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Effect of Incessant Strike Actions on the Academic Performance of University of Ibadan Medical Students

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Abstract

A strike is an organized work stoppage by employees. It has become an adopted lingua franca for the Academic Staff Union of Universities (ASUU) to effectively communicate their demands in Nigeria. Using a cross-sectional study design, we investigated the impact of strike actions on the academic performance of fifth- and sixth-year medical students at the University of Ibadan, Nigeria. A total of 242 medical students participated, and 119 (49.2%) had experienced strike actions at least five times during their studies. Most students, 196 (81.0%), believed that strikes affected their motivation to study, while 38 (15.7%) had a re-sit in their examination. The strikes significantly affected students' motivation (OR=3.10; 95% CI=1.113-8.620), long-term retention of medical knowledge (OR=0.46; 95% CI=0.257-0.815) and having a re-sit among those above 25 years old (OR=1.17; 95% CI=1.025-1.327) and male students (OR=4.91; 95% CI=1.618-14.894). Incessant strikes decrease medical students' long-term memory of medical knowledge and motivation for studying and increases the tendency to have a re-sit. We therefore suggest that ASUU consider alternative grievance strategies to prevent these negative consequences on future physicians' education and professional competence.

Keywords: Academic performance, strike, medical students, academic staff union, Nigeria

Introduction

Education is vital to humans, and John Dewey said, 'Education is not merely preparation for life; it is life itself' (Ziraba, 2018). However, it is unfortunate that the educational system in Nigeria, notably at the tertiary level, has been plagued with continuous strike actions over the years (Adesulu, 2012). A strike is a coordinated work stoppage by a group of employees aimed at compelling compliance with the demands of an employer or a group of employers (Uwasomba, 2013). In educational settings, strikes are often initiated in response to employee grievances and are sometimes used to pressure governments to change policies regarding university infrastructure development and the welfare of academic and non-academic staff unions (Edinyang & Ubi, 2013; Offem et al., 2018).

Worldwide, a university is regarded as 'the citadel of learning, the fountain of intellectual development, and a ground for the production of leaders of tomorrow' and serves as a value and knowledge provider (Ajayi, 2014). It can be inferred that any failure in the system will ultimately result in dysfunction in the provision of knowledge and value. As a result, the Nigerian university system has made meritocracy its backbone, taking pride in churning out students who are knowledgeable and worthy of character and learning (Iloanya & Nzeako 2017). University staff who teach, provide knowledge, and support university undergraduates can be broadly cate-

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gorized into academic and non-academic sectors. The Non-Academic Staff Union (NASU) oversees the affairs of non-academic staff in the institution. In contrast, the Academic Staff Union of Universities (ASUU) oversees university lecturers, ensuring they have fair treatment and that their demands are met. These bodies were formed simply to serve as representatives for the workers, presenting their complaints and needs to their employers—the government (Ajayi, 2014; Uzoh, 2017). However, they also play a crucial role in maintaining the functioning and integrity of the university system, ensuring the smooth operation of processes, and preserving the quality of education without disruption.

Disruptions in the learning processes and educational activities act as demotivating factors for students, discouraging their desire to learn. Consequently, it is not unusual for many students to engage in various activities during strike periods, which could be beneficial or nonbeneficial to them and society (Oyebode & Obaka, 2022; Nwanyanwu et al., 2023). The impact of strike disruptions on academic programs is more pronounced in medical education as the curriculum is not easily shortened (Ojinmah et al., 2024). Unlike other undergraduate students, who primarily fall under ASUU and NASU, medical students are also governed by additional academic bodies overseeing both undergraduate and postgraduate medical and health education. These include the Association of Resident Doctors (ARD), Medical and Dental Council of Nigeria (MDCN), Medical and Dental Consultants Association of Nigeria (MDCAN), and various Joint Health Sector Unions (JOHESU). Any industrial action by these bodies directly or indirectly disrupts clinical activities and education, significantly hindering the acquisition of essential clinical skills in medical training. This, combined with the year-round curriculum and the necessity for hands-on clinical practice, could have more severe consequences for medical students compared to their non-medical counterparts (Ojinmah et al., 2024). The limited hands-on practice with mannequins and patients during these disruptions can also lead to skill deterioration and knowledge gaps, resulting in prolonged graduation times and weakened healthcare systems and poor health outcomes in the nation (Ojinmah et al., 2024). In addition to these academic disruptions, challenges such as inadequate funding, poor infrastructure, and a shortage of qualified clinical lecturers further exacerbate the difficulties faced by medical students (Ojinmah et al., 2024).

