 level, were excluded due to their limited exposure to clinical oncology. Additionally, transfer or exchange students from foreign institutions were excluded, as their perceptions might be influenced by different educational systems and medical training structures.

Sample size and recruitment

The sample size was determined using Leslie Fisher's formula, based on a 95 percent confidence level and a 27% estimated proportion of medical students considering a career in oncology from previous studies.^[14] This calculation yielded a minimum sample size of 303, which was adjusted to 333 to account for a 10 percent non-response rate. Given that Nigeria has 47 medical schools, including 37 fully accredited and 10 partially accredited institutions, a collaborative authorship approach was used to facilitate participant recruitment.^[11] Medical student collaborators were recruited through medical student associations, social media platforms, and institutional bulletins. Each collaborator was responsible for securing at least 25 responses or 5 percent of the total clinical-year students in their institution, whichever was lower. Collaborators who met this requirement and actively contributed to the dissemination of the survey and data collection were recognized as authors in this study.

Research instrument

A self-administered questionnaire was developed following an extensive literature review to ensure alignment with the study objectives.^[6, 11–17] The questionnaire was divided into six major sections: sociodemographic characteristics, knowledge of oncology, attitude toward oncology as a specialty, perception of oncology as a career choice, interest in the field, and factors influencing career choice.

The questionnaire was designed in English, the official language of medical education in Nigeria. To ensure content validity, the questionnaire was reviewed by an oncologist and a public health specialist,

who evaluated the clarity, relevance, and structure of the survey items. Additionally, a pilot test was conducted with a small group of medical students to refine question phrasing and format. The Cronbach's alpha value (α) was 0.87. The final version of the questionnaire administered to participants is available as Supplementary Material 1.

Data collection

Data collection was conducted anonymously via Kobo Toolbox to ensure confidentiality and reduce response bias. All participants were informed that participation was voluntary, and they could withdraw at any time without consequences. To further minimize bias, student collaborators were trained on ethical recruitment strategies and instructed to avoid coercion or influence. Participants completed the questionnaire independently, reducing the likelihood of external bias.

Data analysis

Survey responses were exported from Kobo Toolbox to Excel and analyzed using SPSS version 25.0. Descriptive statistics were used to summarize demographic characteristics, knowledge, attitude, perceptions, career aspirations, and factors. Bivariate analysis was conducted to explore associations between variables, while multivariate logistic regression was performed to identify key predictors of students' likelihood of pursuing oncology as a career.

Ethical approval

Ethical approval for this study (ERC/2025/01/03) was obtained from the Obafemi Awolowo University Teaching Hospitals Complex's Ethics and Research Committee (IRB/IEC: Z0004553/NHREC/17/03/2021).

Consent to Participate

Participation was voluntary, and written informed consent was obtained from all participants before completing the questionnaire. Confidentiality and anonymity were ensured by excluding personal identifiers.

Results

Sociodemographic features of respondents

A total of 531 respondents were enrolled, and the sociodemographic features of the respondents are represented in Table 1. The mean age of the respondents was 23.4 ± 2.7 years, with the females accounting for 55.6% of the participants. The majority (69.7%) of respondents held only a high school certificate as their highest qualification, while 29.8% had a bachelor's degree and 0.6% held a postgraduate degree at the time of data collection. Respondents were selected from all the geopolitical zones with the South-South being the most represented (33.3%), followed by South-West (23.9%). About

37.1% of the respondent were in their fifth year, 35.2% in their fourth year, and 27.7% in their sixth year. Also, 18.5 percent reported a family history of cancer.

Table 1: Sociodemographic features of respondents

Variable	N (%)
Gender	
Male	236 (44.4)
Female	295 (55.6)
Nationality	
Nigerians	530 (99.8)
Cameroonian	1 (0.2)
Highest level of education	
Secondary education	370 (69.7)
Bachelor's degree	158 (29.8)
Postgraduate (Master's/Doctorate)	3 (0.6)
Current level in university	
400	187 (35.2)
500	197 (37.1)
600	147 (27.7)
Geopolitical distribution of medical schools	
South-East (SE)	127 (23.9)
South-South (SS)	177 (33.3)
South-West (SW)	127 (23.9)
North-Central (NC)	26 (4.9)
North-East (NE)	48 (9.0)
North-West (NW)	26 (4.9)
Family history of cancer	
Yes	98 (18.5)
No	433 (81.5)

Knowledge and attitude towards oncology practice among the respondents

Their attitude towards oncology practice is also represented in Figure 1. The respondents had varying levels of knowledge of oncology subspecialties. The majority of the respondents knew about surgical oncology (77.4 percent), medical oncology (77.0 percent), and radiation oncology (79.5 percent). However, only 60.3% of the respondent knew that oncology training is available in Nigeria, with only 29.2% being aware of oncology training at their institution. Also, only 9.2% knew the duration of oncology training in Nigeria. Most respondents (59%) had a positive attitude toward oncology, 36% were neutral, and 5% had a negative attitude.

