Research Paper

The Factors Influencing Psychological Distress Among Striking Workers in Nigeria in the Post-COVID Pandemic Era

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ABSTRACT

Objectives: Withholding workers' salaries for months as a punishment for engaging in a strike may natively affect and influence their psychological distress. This study assessed the correlation between physical activity, psychological distress, and socioeconomic status, and explored the factors influencing psychological distress among the striking workers in Nigeria.

Methods: This cross-sectional face-to-face and online study conveniently sampled a total of 234 lecturers aged 27-69 years. The sociodemographic, physical, socio-economic, and psychological distress was assessed by the university strike physical and psychological distress questionnaire (USPAPDQ). Data analysis includes descriptive statistics, multiple linear regression, Spearman's correlation, and Man whiney U-test, using a $P<0.05$ as the level of significance.

Results: The mean age, number of papers, and frequency/duration of exercise were 45.4±10.36 years, 4±5.82, 2.19±1.63 day/week, and 30.49±29.82 minutes/day, respectively. An inverse significant relationship was established between anxiety and age ($r=-0.27$; $P<0.01$), contemplating changing my job ($r=-0.40$; $P<0.01$), number of children ($r=-0.19$; $P<0.01$), academic rank ($r=-0.27$; $P<0.01$), frequency ($r=-0.18$; $P<0.01$), and duration ($r=-0.16$; $P=0.02$) of exercise. The significant predictors of anxiety were marital status ($\beta=-0.207$, $P<0.01$), contemplation on changing my job if the strike continues ($P<0.01$, $\beta=-0.198$), see anything positive about the strike ($P<0.01$, $\beta=0.178$), and numbers of children ($P<0.01$, $\beta=-0.193$). The significant predictors of depression were, an alternate source of income ($P=0.04$, $\beta=0.126$), contemplation on changing my job if the strike continues ($P=0.03$, $\beta=-0.149$), seeing anything positive about the strike ($P=0.05$, $\beta=0.118$), and time (hours) spent watching television ($P=0.03$, $\beta=0.124$).

Discussion: Overall, the significant negative predictors of psychological distress include marital status, contemplating changing my job, and number of children. The positive predictors were seeing anything positive about the strike, alternate sources of income, and time spent watching television. The government may prevent the reoccurrence of strikes by honouring existing agreements.

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Highlights

• We assessed the correlation between physical activity (frequency, duration, and intensity of exercise), psychological distress (anxiety and depression), and socioeconomic status and explored the factors influencing psychological distress among striking workers in Nigeria.

• We also look at the prevalence of psychological distress and suggestions on ways to prevent strikes in Nigerian universities.

• A tenuous inverse significant relationship was established between anxiety, age, contemplating changing my job, number of children, academic rank, and frequency/duration of exercise.

• The significant negative predictors of psychological distress were marital status, contemplating changing my job, and number of children while the positive predictors were seeing anything positive about the strike, alternate source of income, and time spent watching television.

• A third of the total subjects showed signs of developing major depression and anxiety.

• Probing to explore the factors influencing psychological distress among striking workers may offer stepwise intervention to lessen it.

• We recommend that the government should honor the existing agreement with the workers to prevent strike reoccurrence.

Plain Language Summary

The non-payment of academic staff salaries due to strike actions led to psychological distress such as anxiety and depression. Lecturers with higher academic rank and with more children reported less anxiety and depression. Additionally, those who spent more time participating in physical activity and exercise reported less anxiety and depression. Regular participation in physical activity and exercise is therefore recommended for all people especially those with anxiety and depression such as experienced among the striking scholars. As an essential medicine regular exercise is a powerful stimulant in preventing and modulating lifestyle associated diseases such as diabetes, obesity, heart disease, and mental health challenges. We also recommend that the Government should look into the issues that caused the workers to embark on these strike such failure to honor the existing agreement previously reached with the lecturers as this may help in preventing strike re-occurrence in the future.

Introduction

The Academic Staff Union of Universities (ASUU) is a union of intellectuals engaged in public universities in Nigeria which seeks the economic welfare and socio-political interest of the country and that of its members [1]. As a trade union, it develops a working relationship with the government, negotiates conditions and terms of service, protects its members from victimization, and considers their wellbeing [1, 2]. Globally, an academic staff or scholar functions in three capacities; lecturing, research, and community service. Many Nigerians are ignorant of the tripartite role of an academic staff and often views classroom duties (lecturing or teaching) as the only role of an academic staff, and as such during strike may even support that they should not be paid salaries.