The University of Ibadan Medical School aims to promote knowledge acquisition, critical understanding, and service to produce competent medical graduates with high standards. This aligns with the vision statement: 'to be a world-class institution for academic excellence geared towards meeting societal needs.' Since its establishment in 1948, the school has focused on equipping medical students with the essential knowledge, skills, and professional conduct necessary for diverse career paths, ensuring that they practice professionalism, and uphold the highest ethical standards (Olasoji, 2014; Osoba et al., 2021). However, strike actions have repeatedly disrupted the academic process, hindered the delivery of essential training, and intensified the challenges in achieving the vision for medical education. As a result, these disruptions negatively impact the academic performance and overall competency of graduating medical students (Ojinmah et al., 2024). To date, no study has been conducted to assess the impact of incessant strike activities on the education of medical students in Southwestern Nigeria, which has the highest number of medical schools and graduates most doctors in Nigeria. Therefore, this study aimed to evaluate the effect of incessant strikes (industrial actions) on the academic performance of University of Ibadan medical students, as outlined in the following research questions:

1. What are the reports of students on strike actions and their academic performance?
2. How well did the students perform in the continuous assessments and examinations?

3. Is there any relationship between medical students' baseline characteristics and the effect of strikes on their academic performance?
4. What are the medical students' demographic characteristics associated with their academic performance?

Literature Review

This study is based on Ryan and Deci's self-determination theory (SDT) (2000), which provides a framework for understanding motivation and behavior, emphasizing the role of intrinsic psychological needs. According to Legault (2017) and Zeigler-Hill et al. (2020), SDT offers a comprehensive perspective on human personality and motivation, underscoring the interaction between individuals and their social environment. It identifies intrinsic and several forms of extrinsic motivation, examining their effects on behavior across various contexts, as well as on cognitive, social development, and personality. At its core, SDT identifies the basic psychological needs of autonomy, competence, and relatedness, which are critical for promoting self-motivation, engagement, performance, well-being, and personal growth.

However, external factors such as environmental disruptions can significantly impact these processes. In educational systems, strike actions create conditions that frustrate and impede students' basic needs. The disruptions caused by strikes often interfere with academic progress, causing medical students to fall behind and struggle with their studies and clinical skills, undermining their sense of competence and effectiveness in their pursuit of becoming physicians. Autonomy is also affected, as medical students lose control over their academic schedules and the expected graduation time. At the same time, relatedness is disrupted due to a lack of connection and support from fellow students as well as theoretical and clinical faculty. Medical students are more likely to remain motivated to study in the absence of strike actions and other disruptive external factors such as inadequate funding, poor infrastructure, and a shortage of qualified clinical lecturers. Under these conditions, they should maintain psychological resilience despite the demanding year-round curriculum, rigorous schedule, and broad scope of medical education, ultimately leading to improved academic performance. We employed this theory because it provides a comprehensive framework that directly links students' motivation to study, academic performance, and long-term memory of acquired medical knowledge retention to the effects of strike actions.

Education is the foundation for achieving many other Sustainable Development Goals (SDGs), and it lies at the heart of the 2030 agenda (UNESCO, 2017; United Nations, 2023). It aims to foster the knowledge, skills, understanding, values, and actions necessary for building a sustainable, equitable, and resilient society. Education is essential for reducing inequalities and achieving gender equality. It empowers individuals globally to lead healthier, more sustainable lives, promotes tolerance among diverse groups, and contributes to developing peaceful societies (UNESCO, 2017; United Nations, 2023). Quality education improves the size and caliber of the workforce by improving their skill levels and efficiency. It provides a nation access to global knowledge, enabling the adoption and adaptation of existing technologies to address local needs in specific environments. High-quality education leads to a gradual increase in productivity and efficiency (Egwu, 2018).

Meanwhile, the goal of basic medical education in Nigeria since its inception in 1948 at the University College Hospital, Ibadan has been to ensure that medical students acquire the knowledge, skills and professional behavior that prepare them for a spectrum of career choices as well as to practice professionally and ethically at highest standards (Osoba et al., 2021). This goal has been hindered by poor infrastructure, limited funding, shortage of qualified faculty, decrepit work environment, insufficient teaching resources, low salaries and subpar welfare packages for doctors and lecturers, and

regular interruptions to the academic calendar (Ojinmah et al., 2024). Additionally, incessant strike actions that disrupt structured year-round curricula have immediate and long-term consequences for medical students and the healthcare system. These disruptions can create knowledge gaps that may persist throughout a physician's career, ultimately affecting their professional competency and patient care.

