Emotional Burnout and Job Satisfaction among Oncology Residents in Nigeria: A Cross-Sectional Study

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ABSTRACT

Background

Oncology residency training is associated with high emotional and professional demands, predisposing trainees to burnout. In low- and middle-income countries such as Nigeria, systemic challenges may further increase this risk. This study assessed emotional burnout and job satisfaction among oncology residents in Nigeria and identified associated factors.

Methods

A multicentre cross-sectional study was conducted among oncology residents across seven accredited tertiary institutions in Nigeria. Data were collected using a structured self-administered questionnaire incorporating the Maslach Burnout Inventory and the Job Satisfaction Survey. Descriptive statistics, correlation analysis, and regression models were used to evaluate associations between burnout, job satisfaction, and sociodemographic variables.

Results

A total of 57 residents participated (mean age 33.7 ± 4.9 years; male: female = 2.2:1). Emotional exhaustion was high (3.50 ± 0.82), while depersonalization and personal accomplishment were moderate. Overall job satisfaction was moderate (3.12 ± 0.84), with high satisfaction in supervisor support and co-worker relationships but lower satisfaction with work environment. Emotional exhaustion showed a strong negative correlation with job satisfaction ($r = –0.61$, $p < 0.001$). Early-year residents had significantly higher burnout ($p = 0.022$). Female gender predicted lower job satisfaction ($p = 0.046$). Low job satisfaction, poor work environment, and long working hours were significant predictors of burnout.

Conclusion

Oncology residents in Nigeria experience substantial emotional burnout, particularly in early training years. While interpersonal support is strong, systemic factors such as workload and work environment drive burnout. Targeted institutional interventions are needed to improve resident well-being and sustain the oncology workforce.

Keywords: Burnout, Oncology residents, Well-being, Job satisfaction, Emotional exhaustion, Healthcare workforce, Occupational stress

Running title: Emotional Burnout and Job Satisfaction Among Oncology Residents

INTRODUCTION

Oncology residency training in Nigeria is designed to equip physicians with the clinical competencies, research skills, and professional judgment required for specialist cancer care. This training typically spans five to six years and includes clinical rotations in radiation oncology, medical oncology, surgical oncology, and

haemato-oncology, complemented by didactic learning, research engagement, and supervised patient management.(1) While oncology training offers unique opportunities for professional development and contribution to patient survival, it also exposes residents to emotionally challenging and intellectually demanding clinical environments.

Burnout is a psychological syndrome arising from chronic work-related stress, which has garnered increasing attention as a major occupational health concern among physicians. The World Health Organisation (WHO) defines burnout as an "occupational phenomenon" characterised by emotional exhaustion, mental distance from work (cynicism), and reduced professional efficacy.(2) In foundational conceptual work, Maslach and Jackson described burnout as characterised by emotional exhaustion, depersonalization, and reduced personal accomplishment, particularly among professionals engaged in human services.(3–5) These dimensions reflect both affective strain and cognitive disengagement, with implications for individual function and workplace performance.

Physician burnout is widespread across specialties and health systems globally. A large systematic review reported burnout prevalence estimates up to 80% among practising physicians, with higher rates in high-intensity specialties such as oncology, emergency medicine, and critical care (6,7). The complex interplay of long work hours, heavy on-call responsibilities, emotionally charged patient care, and high administrative burden contributes to sustained stress exposure (8). Among oncology clinicians, frequent engagement with life-threatening diagnoses, complex treatment decisions, and patient suffering may further intensify emotional strain and depersonalization (4,9).

In low- and middle-income countries (LMICs) such as Nigeria, burnout risk may be heightened by additional systemic constraints, including workforce shortages, inadequate infrastructure, and high patient volumes. Studies in Nigerian tertiary hospitals have documented burnout prevalence exceeding 70% among resident doctors in high-stress clinical departments, with emotional exhaustion and depersonalization being the most prominent components (10,11). These findings align with regional research indicating that limited resources, excessive workload, and minimal institutional support are significant predictors of burnout in LMIC healthcare settings (12).

Job satisfaction refers to how positively individuals feel about their work roles and is closely linked to burnout. It is also an important factor in physician retention, performance, and career sustainability. Lower job satisfaction has been connected to higher turnover intentions, reduced quality of care, and a greater likelihood of professional attrition (13). In oncology, where the emotional demands of patient care are especially intense, job satisfaction may be affected not only by workload but also by perceptions of professional growth, personal support, and work-life balance. Studies have demonstrated that physicians experiencing burnout are significantly more likely to report job dissatisfaction and consider leaving practice (4,5).