The key objective of ASUU as enshrined in the second rule of its constitution (ASUU constitution, 1978 as amended in 1984) are to [3]: 1) Ascertain and uphold a proper and just condition of service for its members, 2) Establish and maintain a high standard of professional practice and academic performance, 3) Organize qualified academic staff for membership, 4) Standardize the rapport between the employers and academic staff members, and 5) Protect and move ahead the cultural and socio-economic concern of the nation.

Public universities in Nigeria are majorly funded by the government, through a yearly budget for education. For example, the yearly budget for education in Nigeria is 8.4%, this is grossly inadequate [3], and lower than that of Ghana/Kenya in Africa, the United Kingdom, and the United States, and quite different from the "United Nations Education, Social and Cultural Organization" (UNESCO) standard recommendation of 26% for education in developing countries. This and other factors have led to the many strikes of the ASUU in Nigerian public universities. For example, the recent ASUU strike spanning from the 14th of February to October 2022 erupted because the government refused to execute existing agreements between it and the union since 2009. The causes of strikes have been documented. For example, as stated by the National Association of Universities Teachers (NAUT) [4], the ASUU strike was caused by pitiable remunerative structure and conditions of service, corrosion of university autonomy and academic freedom, under-funding of universities, delayed disbursement of the elongated salary structure, and pitiable physical conditions of work in the universities. Additionally, Ojeifo [5] opined that strikes which are the last resort during negotiation are usually undertaken by labor unions when talks have broken down during collective bargaining and may occur immediately after or just before the contract/agreement expires.

To weaken the strength of the members of ASUU and because of no-work-no-pay during strike action, the government often stops their salaries [6]. One would wonder if the lecturers were not working if classroom duties such as teaching are usually only one among the tripartite roles of a university scholar [7]. Therefore, we hypothesized that at such a period, there may be severe psychological and physical distress among those who earn a living from the operation of public universities, lecturers, parents/guardians, and students. Living without salaries for months may natively affect their ability to feed, pay rent/children fees, and cater for illness hence resulting in brain drain and increased mortality during the strike.

Psychological distress such as stress, anxiety, and depression [8] is the most common mental disorder (CMD). For example, CMDs which are the foremost cause of disability globally [9] include depression, anxiety, somatic symptoms, backache, and headache [10-12]. There is an increased risk of death especially by suicide and morbidity in persons with psychological distress and abuse of substances [13].

Psychological distress is also experienced to be heightened during pandemics. For example, during the COVID-19 pandemic, the rate of anxiety, depression, poor sleep, fear [14, 15], and suicide [16, 17] was exacerbated. The level of depression and anxiety was as much as 82.4% and 81.7%, respectively among students, [18] while that of health workers was anxiety (48.4%), stress (35.2%), and depression (55.3%) [19], during COVID-19 pandemic.

Additionally, the psychological distress among teachers had been studied during the pandemic [20-26]. The key factor among other factors that caused these distresses was working continuously online under unfavourable conditions [27, 28]. For instance, it was reported that the beginning of virtual learning platforms followed by augmented household roles in India among female teachers increased the work burden and stress negatively impacted their psychological state resulting in aggressive and irritative behaviours [20]. There was a report of heightened post-traumatic stress disorder and anxiety among teachers in universities, colleges, and schools in China [24, 25]. Additionally, increased uncertainty, workload, negative news, health vulnerabilities, and concerns over the well-being of colleagues and students negatively impacted the psychological state of teachers in England [21, 22]. Other factors that can cause psychological distress among lecturers as indicated in a Polish study include associated employment status, altered quality and satisfaction of relationships, and number of children, [29] while, fear of the pandemic, loss of loved ones, unpaid work overload, sense of uncertainty, and home confinement-induced loneliness was documented among South and North American elderly female teachers [30, 31]. There is a lack of reports on the influence of industrial action on the psychological state of workers in Nigeria.

Psychological distress such as anxiety and depression has been reported less among individuals who perform regular physical activity (PA) [32]. As essential instrumental activities of daily living (IADL), PA and exercise are suggested for all people to prevent lifestyle-persistent diseases like diabetes, heart diseases, and obesity that are indicated for heightened psychological distress and are considered pandemic universally [33-35]. In contrast, mortality and morbidity because of inactive living have long become major concerns worldwide, predisposing many to noncommunicable diseases (NCDs) owing to their devastating consequence on key body systems like the musculoskeletal and cardiovascular systems [36-40].