Perceptions of Oncology Among Respondents

The perception of oncology among the respondents is represented in Figure 2.

Workplace Environment and Work-Life Balance

The majority of respondents (64.4%) were uncertain about the work-life balance in oncology, with 20.4% believing that it is reasonable compared to other specialties. Also, 68.4% were neutral about well-regulated working hours in oncology practice.

Also, 53.9% of the respondents were neutral about whether oncology is a male-dominated field, while 12.6%, however, agreed. A notable concern was the perceived inadequacy of facilities for oncology training, with 78.0% agreeing to this.

Nature of Work and Radiation Exposure Concerns

A major concern of the respondents was radiation exposure, as 83.2% agreed that it is a significant risk in oncology. Also, 63.3% of the participants believed that poor patient prognoses negatively impact career choices.

Emotional Aspects of Oncology

About 45.6% of the respondents viewed oncology as a depressing specialty, with only 13.6% disagreeing. Also, 42.7% of the respondents felt that long-term patient relationships could lead to emotional exhaustion. The high proportion of neutral responses by the participants suggests uncertainty or limited direct exposure to the specialty.

Career Prospects and Advancement of the Field

Concerns about job saturation were minimal, with 44.6% of the respondents disagreeing that oncology has limited job opportunities and just 11.9% agreeing. Also, oncology was widely recognized as a rapidly evolving, research-driven field, with 80.0% of respondents acknowledging its advancements.

Future Prospects and Career Aspirations

At the time of the study, only 36.3% of respondents reported a high interest in oncology, while the majority (63.7%) expressed low interest, and 8.7% reported no interest at all. The likelihood of pursuing oncology as a career showed a similar trend: most respondents indicated a low likelihood of pursuing oncology as a career (60.5%), with only 25.0% expressing a high likelihood. When interest was disaggregated by subspecialty (Table 3.2), research-oriented pathways were the most preferred, with 32.2% and 26.0% of students indicating high interest in clinical research and scientific research, respectively. Radiation oncology ranked lowest overall, with the largest proportion of respondents reporting no interest (22.6%).

Table 3.1: Future Prospects and Career Aspirations

Variable	N (%)
<i>(Using a scale of 0 – 10, 0 = No interest and 10 = Highest level of interest)</i>	
Interest in oncology at the time of this study	
No interest	46(8.7)
Low interest	338(63.7)
High interest	193(36.3)
<i>a = Mean ± SD: 2.99 ± 2.68, Median: 3.00; b = Mean ± SD:4.67 ± 2.66; Median: 5.00</i>	
Likelihood of pursuing oncology as a career	
No likelihood	77(14.5)
Low likelihood	321(60.5)
High likelihood	133(25.0)
<i>Mean ± SD: 3.85 ± 2.76, Median: 5.00</i>	

Table 3.2: Preferred career pathways in oncology

Oncology subspecialty	No interest	Low interest	Moderate interest	High interest
Clinical oncology	18.3	32.2	35.2	14.3
Medical oncology	16.6	30.9	37.5	15.1
Surgical oncology	17.7	24.7	35.6	22.0
Radiation oncology	22.6	31.6	31.4	14.3
Clinical research	13.0	23.4	31.4	32.2
Scientific research	14.7	23.2	36.2	26.0

Facilitators and barriers of oncology as a career choice

The identifiable facilitators and barriers are represented in Table 4.

Facilitators

Among all the identified potential facilitatory factors influencing oncology as a career choice, the most influential factors were opportunities for research and academic career development (62.1%) and the influence of role models, senior specialists, and mentors (62.0%). Interestingly, 61.2% considered the shortage of oncology specialists in Nigeria as a reason to pursue the field. Also, 57.6% of respondents cited motivation during clinical rotations (for schools that have oncology rotations) as a significant influence.