Gender differences in burnout and job satisfaction have also been observed in the medical workforce. Research suggests that female physicians may experience higher emotional exhaustion and lower job satisfaction, often due to competing professional and familial responsibilities, unequal career advancement opportunities, and workplace cultural factors that disadvantage women (14,15). These disparities are important for understanding how organisational structures and social expectations intersect with burnout risk.

Residency training itself is a critical period of vulnerability. The transition from medical student to clinical resident entails substantial increases in responsibility, exposure to high-acuity cases, and often insufficient sleep, all of which contribute to stress and psychological strain. Qualitative and quantitative studies report that junior trainees experience a steep learning curve, feelings of inadequacy, and heightened emotional stress as they adapt to the demands of clinical practice (16). International studies among oncology residents in Europe, Asia, and the Middle East have documented high burnout prevalence and identified key predictors, including workload intensity, the emotional demands of cancer care, and organisational stressors (17,1).

Despite the critical importance of resident well-being, there remains a paucity of research specifically focused on burnout and job satisfaction among oncology residents in Nigeria. While general studies among Nigerian trainees highlight high burnout levels, they do not capture the unique stressors of oncology training. Furthermore,

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cultural expectations, hierarchical training structures, and resource limitations in Nigeria may influence resident experiences in ways not fully explored in existing literature.

Given this context, the present study aimed to evaluate emotional burnout and job satisfaction among oncology residents in Nigeria, and to identify demographic, training-related, and institutional factors associated with these outcomes. By understanding how burnout and satisfaction manifest in this population, stakeholders can better design targeted interventions to support resident well-being, enhance training experiences, and strengthen the future oncology workforce in Nigeria.

METHODS

Study Design: This was a multicenter cross-sectional study conducted among oncology residents undergoing specialist training in Nigeria.

Study Setting and Population: The study population comprised resident doctors enrolled in accredited oncology training programs in tertiary institutions across Nigeria.

Inclusion and Exclusion Criteria:

Inclusion Criteria: Eligible participants were resident doctors currently undergoing oncology training in the participating accredited tertiary institutions in Nigeria during the study period. Residents who provided informed consent and completed the questionnaire were included in the study.

Exclusion Criteria: Residents who declined participation, did not provide informed consent, or submitted incomplete questionnaires were excluded from the analysis.

The questionnaire was pilot tested among a small group of oncology residents at UCH before the main survey to ensure its clarity and relevance.

Sampling and Sample Size Determination: A purposive institutional sampling approach was used to ensure representation from the country's major geopolitical regions. Questionnaires were distributed to oncology residents across the various teaching institutions, and all eligible residents during the study period were invited to participate. Participation was voluntary. Institutions with participants who completed questionnaires and returned them included University College Hospital (UCH), Ibadan; Lagos University Teaching Hospital (LUTH), Lagos; Ahmadu Bello University Teaching Hospital (ABUTH), Zaria; University of Benin Teaching Hospital (UBTH), Benin City; Delta State University Teaching Hospital (DELSUTH), Oghara; Jos University Teaching Hospital (JUTH), Jos; and University of Nigeria Teaching Hospital (UNTH), Enugu.

The total number of oncology residents in training at the time of this study was 93 across the 7 participating institutions. The final sample size was determined by the number of completed questionnaires returned, an approach commonly used in multi-institutional survey studies where response rates may vary across institutions. A total of 57 residents completed the survey (61.3% response rate) and were included in the final analysis.

Data Collection: Data were collected using a structured, self-administered questionnaire designed to assess demographic characteristics, burnout levels, and job satisfaction among oncology residents.

Burnout Assessment: Burnout was assessed using the Maslach Burnout Inventory – Human Services Survey, a widely validated instrument for measuring occupational burnout among healthcare professionals. The tool evaluates three domains: emotional exhaustion, depersonalization, and personal accomplishment. Responses were rated on a 7-point Likert scale ranging from 0 (never) to 6 (every day). Scores for each domain were categorised into low, moderate, or high levels of burnout according to established cut-off thresholds.

Job Satisfaction Assessment: Job satisfaction was measured using the Job Satisfaction Survey, a validated 36-item instrument that assesses nine dimensions of workplace satisfaction, including pay, promotion, supervision, benefits, operating conditions, co-workers, nature of work, communication, and contingent rewards. Each item was rated on a 6-point Likert scale, with higher scores indicating greater job satisfaction.