Owing to its habitual nature, PA is mostly uncultured and requires self-will to be maintained and adhered to by many individuals in Africa [33]. Additionally, PA is assumed to be inadequate across the populace, particularly in town areas universally [41]. The United States Department of Health and Human Services [42] has recommended that all adults should engage in moderate PA for at least 30 minutes daily or vigorous PA for at least 15 minutes 5 days a week. However, overwhelming evidence has shown that in times of health distress such as during the recent lockdown during COVID-19, many individuals were not able to keep up with the above recommendation for PA [33]. Reports on how strikes would influence lecturers' PA are yet to be understood as there are currently no studies in this regard. It is a common belief that during health and economic distress including industrial actions/strikes (Nigerian education epidemic), there may be heightened psychological distress, and exploring the factors influencing them among striking workers may offer stepwise intervention to lessen it. This study therefore investigated the relationship between socioeconomic status, PA/exercise, and psychological distress, explored the predicting factors of depression and anxiety among the striking workers in Nigeria, compared the gender differences between subjects collected suggestions on ways to avert similar strikes in the future, and determined the death rate during the strike period.

Materials and Methods

Subjects

This cross-sectional study conveniently sampled lecturers aged 27-69 years from Nigerian public universities. The recruited subjects were Nigerian lecturers working in both federal and state universities affected by the strike. Additionally, only subjects who were members of ASUU, regularly utilized social media platforms (WhatsApp, Telegram, Messenger, Facebook, or Linked-in), understood spoken and written English language, and were residents of Nigeria participated in this study. The excluded subjects were lecturers who were seriously sick, or under any medication for an ailment that can affect their memory or working in universities not affected by the strike.

Instrumentation

The instruments used in this study as detailed in the study's protocol [43] include: 1) A structured questionnaire used to record socio-demographic parameters like age, residence, gender, academic rank, marital status, level of education, suggestions on ways to prevent the recurrence of the strike, and number of children, 2) The physical and socio-economic psychological distress questionnaire (PASDQ), and a seven-subscale fourteen-item self-reported questionnaire designed by the researchers. The first subscale has four questions labeled Q1-4 which enquire about the payment, family income, seeing anything positive about the strike, and alternate source of income scored on a two-point Likert scale. Similarly, the second subscale was also scored on a two-point Likert scale, however, it consists of two questions Q5-6 and enquires about lecturers/workers who have died and children who have dropped out of school because of the strike. Also, the third subscale consists of two questions (Q8-9) asking about contemplating changing jobs or leaving the country. The job security was assessed on a four-point Likert scale. The fourth-to-fifth and sixth subscales consist of four questions (Q10-11 and Q12-13) asking about the type, place, duration (minute/day), and frequency (days/week) of exercise. The seventh subscale enquires about the "time spent watching television in the past two weeks during the strike". The questionnaire was reviewed by 4 experts, 3 in PA, and an economist, one of whom was a lecturer with over ten years of experience in rendering community service, physiotherapy research, and teaching including adaptation and design of questionnaires. The reliability of the questionnaire was assessed by determining the level of agreement between items using the Cronbach α coefficient to assess the test-retest reliability. Twenty-eight subjects aged 19-53 years responded to the questionnaire twice. The second response was obtained one week after the first. The questionnaire's homogeneity was depicted by the agreement between the measured item with a Cronbach α ranging from 0.67 to 0.93 while the interclass correlation for the total subjects after one week was in the range of 0.26 to 0.88. The instrument was tested using Spearman's correlation and reliability analysis at α=0.05. Anxiety experienced by subjects in the past two weeks was assessed using the generalized anxiety disorder (GAD-7) which obtains responses via a four-point Likert scale (3=nearly every day, 0=not at all) with overall scores ranging between 0-20 [44]. It has a record of excellent internal consistency with a Cronbach's α of 0.911 and a validated measure for anxiety screening. The prevalence of depression among the subjects was determined by the patient health questionnaire (PHQ-2). This self-administered two-item outcome measure obtains responses via a four-point Likert scale (nearly every day=3, not all=0) with the overall score ranging from 0-6 [45]. The positive predictive value, specificity, and sensitivity were recorded as 36.9-92.9, 65.4-99.8, and 12.3-90.6, correspondingly. The optimal cut-point for

determining the presence of anxiety is 3 however; major depressive disorder is indicated by scores >3 and would require further screening with PHQ-9 [45]. These instruments were jointly called the university strike physical and psychological distress questionnaire (USPAPDQ).

Procedure

As depicted in the study's protocol [43], the Health Research Ethic Committee (HREC) of the University of Medical Sciences (UNIMED) of Ondo State granted the authorization for the execution of this study. The informed consent was obtained from the subjects after enlightening them about the purpose of the study. The online response was obtained from social media handles like Facebook, LinkedIn, WhatsApp, Telegram, and Messenger. Prospective subjects were asked to click the virtual link sent to the above social media handle and read the preliminary information before choosing to partake. The preliminary information consists of a brief enlightenment about the study and an invitation to voluntary anonymous participation. The subjects were also informed that only a single response was required, and the overall responses would be aggregated without an identification of the name of the subject who gave a particular response. Subjects consented to participate by clicking "yes" to continue with the survey while those who did not wish to participate could click "no" to end the survey without being penalized. However, for the hard copy survey, written informed consent was requested by thumbprint or signature. The subjects did not receive any reward or gift for participating, but they were informed that the study's findings would be available upon request to those who showed interest.