Nigeria has approximately 125 public (federal and state) universities and approximately 2.5 million students (NUC, 2024). Since 2000, at least 15 nationwide strikes have occurred within these universities (Aljazeera News, 2022). The ASUU strike is a demonstration by university academic staff in Nigeria against the government's failure to adhere to their negotiated agreement (Ntiasagwe, 2020). According to the 2002 statistics from the National Universities Commission, ASUU has embarked on strikes over twenty-three times since 1992 to advocate for their demands (Bello & Isa, 2016). As of 2022, ASUU has gone on strike seventeen times since 1999 for a total of five calendar years in a period of 23 years, with the longest being 270 days (Jacob & Abubakar 2020; Premium Times, 2022). This has had a negative effect on students' academic performance, degree completion rate, education standards, and graduating half-baked graduates who are not fully prepared and equipped for the real world (Oyebode & Obaka, 2022; Nwanyanwu et al., 2023). In the undergraduate medical education, this incessant industrial action has unintentionally disrupted the academic lives and performance of medical students, posing significant challenges to their duration of study. It has led to extended graduation times, lower examination performance and final grades, reduced clinical skills competency, knowledge gaps, and increased psychological stress (Ojinmah et al., 2024; Awire et al., 2020). Oftentimes, during these periods, students are away from school for extended periods, which can completely disconnect them from their studies, as home conditions may not support productive academic activities. Many students find themselves idle at home and engage in activities unrelated to their studies (Akintoye & Uhunmwuangho, 2018). This leads to frustration for both students and their parents or guardians due to the prolonged uncertainty regarding school resumption. Strike actions disrupt theoretical learning and significantly impact clinical exposure, leading to competency gaps in essential procedures. These challenges also contribute to long-term health issues in the public and the country, resulting in reduced human resources and weakened healthcare systems with poor health indicators (Ojinmah et al., 2024). Studies have shown that the disruptive impact of strikes contributes to insufficient procedural exposure and low confidence in performing basic procedures among young physicians after graduation (KingPriest et al., 2023; Ojinmah et al., 2024).

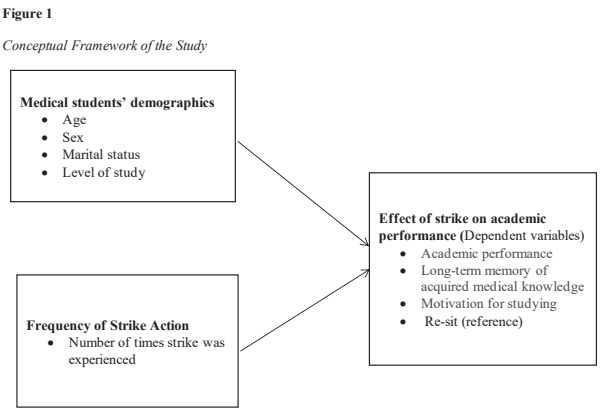
A study by Egwu (2018) on the effects of strike actions on qualitative education in tertiary institutions among 200 fourth-year medical students randomly sampled from four tertiary institutions in the Southeast zone found that strikes resulted in poor academic performance, decreased interest in studies and indulgence in exams malpractices. The study suggested the renewal of the current educational laws to make it more flexible. It emphasized the need for adequate government funding in the educational sector to promote research and innovation. The study however, reported no objective evidence of increase in the number of students who indulged in examination malpractice after strikes or representation of decrease in the academic performance of students. In the eastern part of Nigeria, a study that assessed the impact of university strikes reported that such activities adversely affected students' educational outcomes. Strike actions lead to decreased motivation and willingness to learn, ultimately undermining academic achievement (Ntiasagwe, 2020). In addition, ASUU strikes have adversely affected the implementation of the university curriculum, resulting in university programs being only partially executed during strike periods (Offem et al., 2021). These circumstances lead students to pursue degrees at

any cost, often bypassing the essential learning processes necessary for meaningful education and understanding (Offem et al., 2021).

Many reasons are recognized as the cause of these incessant strikes. Some of the prominent reasons are the problems of funding, the lack of autonomy with introduction of the Integrated Personnel and Payroll System and unfavorable working conditions. Over the years, the Federal Government has not fulfilled its own side of the bargain, attributing it to an economic downturn and plummeting foreign exchange rates. As a result, intermittent and episodic strike actions have occurred. Poor welfare packages, among other factors, have a long-standing history of contributing to the frequent strike actions organized by labor unions in Nigerian public universities (Nkanu et al., 2023). It is essential to address the root causes of disruptions and academic imbalances, including strikes, by incorporating solutions into structured educational practices to promote effective teaching and improved learning outcomes in higher education institutions. According to Offem et al. (2021), the primary mission of tertiary education is to prepare a skilled workforce for various industries and organizations. This goal can only be achieved through effective educational system management to ensure optimal functioning.

Most published studies focus broadly on the tertiary education system (Oyebode & Obaka, 2022; Ntiasagwe, 2020), with limited attention to medical students' unique challenges. Furthermore, there is insufficient data exploring the correlation between strike actions and rates of academic re-sits among this group of students. Medical education, with its unique all-year-round curriculum and reliance on clinical training, is particularly vulnerable to such disruptions, yet research on the specific impact of strikes on medical students remains limited. This study aims to bridge that gap by exploring the effects of incessant strike actions on the academic performance of University of Ibadan medical students. The literature and the research questions discussed above are presented in Figure 1.