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Survey Administration: The questionnaire was administered electronically using Google Forms and distributed to oncology residents through professional mailing lists and WhatsApp groups between January and December 2025. Participation was voluntary and anonymous. Electronic informed consent was obtained from all participants before they could access the questionnaire.

Ethical Considerations: Ethical approval for the study was obtained from the Institutional Review Board of the University College Hospital, Ibadan. Assigned no: UI/EC/24/0685.

Participation was voluntary, and respondents' confidentiality and anonymity were maintained throughout the study.

Data Analysis: Data were analysed using IBM SPSS Statistics version 25. Descriptive statistics were used to summarise demographic characteristics, burnout scores, and job satisfaction levels. Continuous variables were presented as means and standard deviations, while categorical variables were summarised as frequencies and percentages. Associations between burnout dimensions and job satisfaction were assessed using Chi-square tests and, where appropriate, correlation analyses. A p-value < 0.05 was considered statistically significant.

Of the total oncology residents invited to participate, 57 completed the questionnaire and were included in the final analysis.

RESULTS

A total of 57 oncology residents participated in the study. The mean age of respondents was 33.7 ± 4.9 years, with ages ranging from 22 to 43 years. The majority were male (68.4%). Most participants were within the age group of 30–35 years (36.8%). Table 1 highlights details of the sociodemographic characteristics of participants.

Table 1. Sociodemographic Characteristics of Participants

Variable	Category	Frequency (n=57)	Percentage
Gender	Male	39	68.4
	Female	18	31.6
Age Groups	<30 years	13	22.8
	30 – 35 years	21	36.8
	36 – 40 years	20	35.1
	>40 years	3	5.3
Specialty	Radiation Oncology	29	50.9
	Surgical Oncology	13	22.8
	Haemato-Oncology	9	15.8
	Others	5	8.8
Years in Residency	≤2 years	27	47.4
	3 - 5 years	23	40.3
	>5 years	7	12.3
Participating Institutions	UCH	33	57.9
	DELSUTH	8	14.0
	LUTH	5	8.8
	ABUTH	5	8.8
	UBTH	2	3.5
	JUTH	1	1.7
	UNTH	3	5.3

Burnout was measured across three domains (scored from 0 = never to 6 = every day). A composite burnout score was calculated as the mean of these domains, with higher scores indicating greater levels of burnout. To maintain consistency across all dimensions, the personal accomplishment item was reverse-scored so that higher values represented higher burnout. Emotional exhaustion has a high burnout score; details are in Table 2.

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Table 2: Burnout subscale scores and prevalence

Burnout Dimension	Mean ± SD	Interpretation
Emotional Exhaustion	3.50 ± 0.82	**High**
Depersonalization	2.47 ± 0.75	Moderate
Personal Accomplishment	2.54 ± 0.70	Moderate

SD = standard deviation

The overall job satisfaction score was moderate (3.12 ± 0.84). Analysis of subdomains revealed variability across different aspects of job satisfaction (Table 3). Respondents reported high satisfaction with co-worker relationships (3.82 ± 0.69) and supervisor support (3.61 ± 0.76). Work environment recorded the lowest mean score (2.65 ± 0.88), indicating relative dissatisfaction.

Table 3: Job Satisfaction Scores

Variable	Mean ± SD	Interpretation
Overall Job Satisfaction	3.12 ± 0.84	Moderate
Work Environment	2.65 ± 0.88	Low–Moderate
Supervisor Support	3.61 ± 0.76	**High**
Co-worker Relationships	3.82 ± 0.69	**High**
Professional Development	3.37 ± 0.81	Moderate

There was no statistically significant association between gender and burnout scores (p = 0.292). However, years in residency showed a statistically significant association with burnout (p = 0.022). Residents with less than two years of training had higher burnout scores (2.06 ± 0.77) compared to those with 3–5 years and those with more than five years, suggesting that burnout decreases with increased years of training (Table 4).

Table 4: Association of Burnout with Socio-demographic and Training Factors

Variable	Group	Mean Burnout Score ± SD	p-value
Gender	Male	1.76 ± 0.68	0.292
	Female	1.98 ± 0.87	
Years in Residency	Less than 2 years	2.06 ± 0.77	0.022*
	3–5 years	1.64 ± 0.61	
	Greater than 5 years	1.55 ± 0.86	

*Statistically significant

Correlation analysis revealed a significant relationship between burnout dimensions and job satisfaction. Emotional exhaustion showed a strong negative correlation with job satisfaction ($r = -0.61$, $p < 0.001$), while personal accomplishment had a positive correlation with job satisfaction ($r = 0.44$, $p = 0.002$). Details in Table 5.