Data analysis

The response from the online survey was downloaded using Microsoft Excel. The extracted data were then coded and cleaned in the statistical package for social scientists software (SPSS), version 23 for data analysis. The physical, socio-economic, and demographic parameters of subjects were summarized using descriptive statistics (mean/standard deviation, percent, and frequency). The data normality was determined by the Kolmogorov–Smirnov test. Abnormal data were log-transformed to base 10. The relationship between anxiety and depression and each of age, family income, academic rank, frequency, duration, and intensity of exercise was assessed using the Spearman rank correlation coefficient. Man-Whitney U-test was used to determine the gender variation in frequency, duration, and intensity of exercise, depression, anxiety, and number of publications among the subjects. The predictors of anxiety and depression among the subjects were assessed using multiple linear regression, at a significant level of $P<0.05$.

Results

The physical characteristics of the subjects

A total of 234 lecturers from public universities in Nigeria participated in this study. Their mean age was 45.4±10.36 years (range attained: 27-69 years) including 159 males (67.9%) and 75 females (67.9%). Many of them were married 191(81.6%), 125(53.4%) had attained a doctor of philosophy (PhD), 182(77.8%) were living with their spouse and children, 159(67.9%) had 2-5 children, and 163(69.7%) suggested that the government should honour agreements with them to resolve the strike (Table 1). The mean number of papers written/published, frequency in days/week, duration (minutes/day), and intensity (minutes/week) of exercise, and the number of lecturers that died during the strike were 4.00±5.818, 2.19±1.63 days/week, 30.49±29.82 minutes/day, 90.73±135.10 minutes/week, and 3.52±2.245 (n=181), respectively (Table 2).

As shown in Table 3, 155 subjects (66.2%) had no steady family income, 225 subjects (96.2%) were not paid throughout the strike, 157 subjects (67.1%) had no alternate source of income, 171 subjects (73.1%) saw something positive about the strike with a reason, and 101 subjects (43.2%) had more time for their research work. Additionally, 91 subjects (38.9%) strongly disagreed that they were afraid of their job security because of the strike, however, 79 subjects (33.8%) strongly agreed that they were contemplating leaving the country or changing their jobs if the strike persist. The type and place of exercise, time spent watching television, and classification of GAD and PHQ-2 are presented in Table 4. One hundred and ten subjects (47.0%) had minimal anxiety, 67 subjects (28.6%) had mild anxiety, and 31 subjects (13.2%) had severe anxiety. Using a cut-point of ≥8 for the presence of reasonable anxiety disorder, 79 subjects (33.8%) had anxiety disorder compared to 155 subjects (66.2%) with no anxiety disorder. However, those who had a PHQ-2 score of <3 (163, [69.7%]) were more than those with a score >3, (71 [30.3%]). Additionally, 103 subjects (44%) reported that their exercise type was brisk walking and that this exercise was done in the comfort of their homes (96 [41%]) while time spent watching television was reported to be less than 1 hour/day (76 [32.5%]).

Table 1. The sociodemographic and physical characteristics of the subjects (n=234)

Variables		No. (%)
Gender	Male	159(67.9)
	Female	75(32.1)
Marital status	Married	191(81.6)
	Single	33(14.1)
	Other (divorced or widowed)	10(4.3)
Age group (y)	18-35	53(22.6)
	36-60	161(68.8)
	>60	20(8.5)
Academic rank	Graduate assistant	14(6.0)
	Assistant lecturer	49(20.9)
	Lecturer II	39(16.7)
	Lecturer I	38(16.2)
	Senior lecturer	36(15.4)
	Reader	27(11.5)
	Professor	31(13.2)
Level of education	Bachelor of science (BSc)	8(3.4)
	Masters of science (MSc)	101(43.2)
	Doctor of philosophy (PhD)	125(53.4)
Location of residence	South-south	166(70.9)
	South-east	10(4.3)
	South-west	49(20.9)
	North-east	2(0.9)
	North-west	3(1.3)
	North-central	4(1.7)
Living condition	Living alone	41(17.5)
	Living with parents/guardians	11(4.7)
	Living with spouse/children	182(77.8)
	Number of children	41(17.5)
	0 child	22(9.4)
	1 child	159(67.9)
	2-5 Children	12(5.1)
	>5	
Suggestions on ways to resolve strikes	Government should honour agreements	163(69.7)
	Salary increments for academic	31(13.2)
	Revitalization of universities	10(4.3)
	Increase the budget for education	23(9.8)
	Use of a university-friendly platform to pay lecturers	7(3.0)
Leaving home	Never	8(3.4)
	Once	44(18.8)
	2-5 times	105(44.9)
	>5 times	77(32.9)