Figure 1
Conceptual Framework of the Study



Methodology

Research Design

This investigation employed a cross-sectional survey research design to assess the impact of strike actions on the academic performance of fifth- and sixth-year medical students at the University of Ibadan, Nigeria. A cross-sectional research design is deemed appropriate for gathering preliminary evidence on the effects of strike actions on undergraduate medical education in a cost-effective manner during a specific academic period.

Research Setting

The College of Medicine at the University of Ibadan is a prestigious institution and is the first established medical school in Nigeria. The school has the highest quota for undergraduate medical education admission in Nigeria and is currently one of the best and most esteemed medical schools in the country. More so, the college offers a comprehensive medical curriculum that combines pre-clinical and clinical training, essential for producing well-rounded medical professionals. Its curriculum structure, which includes rigorous clinical postings from the fourth to the sixth year, equips students with theoretical knowledge and hands-on experience

in medical practice. Many other medical schools in Nigeria adapt their curriculum from the College of Medicine, University of Ibadan. This long-standing reputation as a leader in medical education justifies its selection as the focus of this study.

The presence of multiple staff unions, such as the Academic Staff Union of Universities (ASUU), Non-Academic Staff Union of Universities (NASU), and Medical and Dental Consultants Association of Nigeria, plays a crucial role in shaping the educational environment, including the effects of industrial actions such as strikes. These unions are pivotal in advocating for the welfare of staff, but their actions can also have significant impacts on students' academic progression and overall learning experience, especially in times of frequent strikes.

The grading system at the College of Medicine, which includes a distinction (> 80%), pass (between 50% and 80%), and fail (< 50%), ensures that academic performance is rigorously evaluated and provides a clear measure of student achievement. To receive the prestigious Bachelor of Medicine, Bachelor of Surgery (MBBS) degree, students must pass multiple professional examinations, with continuous assessments after each clinical posting. This structured system of evaluation is essential to ensure that graduates possess the skills and knowledge necessary for medical practice. The University of Ibadan's College of Medicine, with its combination of academic excellence, a structured curriculum, and the presence of unions that influence the academic atmosphere, presents a unique and compelling setting for exploring the effects of industrial actions on medical students' academic performance and motivation. Its status as the premier medical school in Nigeria provides a strong foundation for understanding how disruptions, such as strikes, can affect medical education in a highly regarded institution.

Research Instrument and Data Collection

Based on the conceptual framework, we used an online anonymized questionnaire to assess the effects of strike actions on medical students' academic performance. The investigators developed the questionnaire based on literature review of previous studies. The questionnaire was designed to collect data on demographics, strike actions, and academic performance of University of Ibadan medical students.

The online questionnaire was distributed via a link sent to the medical students. A pre-notification message inviting them to participate in an anonymous survey was initially sent, followed by the survey link, and reminders were issued at four-day intervals to maximize the response rate.

Before the main study, a pilot study was conducted to evaluate the clarity, feasibility, and reliability of the research instrument. This pilot phase involved a small group of medical students from the University of Ibadan (second and third-level students). Based on the feedback obtained from the pilot study, necessary revisions were made to enhance the instruments' effectiveness for the main study.

Data Analysis

The data collected for this study were exported and analyzed using IBM SPSS Statistics Version 23. Descriptive statistics such as frequencies, percentages, means, and standard deviations, were computed to summarize the demographic characteristics of the medical students and the key variables, such as academic performance, motivation for studying, and retention of medical knowledge.

For inferential analysis, the chi-square test and multinomial logistic regression were performed. The chi-square test was used to explore the relationships between independent variables (baseline characteristics such as age, sex, marital status, and level of study of the medical students) and various dependent variables (indicators of academic performance, decreased academic performance, decreased motivation for studying,

long-term retention of medical knowledge, and poor academic performance). The multinomial logistic regression was used to make inferences about the association between the nominal categorical dependent variables (How has strike actions affected your academic performance? How did strike actions affect your long-term memory of acquired medical knowledge? Did the strike actions affect your motivation for studying? Are you of the opinion that poor academic performance impacts strike actions on academic performance? and had a re-sit) and the independent variables (age, sex, marital status, level of study, and number of times students experienced strike), which were either categorical or continuous. A p-value < 0.05 was considered statistically significant. The chi-square test, odds ratio and 95% confidence interval were reported. Ethical approval was obtained from the University of Ibadan/University College Hospital Ethics Committee UI/EC/21/0228.

Results and Discussion

Description of the students' demographics

A total of 242 medical students participated in the survey out of 296 students in the fifth and sixth years, giving a response rate of 81.8%. Their mean (standard deviation) age was 25.3 (2.42) years. A higher proportion (61.2%) of these students were in their fifth year while 38.8% were in their sixth year. Almost two-thirds (64.9%) of them were males, and about nine out of every ten participants (91.3%) were single (Table 1).