Table 5: Correlation between burnout and job satisfaction

Variables	Job Satisfaction (r)	p-value
Emotional Exhaustion	-0.61	<0.001
Depersonalization	-0.47	0.001
Personal Accomplishment	+0.44	0.002

Table 6 displays the findings of a multivariate regression analysis that identified predictors of burnout and job satisfaction. For burnout, increased years in residency was significantly associated with lower burnout scores ($\beta = -0.14$, $p = 0.023$). Gender and age were not statistically significant predictors.

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For job satisfaction, female gender was independently associated with lower job satisfaction (β = -0.14, p = 0.046), while years in residency and age were not statistically significant predictors.

Table 6: Multivariate linear regression – predictors of burnout score and job satisfaction

Predictors	**Burnout**			**Job Satisfaction**		
	β coefficient	**95% CI**	**p-value**	**β coefficient**	**95% CI**	**p-value**
Female Gender	0.19	-0.18 to 0.56	0.312	-0.14	-0.82 to -0.01	0.046*
Year in Residency	-0.14	-0.26 to -0.02	0.023*	0.09	-0.05 to 0.23	0.198
Age	-0.01	-0.05 to 0.03	0.614	0.02	-0.03 to 0.07	0.412

*Statistically significant

Logistic regression analysis showed that low job satisfaction (AOR = 3.6, p = 0.002), poor work environment (AOR = 2.9, p = 0.004), and long working hours (AOR = 2.5, p = 0.01) were significant predictors of high burnout. Poor supervisor support showed a positive association but was not statistically significant (Table 7). Table 8 displays the independent predictors of job satisfaction. Emotional exhaustion had the most powerful negative predictor (β = -0.45, p < 0.001), while work environment had the strongest positive predictor (β = 0.38, p = 0.002).

Table 7: Factors Associated with High Burnout – Logistic Regression

Variable	**AOR**	**p-value**
Low Job Satisfaction	3.6	0.002
Poor Work Environment	2.9	0.004
Long Working Hours	2.5	0.01
Poor Supervisor Support	1.9	0.08

AOR = Adjusted Odds Ratio

Table 8: Predictors of Job Satisfaction – Multiple Regression

Variable	**β (Beta)**	**p-value**
Emotional Exhaustion	-0.45	<0.001
Depersonalization	-0.18	0.04
Personal Accomplishment	+0.29	0.01
Work Environment	+0.38	0.002
Supervisor Support	+0.25	0.01

DISCUSSION

This multicentre study provides important insights into emotional burnout and job satisfaction among oncology residents in Nigeria. The findings reveal a clear pattern in which burnout is strongly associated with the number of years in training, while job satisfaction is influenced primarily by gender-related factors. Nearly half of the participants reported high levels of emotional exhaustion, and those in the early years of training (≤2 years) appeared particularly vulnerable, with mean burnout scores approximately 25% higher than their senior counterparts. This pattern strongly reflects what is often described as the "internship shock" phase; a period when newly inducted residents' transition abruptly from structured academic learning into the realities of clinical medicine, where the pace is relentless, and the emotional demands are profound [18]. For many of these young doctors, oncology is not just technically demanding but emotionally heavy. They are frequently confronted with suffering, end-of-life care, and difficult conversations with patients and families. Without adequate time or support to process these experiences, it is understandable that emotional exhaustion becomes the dominant feature of burnout in this group.

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Burnout pattern:

The burnout profile observed in this study, characterised by high emotional exhaustion with moderate depersonalisation and personal accomplishment is particularly telling. It suggests that while residents are deeply fatigued, many have not yet disengaged completely from their patients or lost their sense of professional purpose.

This finding aligns with studies from other low- and middle-income countries, where healthcare workers often continue to demonstrate strong professional commitment despite difficult working conditions [19]. In sub-Saharan Africa, similar levels of emotional exhaustion (45–55%) have been reported, largely attributed to systemic challenges such as workforce shortages, high patient volumes, and limited psychosocial support systems.

In contrast, lower burnout rates reported in high-income countries (30–40%) [20], highlight the impact of structured institutional support. In those settings, policies such as regulated duty hours, access to mental health services, and formal wellness programmes provide a buffer against the intense demands of oncology training. The difference is not necessarily in the nature of oncology itself, but in the systems surrounding the trainees.