Barrier Factors

Some barriers to pursuing oncology as a career were also noted. About 58.9% of respondents indicated that difficulty in securing residency placement was a major concern. Additionally, 64.2% of the respondents believed that oncology training takes longer compared to other specialties like radiology, internal medicine, etc. Also, 61.2% found the residency program too rigorous.

Table 4: Facilitators and Barriers Factors Influencing Oncology as a Career Choice

Factors	Agree N% %)	Neutral N (%)	Disagree N (%)
Facilitators			
Motivation during clinical rotations or mentorships	306 (57.6)	192 (36.2)	33 (6.2)
Influence of role models, senior specialists, and staff support	329 (62.0)	171 (32.2)	31 (5.8)
Influence from family	202 (38.0)	233 (43.9)	96 18.1)
Influence from peers	160 (30.1)	271 (51.0)	100 (18.8)
Guarantee of a lucrative salary and financial benefits	273 (51.4)	214 (40.3)	44 (8.3)
Multiple job opportunities, job security, and self-employment	294 (55.4)	205 (38.6)	32 (6.0)
Shortage of specialists in the country	325 (61.2)	175 (33.0)	31 (5.8)
Intellectual content of specialty/intellectual challenge	269 (50.7)	238 (44.8)	24 (4.5)
Structured lifestyle: minimizing unnecessary calls, shorter working hours, and flexible scheduling	258 (48.6)	236 (44.4)	37 (7.0)
Prestige or high social status	190 (35.8)	281 (52.9)	60 11.3)
Focus on long-term care	223 (42.0)	258 (48.6)	50 (9.4)
Potential for research and career development in academic teaching	330 (62.1)	186 (35.0)	15 (2.8)
Barriers			
Difficulty in securing residency placement	179 (33.7)	313 (58.9)	39 (7.3)
The duration of training is longer compared to other specialties	150 (28.2)	341 (64.2)	40 (7.5)
Rigors of the residency program	168 (31.6)	325 (61.2)	38 (7.2)
Unacceptable hours of practice	149 (28.1)	327 (61.6)	55 (10.4)
Professional isolation	176 (33.1)	290 (54.6)	65 (12.2)

Lack of work-life balance	162 (30.5)	308 (58.0)	61 (11.5)
Being an oncologist will affect my plans to have a family	61 (11.5)	295 (55.6)	175 (33.0)

Bivariate analysis

Several bivariate analyses are summarized in Table 5. The knowledge score was positively associated with the level in school (ANOVA: $F = 16.257$, $p < 0.001$) and age ($\rho = 0.211$, $p < 0.001$), indicating that there is a progressive increase in oncology knowledge as students advance through medical school. The knowledge score also correlated with the attitude score ($\rho = 0.133$, $p = 0.002$) and the likelihood of pursuing oncology ($F = 5.984$, $p = 0.03$). The attitude score was significantly associated with the likelihood of pursuing oncology as a career (Kruskal-Wallis: $\chi^2 = 17.004$, $p < 0.001$), and students with a family history of cancer demonstrated higher attitude scores (Mann-Whitney $U = 17,383.5$, $p = 0.004$). They were also more inclined to considering oncology as a career (Chi-square = 8.781, $p = 0.012$). Interest was also associated with the likelihood of pursuing oncology as a career ($\chi^2 = 290.660$, $p < 0.001$). There was no statistically significant association between gender, geopolitical zone, or marital status and the likelihood of pursuing oncology as a career ($p > 0.05$ for all).

Table 5: Bivariate Analysis

Variable 1	Variable 2	Correlation coefficient/ Test statistic (ρ)	p-value
Family history of cancer	Likelihood of pursuing oncology as a career	8.781 ¹	0.012
Interest in oncology at the time of this study		290.660 ¹	0.000
Knowledge score	Current level in school	16.257 ²	0.000
	Likelihood of pursuing oncology as a career	5.984 ²	0.03
Knowledge score	Age	0.211 ³	0.000
	Attitude score	0.133 ³	0.002
Attitude score	Likelihood of pursuing oncology as a career	17.004 ⁴	0.000
Attitude score	Family history of cancer	$U = 17,383.5$ ⁵	0.004
¹ = Chi-Square; ² = ANOVA; ³ = Spearman's correlation; ⁴ = Kruskal-Wallis Test, ⁵ = Mann-Whitney U Test			