Table 1
Medical Students' Characteristics

Medical Students' Characteristics

Variable	Frequency (n=242)	Percentage (%)
Age		
Mean±(SD)	25.3±(2.42)	
Sex		
Female	85	35.1
Male	157	64.9
Marital status		
Married	21	8.7
Single	221	91.3
Level of study		
Fifth-year	148	61.2
Sixth-year	94	38.8

The Students' Report of Strike Actions and Their Academic Performance

About half (49.2%) of the students reported they experienced strike actions at least 5 times during their study. Many students (78.9%) thought strike actions had affected their academic performance; 83.4% thought it affected their academic performance negatively. More than three-fifths (62.4%) believed that strike actions significantly decreased their study habits and (61.2%) decreased their long-term recall of acquired medical knowledge. About eight out of every ten students (81.0%) believed that strike actions affected their motivation to study. Over two-thirds (68.2%) of the students believed that "poor academic performance" is influenced by strike actions. Other factors reported by students that negatively affected their performance included financial issues (30.8%) and pressure from increased workloads due to a compressed curriculum resulting from lecturers' strike actions (15.4%) (Table 2).

Table 2
Reports of Strike Actions and Academic Performance

Variable	Frequency (n=242)	Percent (%)
Number of times strike was experienced		
<5	93	38.4
>5	119	49.2
I can't remember/lost count	30	12.4
Do you think strike actions have affected your academic performance?		
Yes	193	79.8
No	49	20.2
If yes, how did it affect your academic performance? (n=193)		
Positively	32	16.6
Negatively	161	83.4
How did strike actions affect your study habits?		
Increased significantly	26	10.7
No significant change	65	26.9
Decreased significantly	151	62.4
How did it affect your long-term memory of acquired medical knowledge?		
Increased significantly	14	5.8
No significant change	80	33.1
Decreased significantly	148	61.2
Did it affect your motivation for studying?		
Yes	196	81.0
Not sure	17	7.0
No	29	12.0
Are you of the opinion that poor academic performance is an impact of strike actions on academic performance?		
Yes	165	68.2
Not sure	51	21.1
No	26	10.7
Other factors that negatively affected students' performance in the exam (n=39)		
Financial difficulties	12	30.8
Bulky/Compressed Curriculum	4	10.3
Pressure from increased workloads	6	15.4
Distractions	4	10.3
Others	13	33.3

The baseline characteristics of the students, especially their age, are similar to those reported in previous studies of Nigerian tertiary institution students (Agbo et al., 2024). Most of the medical students indicated that they encountered at least five strikes during their study, suggesting there was likely an occurrence of strike action each year during their education. This frequency is higher than that reported in the study by Awe et al. (2022), who assessed the collateral effects of strike actions by academic staff in public universities in Southwest Nigeria. The majority of the students recounted that they had experienced one or two ASUU strikes. The increased frequency of strike actions reported in our study may be attributed to the extended years of study in medical school, as well as the fact that clinical lecturers in Nigeria belong to multiple unions that can engage in industrial actions at different times (Ojinmah et al., 2024).

Our finding that the majority of students reported that strike action decreased their academic performance corresponds with

reports from several studies. Similar declines in academic performance during post-strike periods have been reported among students in non-health fields at various Nigerian universities (Oyebode & Obaka 2022, Nwanyanwu et al., 2023; Yusuf et al. 2015; Ajayi, 2014). This trend was also observed among pharmacy students (Agbo et al., 2024). Additionally, a study conducted in four tertiary institutions among fourth-year medical students in eastern Nigeria on the effects of strike actions on qualitative education in tertiary institutions revealed that strike actions cause poor academic performance of students, loss of interest in their studies, and indulgence in exam malpractices (Egwu, 2018).

The medical students affirmed that strike actions negatively affected their academic performance by significantly decreasing their study habits. They also reported that it significantly decreased their long-term memory of acquired medical knowledge, especially for the fifth-year students. This finding indicates that the main objective of basic medical education in Nigeria is to ensure that medical students acquire knowledge and skills that meet the highest standard. Repeated disruptions caused by strike actions from ASUU and other governing bodies have significantly impacted the academic performance of medical students at the University of Ibadan. Although studies have shown different factors that affect academic performance among medical students, strike actions could also have a cumulative stressful effect on their academic performance, as demonstrated in our study (Ojinmah et al., 2024; Gebru & Verstegen 2023).