Table 2. Age, number of papers written during the strike, during exercise, report of death, anxiety, and depression of subjects

Variables	All (n=234)	Male (n=159)	Female (n=75)
Age (y)	45.4±10.36	44.12±9.702	48.11±11.222
Number of papers/conferences attended during the strike	4±5.82	4.19±6.04	3.57±5.323
Frequency of exercise (days/week)	2.19±1.63	2.20±1.56	2.16±1.76
Duration of exercise (minutes/day)	30.49±29.82	33.21±32.69	24.73±21.64
Intensity of exercise minutes/week	90.73±135.10	97.55±151.29	76.27±90.99
Number of lecturers that died during the strike	3.52±2.245 (n=181)	3.57±2.246 (n=129)	3.38±2.259 (n=52)
Generalized anxiety disorder (GAD-7)	6.06±5.89	6.15±5.999	5.87±5.686
Patient health questionnaire (PHQ-2)	1.78±1.82	1.87±1.876	1.59±1.677

Relationship between subject's psychological distress, exercise, and psychological socioeconomic status during the strike

In Table 4, a significant negative relationship was depicted between anxiety and age (r=-0.27; P<0.01), academic rank (r=-0.27; P<0.01), level of education (r= -0.19; P<0.01), children dropped out of school (r=-0.17; P<0.01), afraid of my job security (r=-0.29; P<0.01), contemplating changing my job (r=-0.40; P<0.01) and numbers of children (r=-0.19; P<0.01) however, the relationship between anxiety and alternate source of income (r=0.19; P<0.01), family income (r=0.21; P<0.01), and seeing anything positive about the strike (r=0.29; P<0.01) was positive and significant. Additionally, there was a negative significant correlation between anxiety and each of frequency (r=-0.18; P<0.01), duration (r= -0.16; P=0.02), and intensity (r=-0.23; P<0.01) of exercise. Also a significant negative correlation was established between depression and age (r=-0.31; P<0.01), academic rank (r=-0.31; P<0.01), level of education (r= -0.26; P<0.01) number of papers written during the strike (r=-0.15; P=0.02), children dropped out of school (r=-0.14; P=0.03), afraid of my job security (r=-0.28; P<0.01), contemplating changing my job (r=-0.37; P<0.01) and numbers of children (r=-0.21; P<0.01). However, the relationship between depression and time spent watching television (r=0.20; P<0.01), seeing anything positive about the strike (r=0.21; P<0.01), alternate source of income (r=0.24; P<0.01), and family income (r=0.19; P<0.01) was significant and positive. A significant negative relationship was also established between depression and frequency (r=-0.28; P<0.01), duration (r=-0.21; P<0.01), and intensity (r=-0.30; P<0.01) of exercise.

Factors influencing depression and anxiety among lecturers during the strike

For anxiety (GAD-7), the results of this study showed an indication of significance in the model, F-ratio= 5.77, P=0.00, R=0.571, or 57%. Thus, the model explains 57% of the difference in anxiety. The variables that significantly predict anxiety were marital status (β=-0.207, P<0.01), contemplation on changing my job if the strike continues (β=-0.198, P<0.01), seeing anything positive about the strike (β=0.178, P<0.01), and the number of children (β=-0.193, P<0.01).

A significance was depicted in the model summary of depression (PHQ-2), F-ratio= 6.126, P=0.00, R=0.582 or 58%. Therefore, the model was able to explain 58% of the variation in depression. The variable that significantly predicts depression was an alternate source of income (β=0.126, P=0.04), contemplation on changing my job if the strike continues (β=-0.149, P=0.03), seeing anything positive about the strike (β=0.118, P=0.05), and time spent watching (β=0.124, P=0.03) television. Although not significant, the frequency of exercise in days/week and the intensity of exercise in minutes/week had a negative influence on depression. Additionally, afraid of my job security (β=-0.119, P=0.06) and number of children (β=-0.131, P=0.08) were near but non-significant predictors of depression. However, academic rank and level of education negatively but not significantly predict anxiety and depression (Table 5).