Multivariate Analysis

A multinomial logistic regression was conducted to identify predictors of students' likelihood of pursuing oncology as a career, using "no likelihood" as the reference category. The results are presented in Table 6. The model indicated that knowledge score, attitude score, level in school, family history of cancer, and prior interest in oncology were significant predictors. Students with higher knowledge ($B = 0.271, p = 0.003$) and attitude scores ($B = 0.298, p = 0.006$) were more likely to express a strong likelihood of pursuing oncology. Fourth-year students were over 2.7 times more likely to demonstrate this high likelihood compared to final-year students ($B = 1.016, p = 0.015, \text{Exp}(B) = 2.76$). Those without a family history of cancer were significantly less likely to express either low ($B = -1.169, p = 0.019$) or high ($B = -1.233, p = 0.020$) likelihood, highlighting the influence of personal experience. Before conducting the multinomial logistic regression, multicollinearity among the independent variables was assessed using the Variance Inflation Factor (VIF). All VIF values were below 5, indicating no significant multicollinearity.

Table 6: Multivariate Analysis

Outcome Category	Predictor	B	Std. Error	Wald	df	Sig. (p)	Exp(B)	95% CI for Exp(B)
Low livelihood	Intercept	0.499	1.654	0.091	1	0.763	–	–
	Age	-0.005	0.057	0.007	1	0.933	0.995	0.889 – 1.114
	Knowledge score	0.104	0.072	2.063	1	0.151	1.110	0.963 – 1.279
	Attitude score	0.150	0.088	2.929	1	0.087	1.162	0.978 – 1.379
	Family history: No	-1.266	0.489	6.704	1	0.010	0.282	0.108 – 0.735
	Family history: Yes	0 ^b			0			
	Current level in school: 400	0.624	0.379	2.705	1	0.100	1.866	0.887 – 3.922
	Current level in school: 500	0.272	0.325	0.703	1	0.402	1.313	0.695 – 2.482
	Current level in school: 600	0 ^b			0			
High livelihood	Intercept	-4.528	1.840	6.055	1	0.014	–	–
	Age	0.071	0.062	1.306	1	0.253	1.073	0.951 – 1.212
	Knowledge score	0.258	0.085	9.146	1	0.002	1.294	1.095 – 1.530
	Attitude score	0.318	0.104	9.414	1	0.002	1.375	1.122 – 1.685
	Family history: No	-1.387	0.518	7.160	1	0.007	0.250	0.090 – 0.690
	Family history: Yes	0 ^b			0			
	Current level in school: 400	0.996	0.424	5.525	1	0.019	2.707	1.180 – 6.211
	Current level in school: 500	0.193	0.375	0.266	1	1.213	0.582	2.529
	Current level in school: 600	0 ^b			0			

1. The reference category is: No interest

2. This parameter is set to zero because it is redundant (reference category).

DISCUSSION

This study provides critical insights into the interests and predictors of Nigerian medical students regarding oncology as a career path.

Knowledge of oncology practice as a career among respondents

The study indicates that while students are reasonably aware of oncology subspecialties, their knowledge of available oncology training programs in Nigeria is limited. These results reinforce earlier Nigerian studies which highlighted a general lack of awareness regarding less commonly chosen medical specialties.^[11,13,18] In contrast, studies conducted in developed countries like France reported higher levels of awareness, likely due to better-established training pathways and structured career guidance.^[15]

Attitude of the respondents towards oncology practice

The overall attitude of respondents toward oncology was largely positive, with more than half expressing a favorable view, while about one-third remained neutral, and a small minority held a negative attitude. This stands in contrast to findings from a UK-wide study, where students reported mainly a negative view of oncology practice.^[16] This may be due to the high tendency of medical students to modify their attitude as they rotate through different specialties.

Perceptions of Oncology as a Career

The findings reveal that students have mixed perceptions about oncology. Concerns about radiation exposure, emotional exhaustion, and inadequate facilities were prevalent. Similar concerns have been documented in studies from Pakistan and France, where students cited emotional strain and poor patient prognoses as significant deterrents.^[15,17] This perception parallels Nigerian studies where demanding fields such as surgery and internal medicine were also less favored due to work–life balance concerns.^[11,12] The fact that a significant proportion of respondents remained neutral about work-life balance in oncology suggests that many may have had limited direct exposure to the field, making it difficult to form a strong opinion.^[19,20]