The reported effects of strike actions of decreased study habits and long-term memory of acquired medical knowledge affected the students' academic performance and possibly the long term, as they practice as physicians. Previous studies among non-medical students have shown strike action metamorphosis to produce half-baked graduates (Oyebode & Obaka, 2022; Nwanyanwu et al. 2023). In addition, the reduced study habits and longer stay in school as students might make them emotionally and physiologically unbalanced, subsequently affecting their academic performance (Oyebode & Obaka 2022; Ojinmah et al., 2024). It can also create the compulsion to drop out of medical school due to the extension of years spent in training, as they would have to compete in the Nigerian labor market, which discriminates by age, whereas the mean age of participants was 25.3 years as at the time of the study. Advanced age at entry into the Nigerian labor market almost automatically nose-dives economic value. Strike actions in themselves or their negative effects described above can also predispose students to adverse mental health conditions such as depression (Albar & Onye 2016). Similarly, Nwanyanwu et al. reported that ASUU strikes diminish students' reading ability, encourage forgetfulness of previously acquired knowledge, and promote a read-and-pass attitude, which makes students pursue the certificate rather than go after the knowledge for real-world applications (Nwanyanwu et al. 2023). The disruption of education and training of medical students also has significant consequences for the future of medical practice, with frequent interruptions not only postponing the development of fully qualified professionals but also threatening the long-term quality of Nigeria's healthcare system (Awire et al., 2020).

The Students' Performance in Continuous Assessments and Examinations

It was observed that the majority of students passed the continuous assessments that were taken prior to the completion of the survey in pediatrics (73.0%), Obstetrics and Gynecology (99.3%), medicine (96.9%), surgery (82.5%), psychiatry (99.0%), and Community Medicine (97.9%), although a few students (15.7%) had a reference (re-sit) in their professional examinations (Table 3).

Table 3
Performance in Continuous Assessments and Examinations

Variable	Frequency	Percentage (%)
Pass the last continuous assessment in Paediatrics (n=148)		
Yes	108	73.00
No	40	27.00
Pass the last continuous assessment in Obstetrics and Gynaecology (n=147)		
Yes	146	99.30
No	1	0.70
Pass the last continuous assessment in Medicine (n=97)		
Yes	94	96.9
No	3	3.1
Pass the last continuous assessment in Surgery (n=97)		
Yes	80	82.50
No	17	17.50
Pass the last continuous assessment in Psychiatry (n=97)		
Yes	96	99.00
No	1	1.00
Pass the last continuous assessment in Community Medicine (n=96)		
Yes	94	97.90
No	2	2.10
Have a re-sit (reference) in the last professional examinations (n=242)		
Yes	38	15.70
No	204	84.30

The timing of the continuous assessment affected the students' performance in the last continuous assessment, as nine of ten students passed on writing the online/post-strike action assessment. This outstanding performance could be attributed to advancements in technology and the development of some coping skills. It is possible that the students, despite their absence from school, might have been engaging in online tutorials using several applications on their phones and/or computers, which must have aided positive interactions, or registering on some academic sites providing free tutoring in their diverse specialty of study. In contrast, a study on the implication of the ASUU strike action on students' academic performance among non-medical students at the University of Lagos, Nigeria, which analyzed students' academic performance after an ASUU strike-disrupted academic session, found that students' grade point averages (GPAs) prior to the strike were better than post-strike GPAs (Yusuf et al. 2015).

Baseline Characteristics on Effects of Strike Actions on Academic Performance

Table 4 shows that a greater proportion (67.6%) of fifth-year medical students, compared to approximately half (51.1%) of sixth-year students, reported that strike actions significantly decreased their long-term memory for acquired medical knowledge (X^2=6.85, p = 0.033), using long-term retention of medical knowledge as the metric. Over three-quarters of the students, although significantly more of the sixth-year students (86.2%) compared to 77.7% of the fifth-year students, also reported that strike actions affected their motivation to study. An association was found between responses to the question, "Did the strike actions affect your motivation for studying?" and level of study (X^2=6.69, p = 0.035) (Table 4).

Table 4

Relationship between Baseline Characteristics and the Effects of Strike Actions on Academic Performance