Table 3. Socio-economic psychological status of the subjects

Variables		No. (%)
Do you have a steady family income?	Yes	79(33.8)
	No	155(66.2)
I have been paid throughout this strike.	Yes	9(3.8)
	No	225(96.2)
I have an alternate source of income.	Yes	77(32.9)
	No	157(67.1)
Do you see anything positive about this strike?	Yes	171(73.1)
	No	63(26.9)
If yes, please give a reason.	Not answered	66(28.2)
	More time to rest	19(8.1)
	More time for exercise	4(1.7)
	More time for family	44(18.8)
	More time for my research work	101(43.2)
Do you have a child who is out of school because I am unable to pay fees?	Yes	37(15.8)
	No	197(84.2)
Do you know any lecturer who has died during this strike?	Yes	189(80.8)
	No	45(19.2)
I am afraid for my job security because of this strike.	Strongly agree	33(14.1)
	Agree	47(20.1)
	Disagree	63(26.9)
	Strongly disagree	91(38.9)
I am contemplating changing my job or leaving the country if this strike continues.	Strongly agree	79(33.8)
	Agree	53(22.6)
	Disagree	48(20.5)
	Strongly disagree	54(23.1)

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Gender difference: Age, number of papers, number of deaths, participation in exercise, anxiety, and depression

There was no gender difference between age, the number of papers written during the strike, frequency, duration, intensity of exercise, and anxiety/depression among the striking lecturers (P>0.05) (Tables 6 and 7).

Discussion

The ASUU strike which is now regarded as the Nigerian public university education epidemic erupted because the government refused to execute existing agreements with the union since 2009. The government has often withheld the salaries of lecturers on grounds of no-work-no-pay which has often reduced the sustenance of such strikes, however, it may have led to deleterious aftermath, especially regarding the health and psychological well-being of the scholars.

The present study assessed the psychological and physical impact of the strike among lecturers in public universities in Nigeria. We, therefore, assessed the correlation between psychological distress (anxiety and depression), socioeconomic status, and physical activity/exercise among striking workers. Additionally, we explored the factors influencing anxiety and depression

Table 4. The type, and place of exercise and hours spent watching television and psychological distress

Variables		No. (%)
Type of exercise	Dancing	18(7.7)
	Brisk walking	103(44.0)
	Jogging	53(22.6)
	Skipping	4(1.7)
	Cycling	7(3.0)
	Others [yoga, weight-lifting, etc.	25(10.7)
	None	24(10.3)
Place of exercise	At home	96(41.0)
	Along the street in my neighborhood	87(37.2)
	In the gym	5(2.1)
	Playground/football field	15(6.4)
	Recreational park/stadium	7(3.0)
	None	24(10.3)
Hours spent watching television per day	<1 hour/day	76(32.5)
	1-2 hours/day	59(25.2)
	2-3 hours/day	31(13.2)
	3-4 hours/day	31(13.2)
	4-5 hours/say	22(9.4)
	5-6 hours/day	7(3.0)
	6-7 hours/day	1(0.4)
	>7 hours/day	7(3.0)
Generalized anxiety disorder	0-4 (minimal anxiety)	110(47.0)
	5-9 (mild anxiety)	67(28.6)
	10-14 (moderate anxiety)	26(11.1)
	>15 (severe anxiety)	31(13.2)
Patient health questionnaire (PHQ-2) for depression	<3 optimal cut point	163(69.7)
	≥3 likelihood of major depression	71(30.3)

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among the striking lecturers, compared the gender differences in the collected data, and gathered responses as ways to curb future strikes and death rates during the strike.

This study found a significant negative tenuous relationship between anxiety and age, level of education, academic rank, children dropping out of school, contemplating changing their jobs, being afraid of job security, and the number of children indicating an inverse relationship. However, for anxiety and alternate sources of income, family income, and seeing anything positive about the strike, the relationship was positively significant and tenuous. Accordingly, a tenuous negative sig-

Table 5. The relationship between psychological distress, exercise, and socio-economic psychological status of the subject during the strike

Variables	Anxiety (GAD-7) r; P	Depression (PHQ-2) r; P
Gender	-0.01; 0.865	-0.06; 0.353
Age	-0.27**; <0.01	-0.31**; <0.01
Marital status	0.06; 0.36	0.14*; 0.03
Academic rank	-0.27**; <0.01	-0.31**; <0.01
Level of education	-0.19**; <0.01	-0.26**; <0.01
Number of papers written during the strike	-0.11; 0.11	-0.15*; 0.02
Location of residence	-0.12; 0.08	-0.17**; <0.01
Family income	0.21**; <0.01	0.19**; <0.01
I have been paid throughout the strike	-0.10; 0.13	-0.06; 0.36
I have an alternative source of income	0.19**; <0.01	0.24**; <0.01
Children drop out of school because of the inability to pay fees	-0.17**; <0.01	-0.14*; 0.03
Frequency of leaving home	-0.04; 0.56	-0.08; 0.19
I am afraid for my job security because of this strike	-0.29**; <0.01	-0.28**; <0.01
Contemplating changing my job if this strike continues	-0.40**; <0.01	-0.37**; <0.01
Do you see anything positive about this strike	0.29**; <0.01	0.21**; <0.01
Frequency of exercise in days/week	-0.18**; <0.01	-0.28**; <0.01
Type of exercise	-0.023; 0.73	0.066; 0.31
Place of exercise	-0.002; 0.97	0.001; 0.99
Duration of exercise in minutes/day	-0.16*; 0.02	-0.21**; <0.01
Intensity of exercise in minutes/week	-0.23**; <0.01	-0.30**; <0.01
Time spent watching television	0.10; 0.18	0.20**; <0.01
Living condition	-0.10; 0.16	-0.14*; 0.03
Number of children	-0.19**; <0.01	-0.21**; <0.01