Interest in Oncology and Career Aspirations

The findings indicate that medical students' interest in oncology, while generally positive, is largely moderate. At the time of the study, only a small proportion of students expressed no interest in the field, whereas the majority reported low interest, and just over one-third reported high interest (Table 3.1). A similar pattern emerges in the likelihood of pursuing oncology as a career. While outright disinterest was limited, the predominance of low likelihood scores indicates that interest does not necessarily translate

into a strong commitment to specialization. A comparable trend has been observed internationally, where oncology is often viewed as demanding and uncertain in terms of career prospects. For instance, studies in Pakistan and the UK reported limited enthusiasm for oncology careers among early-career medical trainees, often due to perceived challenges and restricted opportunities.^[15–17]

Among oncology pathways, students expressed the strongest interest in research-oriented roles, including clinical and scientific research, followed by surgical oncology. Medical and clinical oncology were of moderate interest, while radiation oncology had the highest proportion of low interest (Table 3.2). This preference for research and surgical pathways may reflect greater exposure to these areas during medical training or an appreciation of their perceived impact and innovation potential. Compared with previous studies, these findings suggest a subtle shift in student priorities toward roles that combine scientific inquiry with clinical application, reflecting a growing orientation toward the physician-scientist paradigm.^[21,22]

Factors Influencing Career Choice in Oncology

Both facilitatory and barrier factors significantly influence students' career decisions. The availability of research opportunities, mentorship from senior specialists, and the shortage of oncologists in Nigeria were key motivators. A study from France highlighted similar result where interest in research and mentorship strongly influenced oncology career choices.^[15] On the other hand, barriers like difficulty in securing residency and the rigorous nature of training were notable deterrents. Similar findings have been reported in Nigerian studies on specialty preferences, where challenging residency programs discouraged students from selecting demanding fields.^[12,23]

Predictors of Oncology Career Interest

The study identified both personal and academic factors that shape medical students' likelihood of pursuing a career in oncology. The result was consistent with prior studies, which also showed that knowledge, respondents' level in school, attitude scores, and family history of cancer were significant predictors of the likelihood of pursuing an oncology career. Students with higher oncology knowledge tended to have more favorable attitudes, and both variables independently increased the likelihood of considering oncology as a career.^[12,15,24] This suggests that knowledge and perception are mutually reinforcing, highlighting the need for improved oncology education within the medical curriculum. Strengthening teaching content and providing more structured clinical exposure may help foster interest and counteract negative perceptions of the specialty.

Personal factors also played a critical role. Students with a family history of cancer demonstrated greater interest and more positive attitudes toward oncology, and they were more likely to express career intentions in this field. This supports the notion that personal experiences with illness can strongly influence specialty choice, likely by fostering empathy and a deeper appreciation of the oncologist's role.

Designing educational initiatives that make oncology more personally relevant, even for students without direct exposure, may therefore be an important strategy.

Another notable finding was the influence of academic progression. Fourth-year students, who are at the stage of transitioning from preclinical to clinical training, were more likely than final-year students to express strong intentions to pursue oncology. This pattern may reflect initial enthusiasm generated by early clinical exposure, which diminishes as students advance and confront systemic barriers such as exposure differences, burnout, realities of medical residency, limited training opportunities, lack of role models, or perceptions of poor work–life balance in oncology. Similar trends have been reported in studies from other low- and middle-income countries, where interest peaks in mid-training and wanes toward graduation.^[16,17] This highlights the need for sustained mentorship and career guidance throughout medical school, rather than brief exposure at isolated stages.

Demographic factors such as gender, marital status, and geopolitical background did not show significant associations, suggesting that career intentions in oncology are driven more by experiential and educational influences than by demographic characteristics. From a workforce planning perspective, these findings emphasize that interventions targeting education, mentorship, and early exposure are likely to be more effective in strengthening the oncology pipeline than demographic targeting.

Overall, the results indicate that both academic progression and personal experiences contribute meaningfully to shaping students' oncology career intentions. Knowledge, attitudes, family history of cancer, and level in school are particularly influential. These findings underscore the need for early and sustained strategies to inspire interest in oncology, supported by stronger curricular content and mentorship opportunities, to address the growing cancer workforce gap.

Strengths and Limitations

One strength of this study is its large, diverse sample, including medical students from various geopolitical regions in Nigeria. This provides a comprehensive understanding of perceptions toward oncology. Additionally, the study also offers insights into the predictors of career interest.