Variable	Sex		Marital status		Level of study	
	Male	Female	Single	Married	Fifth	Sixth
Did strike actions affect your academic performance?						
Yes	124 (79.0)	67 (78.8)	172(77.8)	19 (90.5)	118 (79.7)	73 (77.7)
No	33 (21.0)	18 (21.2)	49 (22.2)	2 (9.50)	30 (20.3)	21 (22.3)
X^2(p-value)	0.00(0.997)		1.84(0.174)		0.15(0.700)	
How have strike actions affected your academic performance? n=191						
Positively	22 (17.5)	10 (14.9)	28 (16.1)	4 (21.1)	15 (12.6)	17 (23.0)
Negatively	104 (82.5)	57 (85.1)	146 (83.9)	15 (78.9)	104 (87.4)	57 (77.0)
X^2(p-value)	0.20(0.652)		0.31(0.581)		3.55(0.060)	
How did strike actions affect your study habit?						
Increased significantly	18 (11.5)	8 (9.4)	24 (10.9)	2 (9.5)	13 (8.8)	13 (13.8)
No significant change	43 (27.4)	22 (25.9)	62 (28.1)	3 (14.3)	38 (25.7)	27 (28.7)
Decreased significantly	96 (61.1)	55 (64.7)	135 (61.1)	16 (76.2)	97 (65.5)	54 (57.40)
X^2(p-value)	0.38(0.829)		2.09(0.352)		2.17(0.339)	
How did strike actions affect your long-term memory of acquired medical knowledge?						
Increased significantly	8 (5.1)	6 (7.1)	13 (5.9)	1 (4.8)	8 (5.4)	6 (6.4)
No significant change	55 (35.0)	25 (29.4)	73 (33.0)	7 (33.3)	40 (27.0)	40 (42.6)
Decreased significantly	94 (59.9)	54 (63.5)	135 (61.1)	13 (61.9)	100 (67.6)	48 (51.1)
X^2(p-value)	1.02(0.602)		0.04(0.978)		6.85(0.033)	
Did the strike actions affect your motivation for studying?						
Yes	124 (79.0)	72 (84.7)	178 (80.5)	18 (85.7)	115 (77.7)	81 (86.20)
Not sure	12 (7.6)	5 (5.9)	16 (7.2)	1 (4.8)	9 (6.1)	8 (8.5)
No	21 (13.4)	8 (9.4)	27 (12.2)	2 (9.5)	24 (16.2)	5 (5.3)
X^2(p-value)	1.19(0.552)		0.35(0.841)		6.69(0.035)	
Are you of the opinion that poor academic performance is an impact of strike actions on academic performance?						
Yes	106 (67.5)	59 (69.4)	148 (67.0)	17 (81.0)	115 (77.7)	81 (86.2)
Not sure	34 (21.7)	17 (20.0)	47 (21.3)	4 (19.0)	9 (6.1)	8 (8.5)
No	17 (10.8)	9 (10.6)	26 (11.8)	0 (0.0)	24 (16.2)	5 (5.3)
X^2(p-value)	0.10(0.949)		0.35(0.841)		3.07(0.216)	

Inner motivation is an indispensable driver of effective self-regulation and improves academic performance (Abdulghani et al. 2014). We also found that the majority of the medical students, especially final-year students, reported that strike action affected their motivation for studying. Once motivation towards a task is lacking, there will be minimal, or no success associated with such a task. Therefore, it was not unexpected that strike actions would adversely affect the students' academic performance. Ejike (2015) noted that indefinite strike actions can lead to compression of the academic curriculum and calendar, depriving students of adequate preparation and ultimately hindering their achievement of educational objectives. Our study corroborates this, as medical students reported that increased workloads from a compressed curriculum due to lecturer strikes negatively impacted their examination performance. Furthermore, these disruptions have led to many medical students seeking education abroad, where they can benefit from a more stable medical education system (Ojinmah et al., 2024; Awire et al., 2020). Even if they return to Nigeria for the one-year compulsory internship, many ultimately migrate, worsening the country's high patient-to-doctor ratio and compounding the existing healthcare issues. This negative public perception may also increase medical tourism from Nigerians to other countries (Ojinmah et al., 2024). A mixed-method study among medical students highlighted a dysfunctional medical education system that did not meet their expectations, with the perception of declining standards in medical training being a major concern. This feeling was further intensified by some lecturers who selectively shared their positive experiences of studying or practicing medicine abroad, thereby fueling students' desire to migrate in pursuit of foreign qualifications (Awire et al., 2020).

Multivariate analysis of the students' characteristics on effect of strike action on academic performance

On further analysis using multinomial logistic regression, the strike had a significant effect on the students' motivation for studying and this effect was three times higher among the sixth-year medical students compared with the fifth-year medical students (OR=3.10; 95% CI=1.113-8.620). The strike had a significant effect on the students' long-term memory of acquired medical knowledge and this effect was two times less likely among the sixth-year medical students compared with the fifth-year medical students (OR=0.46; 95% CI=0.257-0.815).

Students older than the mean age (25 years) were two times more likely to have a re-sit than those below the mean age (OR=1.17; 95% CI=1.025-1.327). The male students were about five times more likely to have a reference (re-sit) in their professional examination compared with the female students (OR=4.91; 95% CI=1.618-14.894). None of the medical students' characteristics were responsible for poor academic performance or had a negative impact on their academic performance (Table 5).

Table 5
Multinomial Analysis of Variables that Affect Students' Academic Performance