r=Spearman's rho; **Significant at <0.01, *Significant at <0.05, P>0.05=Not significant.

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nificant relationship was established between anxiety and frequency, duration, and intensity of exercise. Additionally, for depression, a significant negative tenuous relationship was established between depression and academic rank, level of education, number of papers written during the strike, children dropping out of school, afraid of job security, contemplation on changing my job, and number of children. Accordingly, the relationship between depression and the frequency, duration, and intensity of exercise was negatively significant and tenuous. In contrast, a significant tenuous positive relationship was established between depression and the time spent watching television, seeing anything positive about the strike, having an alternate source of income, and family income.

We also assessed the factors influencing anxiety and depression among the striking scholars. The model for anxiety was significant and was able to explain 57% of the variation in anxiety. The significant negative predic-

Table 6. Gender difference between age, number of papers, number of deaths, participation in exercise, depression. and anxiety

Variables	Male (n=159)	Female (n=75)	Z	P
Number of papers written during the strike	117.94	116.56	-0.148	0.88
Number of lecturers that have died	91.71 (n=129)	89.23 (n=52)	-0.293	0.77
Frequency of exercise in days/week	118.32	115.75	-0.302	0.76
Duration of exercise minutes/day	122.32	107.27	-1.609	0.11
Intensity of exercise minutes/week	120.64	110.84	-1.048	0.29
Anxiety	118.01	116.41	-0.170	0.87
Depression	120.24	111.69	-0.930	0.35

Table 7. Showing factors influencing anxiety and depression among lecturers during the strike

Variables	Anxiety (GAD-7)		Depression (PHQ-2)	
	β	P	β	P
Age	0.078	0.45	0.006	0.95
Marital status	-0.207*	0.01	-0.086	0.28
Academic rank	-0.144	0.16	-0.091	0.37
Level of education	-0.002	0.98	-0.067	0.37
Number of papers written during the strike	-0.019	0.75	-0.071	0.23
Family income	0.077	0.21	0.041	0.49
Paid salary	-0.057	0.33	-0.061	0.29
Alternate source of income	0.092	0.13	0.126*	0.04
Children drop out of school	-0.072	0.23	-0.069	0.24
Afraid of my job security	-0.114	0.08	-0.119	0.06
Contemplating changing my job if this strike continues	-0.198	0.01	-0.149	0.03
See anything positive about the strike	0.178**	0.01	0.118	0.05
Frequency of exercise in days/week	0.040	0.73	-0.071	0.54
Duration of exercise in minutes/day	0.166	0.30	0.128	0.42
Intensity of exercise in minutes/week	-0.334	0.11	-0.269	0.19
Time spent watching television	0.076	0.19	0.124	0.03
Living condition	-0.074	0.36	-0.050	0.53
Number of children	-0.193*	0.01	-0.131	0.08

**P<0.01; *P<0.05; P>0.05=not significant.

tors of anxiety among the striking scholars were marital status, contemplating changing my job if the strike continues, seeing anything positive about the strike, and the number of children. The highest and least negative significant predictors of anxiety were marital status and seeing anything positive about the strike. Factors that have been reported to negatively impact the psychological state among lecturers in England are increased uncertainty, workload, negative news health vulnerabilities, and concerns over the well-being of colleagues and students [21, 22]. The implication of this finding is as follows: Those who divorced or strongly disagreed that they were contemplating changing their job or saw nothing positive about the strike or had a higher number of children experienced less anxiety. Similarly, factors that can predict psychological distress as reported in a recent Polish study among lecturers during the recent pandemic lockdown included the colleague employment status, number of children, and changes in relationship quality and satisfaction [29].