However, certain limitations must be acknowledged. The study relies on self-reported data, which may introduce response bias. Also, the cross-sectional design limits the ability to establish causal relationships between factors influencing oncology career interest. Future longitudinal studies would be beneficial to track changes in career preferences over time.

Conclusion and Recommendations

This study underscores the need for targeted interventions to enhance awareness of oncology and career interest among Nigerian medical students. Increased exposure to oncology through clinical rotations, curriculum reforms, structured mentorship programs, and improved residency opportunities could help address these challenges. Tackling concerns about work-life balance, emotional strain, and

radiation exposure through educational initiatives may also help reshape perceptions of the field. Further research is necessary to explore long-term career choices among Nigerian medical graduates and to identify strategies for promoting a more balanced distribution of specialists in line with national health needs.

Declarations

Author Contributions Statement

B.T.O. and O.O.O. conceived and designed the study, developed the study instrument, performed data analysis, interpreted the results, and drafted the manuscript. I.G.O., B.J.U.-O., V.U.N., F.C.O., F.J.B., B.O.E., A.A., J.C.U., M.O.A., T.F.M., and O.R.E. participated in data collection across study sites. O.O. provided conceptual guidance and supervision throughout the study and critically reviewed the manuscript. All authors reviewed and approved the final version of the manuscript and agree to be accountable for all aspects of the work.

Consent to participate

Written informed consent was obtained from all participants, and anonymity was maintained through numerical coding

Human ethics

Ethical approval for this study (ERC/2025/01/03) was obtained from the Obafemi Awolowo University Teaching Hospitals Complex’s Ethics and Research Committee (IRB/IEC: Z0004553/ NHREC/17/03/2021). All participants provided informed consent before enrollment, and the study was conducted in accordance with the principles outlined in the Declaration of Helsinki and its subsequent amendments. Confidentiality and anonymity were ensured by excluding personal identifiers.

Consent for publication

Not applicable

Clinical trial number

Clinical trial number: not applicable

Availability of data and materials

The datasets generated and analysed during the study are available from the corresponding author on request.

Competing interest

The authors declare that they have no conflicts of interest.