Job Satisfaction:

Despite the high levels of emotional exhaustion, job satisfaction among respondents was moderate overall. What stands out, however, is the clear contrast between interpersonal satisfaction and structural dissatisfaction.

Residents reported high satisfaction with their colleagues and supervisors, suggesting that relationships within the workplace remain strong. This is an important and encouraging finding. It reflects a culture of teamwork, shared experience, and mutual support factors that often sustain healthcare workers even in the most challenging environments.

At the same time, lower satisfaction with the work environment points to deeper systemic issues. These may include workload pressures, inadequate infrastructure, staffing shortages, and limited access to resources. In many ways, this paints a very human picture: “Residents are not dissatisfied with who they work with, but rather how they are required to work”.

The strong inverse correlation between emotional exhaustion and job satisfaction ($r = –0.61$, $p < 0.001$) further reinforces this relationship. As residents become more emotionally drained, their sense of fulfilment and satisfaction diminishes. This finding is consistent with global evidence showing that burnout erodes not only performance but also the meaning and satisfaction derived from work [21]. It also mirrors findings within Nigerian physician populations, suggesting that this is a widespread issue within the local healthcare system [22].

Gender and Burnout:

The observation that female residents reported lower job satisfaction and slightly higher burnout adds another layer of complexity to the findings. While the differences may appear modest, they are important and reflect broader structural and societal dynamics. Female physicians often navigate additional expectations outside the workplace, including family responsibilities and societal roles. These competing demands can intensify stress and reduce opportunities for rest and recovery. Furthermore, subtle workplace factors such as differences in mentorship opportunities or perceived support may also contribute to this disparity [23,24]. This finding calls for a more inclusive and supportive training environment that recognises and accommodates these differences rather than assuming a “one-size-fits-all” approach to residency training.

Experience as a Protective Factor:

An encouraging finding from this study is that increasing years in residency were associated with lower burnout levels. This suggests that, over time, residents develop resilience, better coping mechanisms, and greater confidence in managing clinical and emotional demands. Senior residents are likely more familiar with the workflow, better able to prioritise tasks, and more comfortable navigating difficult patient interactions. They

may also have stronger support networks within the system. This gradual adaptation highlights the importance of supporting junior residents during their most vulnerable early years, where the risk of burnout is highest.

Key Drivers of Burnout:

The logistic regression analysis provides valuable insight into what is driving burnout and importantly, what can be changed. Low job satisfaction, poor work environment, and long working hours emerged as the strongest predictors. These are not abstract concepts; they are everyday realities for many residents. Long hours without adequate rest lead to physical fatigue, while poorly structured work environments create inefficiencies and frustration. Over time, these factors accumulate, leading to emotional exhaustion. The fact that these predictors are modifiable is crucial. Even in resource-limited settings, targeted interventions can make a meaningful difference.

Simple strategies such as ensuring protected rest periods, strengthening mentorship and supervision, and providing access to psychological support can significantly reduce burnout [25].

Strengths and Limitations:

This study has several strengths. Its multicentre design across seven major teaching hospitals enhances the representativeness of the findings within Nigeria. Additionally, the use of validated single-item measures derived from the Maslach Burnout Inventory allows for efficient and reliable assessment of burnout in a busy clinical setting, with prior studies confirming a strong correlation with the full instrument [26].

However, certain limitations should be acknowledged. The cross-sectional design limits the ability to establish causality, meaning we cannot definitively say that burnout causes low job satisfaction or vice versa. The reliance on self-reported data introduces the possibility of social desirability bias, where respondents may underreport negative experiences. Finally, the relatively modest sample size limits the ability to explore subgroup differences in greater depth.

CONCLUSION

In summary, oncology residency training in Nigeria places a considerable emotional burden on trainees, particularly in the early stages of their careers. While strong interpersonal relationships provide some level of support, they are not enough to offset the effects of demanding workloads and challenging work environments. Addressing burnout is not simply about improving individual well-being, it is about safeguarding the future of oncology care in Nigeria. Burnout doctors are more likely to disengage, reduce productivity, or even leave the profession, all of which have serious implications for a healthcare system already under strain.

There is an urgent need for: institutional commitment to resident well-being, policies that address workload and working conditions, and longitudinal and interventional research tailored to the Nigerian context. Ultimately, caring for the caregivers is not optional, it is essential.

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