Multinomial analysis of the variables that are responsible for poor academic performance due to strike action.			
Variables	**Chi-square**	**p-value**	**Odds Ratio (95% CI)**
Age	0.079	0.781	0.99(0.890-1.092)
Sex	0.018	0.894	1.05(0.532-2.061)
Marital status	1.743	0.187	0.36(0.080-1.636)
Level of study	0.053	0.817	0.93(0.486-1.766)
Number of times strike was experienced	1.292	0.256	0.56(0.203-1.528)
Multinomial analysis of the predictors of impact of strike on decreased academic performance			
Variables	**Chi-square**	**p-value**	**Odds Ratio (95% CI)**
Age	0.076	0.783	1.01(0.923-1.113)
Sex	0.138	0.710	0.89(0.466-1.681)
Marital status	1.737	0.188	0.42(0.116-1.524)
Level of study	0.660	0.417	0.78(0.422-1.429)
Number of times strike was experienced	0.258	0.611	0.80(0.333-1.911)
Multinomial analysis of the variables that affected the students' long-term memory of acquired medical knowledge.			
Variables	**Chi-square**	**p-value**	**Odds Ratio (95% CI)**
Age	1.376	0.242	0.94(0.849-1.042)
Sex	0.526	0.468	0.80(0.427-1.479)
Marital status	0.028	0.867	0.92(0.337-2.498)
Level of study	**7.037**	**0.008**	**0.46(0.257-0.815)**
Number of times strike was experienced	0.540	0.462	1.35(0.607-3.002)
Multinomial analysis of the variables that affected the students' motivation for studying.			
Variables	**Chi-square**	**p-value**	**Odds Ratio (95% CI)**
Age	0.180	0.671	0.97(0.832-1.126)
Sex	0.130	0.719	0.84(0.330-2.148)
Marital status	0.188	0.665	0.71(0.147-3.397)
Level of study	**4.685**	**0.030**	**3.10(1.113-8.620)**
Number of times strike was experienced	1.838	0.175	1.96(0.740-5.208)
Multinomial analysis of the variables that are responsible for having a re-sit among the medical students			
Variables	**Chi-square**	**p-value**	**Odds Ratio (95% CI)**
Age	**5.430**	**0.020**	**1.17(1.025-1.327)**
Sex	**7.893**	**0.005**	**4.91(1.618-14.894)**
Marital status	1.306	0.253	0.51(0.151-1.646)
Level of study	2.829	0.093	0.49(0.217-1.124)
Number of times strike was experienced	1.128	0.288	0.50(0.140-1.793)

The prevalence of having a re-sit in the preceding professional examination was 15.7% in our study. Having a re-sit had no association with students' perceptions of the effects of strike actions. However, strikes mitigate the identified factors associated with high academic performance among medical students (Abdulghani et al. 2014; Gebru & Verstegen 2023). These include student preparation and learning in different capacities – lecture attendance, revision, mind mapping, learning from skills labs and patients, tutorials, and clerkship–because all these are truncated during strike actions.

Our findings revealed that male students were more likely to have re-sits than their female counterparts. This aligns with reports from Japan, where female medical students outperformed males in all integrative tests, including clinical clerkships (Komasawa et al., 2022). However, contrasting evidence from southeastern Nigeria indicates that gender is not a determinant of academic performance among medical students (Ekwochi et al., 2019). Similarly, Yusuf and Elfaki (2022) examined gender-based differences in grades across various medical school subjects in a six-year curriculum and found no significant disparities. They attributed slight variations in performance to other influencing factors rather than gender alone. The better academic performance of female medical students in some studies may be due to their strong motivation and advanced emotional intelligence, which helps them effectively navigate the challenges of medical training.

While many students attributed their poor examination performance to strikes, some cited additional factors, such as financial difficulties and distractions. These challenges can also negatively impact the examination results and, thus, the number of those having a re-sit. The country's tough economic situation often forces students to take on jobs to support themselves and their families. Additionally, the extended duration of their studies can lead to increased costs for housing and daily expenses, compounding their financial difficulties and further distracting them from their studies (Ojinmah et al., 2024).

The study is limited by the fact that it did not assess how long these medical students have witnessed strike actions since their admission to medical school, nor did it explore whether they have considered leaving the program. Additionally, we did not evaluate the type of educational materials and coping strategies, such as tutorials or group study sessions, that the students engaged in during the strikes, which could have influenced their performance in their last post-strike continuous assessment before the survey. Despite these limitations, this study has objectively linked decreased long-term memory of acquired medical knowledge and motivation for studying among medical students to incessant ASUU strike actions.

Conclusion and Recommendations

Our study emphasizes the profound impact of strike actions on medical students' academic performance and motivation. Nearly half of the participants reported frequent exposure to strikes, with most indicating a decline in motivation to study. The findings demonstrated that strike actions significantly impaired students' long-term retention of medical knowledge and increased the probability of re-sits, especially among older students and males. These challenges highlight the critical need for effective strategies to address and reduce the negative consequences of strikes on medical education. While strikes are a major contributor, other factors, including financial challenges, increased workload, and the pressure of a compressed curriculum, also shape medical students' academic outcomes. The disruption of the medical school calendar due to extended strikes not only prolongs students' time in school but also delays the development of qualified healthcare professionals, which has long-term implications for the quality of medical care in the country.

Academic Staff Union of Universities must prioritize dialogue and negotiation to minimize the frequency and duration of strikes.

We recommend that medical schools implement contingency plans to ensure continuity of learning during strike periods. Incorporating innovative teaching methods, such as online learning platforms and simulation-based training, can help maintain motivation, enhance the retention of medical knowledge, and ultimately support students' academic success in the face of disruptions.

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