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Figures

Attitude of medical students toward oncology as a specialty

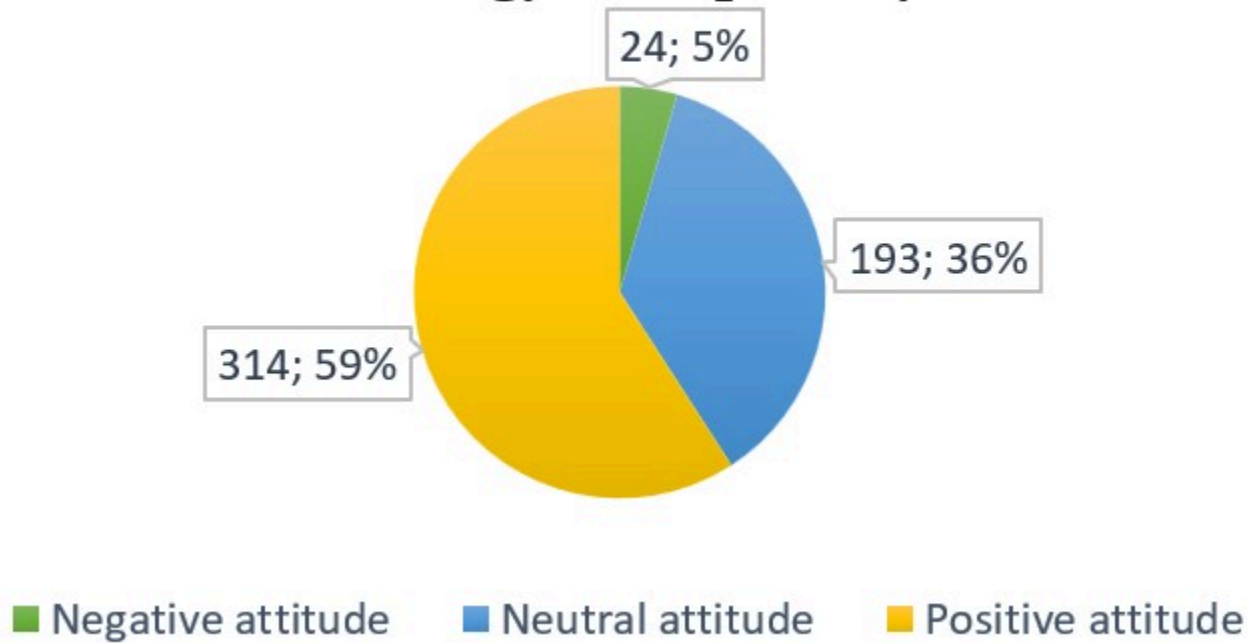


Figure 1

Attitude towards oncology practice among the respondents

Perceptions of Oncology Among Respondents

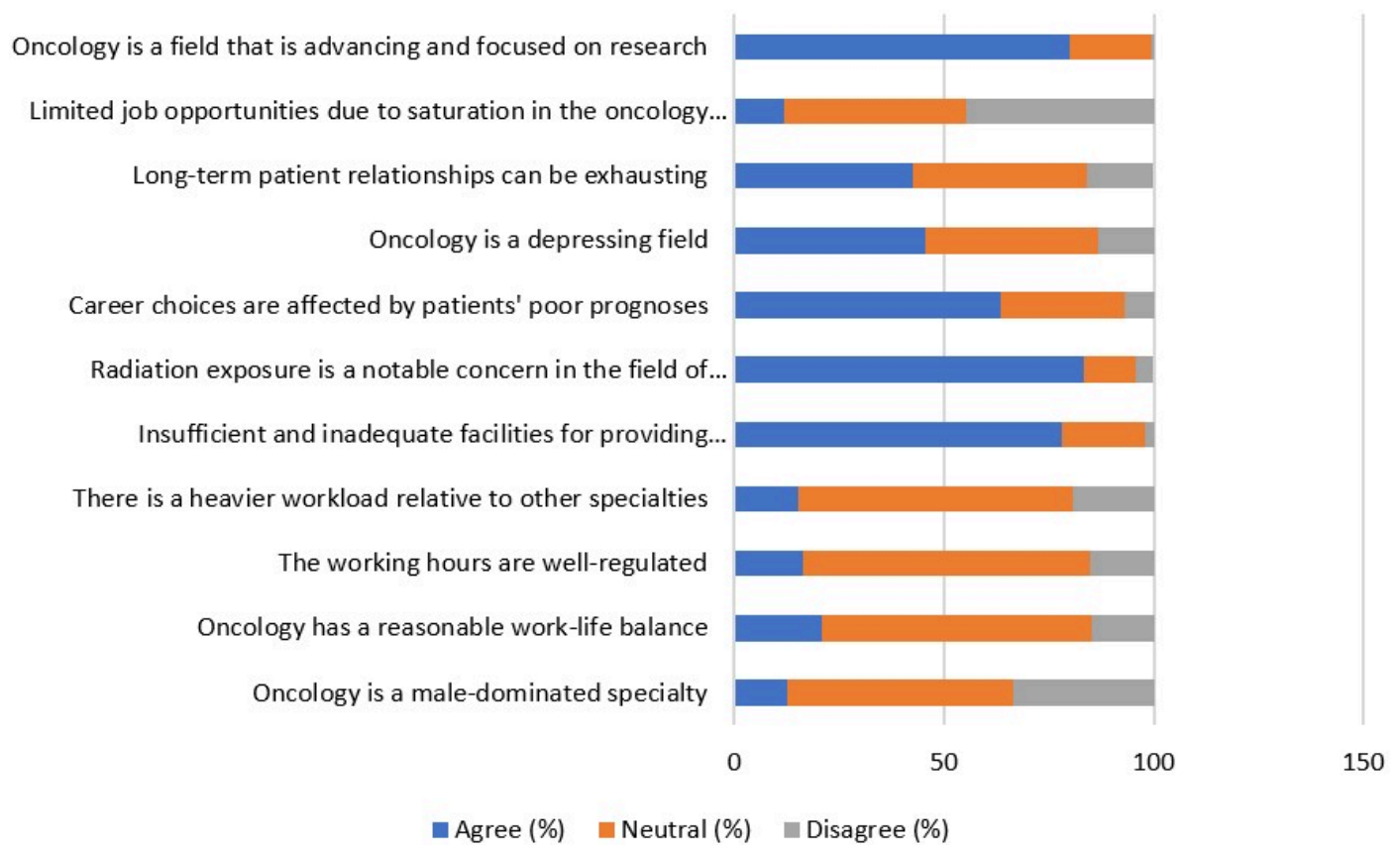


Figure 2

Perceptions of Oncology Among Respondents

Supplementary Files

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- [Questionnaire.pdf](#)