The model for depression was also significant and was able to explain 58% of the variance in depression. The significant positive predictors of depression were having an alternate source of income, seeing anything positive about the strike, and time spent watching television indicating that those who answered no to having an alternate source of income or spent more hours watching television had higher levels of depression. A recent study by Lizana et al. [30] and Baker et al. [31] on the cause of depression among lecturers during the pandemic lockdown includes a sense of uncertainty, and unpaid workload among other factors which is similar to our findings indicating that those who had no alternate source of income and have not been paid throughout the strike had a higher level of depression. Accordingly, our findings that lecturers who spent more hours watching television had higher depression corroborate with the results of Chen et al. [46] and Owen et al. [47] indicating that increased time spent sitting and watching television may negatively impact the health condition of individuals. Additionally, the significant negative predictor of depression was contemplation on changing my job. This indicates that those who strongly disagreed that they were contemplating changing their job had less depression than those who strongly agreed. Accordingly, although not significant, the frequency and intensity of exercise had a negative influence on depression, indicating that higher frequency and intensity of exercise reduced the level of depression among the striking lecturers. This result may be accredited to the health-enhancing benefits of regular engagement in exercise which include elevation of mood/emotional stability, prevention, and reduction of risk of developing disease conditions such as heart attack, diabetes, and hypertension [48, 49]. A reduction in the intensity and frequency of exercise has been reported to exacerbate psychological health conditions like depression and anxiety [50, 51]. People experiencing depression and anxiety are at increased risk of mortality and morbidity, especially death by suicide and abuse of substances [13]. The United States Department of Health and Human Services (USDHHS) [42] has recommended that people should participate in no less than 30 minutes of daily moderate exercise or a daily vigorous exercise of 15 minutes especially during the lockdown. However, most of this study's subjects were unable to keep up with this recommendation which may be a reason for the non-significant finding between psychological distress and frequency/intensity of exercise. This finding corroborates with the recent report that in times of distress, most individuals were unable to meet the above recommendation [33]. A similar result was found between depression and academic rank and level of education with a non-significant negative influence on depression. Accordingly, this indicates that those with a higher academic rank (professors) and higher education (PhD) had less depression. This result may be accredited that lecturers who are professors may have had an alternate source of income such as lecturing in private universities or had a steadier family income compared to those with a lower academic rank.

The prevalence of anxiety among the striking scholar was 33.8% (using a cut-point for anxiety disorder of ≥8) while that of depression was 30.3% (cut-point of ≥3 for the likelihood of major depressive disorder). Using a cut point of 8 for the presence of anxiety as considered in the present study enhances the sensitivity of GAD-7 in determining the prevalence of anxiety without compromising specificity [52]. The prevalence of psychological distress as found in this study was lower than that of a recent report of psychological distress among students and health workers during the pandemic. These studies found the prevalence of depression and anxiety to be high at 82.4% and 81.7%, respectively, for students' anxiety (48.4%) and depression (55.3%) for health workers [18, 19].

Most of the striking scholars were still carrying out their basic duties as pertains to research and community service except classroom duties, with a report of a mean of 4.00±5.818 number of papers written and published during the strike. This corroborates that classroom duties such as teaching are just part of the tripartite role of a university lecturer [7]. However, it is a common belief that most Nigerians are not aware of this tripartite role,

since most of them believe that classroom duties are the only role executed by the scholar. This belief is inconsistent with the reality that university scholar's duties are tripartite and include teaching as well as service and research with service being the most challenging one [7].

Finally, as regards the suggestions of ways to curb such a strike shortly most scholars think that if the government honours the agreements already reached during collective bargaining such a strike would be unheard of shortly. A previous study has, however, recommended that to resolve such strikes, a strong forum for all active actors to deliberate issues of concern should be created instead of engaging in strikes [53].

Conclusion

The significant negative predictors of psychological distress include marital status, contemplating changing my job, and the number of children, and the positive predictors were seeing anything positive about the strike, an alternate source of income, and time spent watching television. The government may prevent the reoccurrence of strikes by honoring existing agreements. Further assessment is needed for those with a likelihood of major depression.

Strengths and limitations of the study

Cautions should be exercised while interpreting this study's findings because of various limitations. First, the cross-sectional nature of the collected data may impede a causal correlation between physical activity or exercise, psychological distress, and the socio-economic status of the subjects. Second, the small nature of the sample obtained using a non-probability technique may preclude the generalization of the result. Third, the duration and frequency of exercise may be less or more than the value report, since they were only approximations, and lecturers who showed a likelihood of developing major depressive disorders were not further assessed with PHQ-9. Notwithstanding, this study provides overwhelming information about the effect of strikes on the physical and psychological state of lecturers in Nigeria.

Ethical Considerations

Compliance with ethical guidelines

The approval to conduct this study was granted by the Health Research Ethic Committee (HREC) of the University of Medical Sciences, (UNIMED), Ondo State. The subjects gave informed consent in clicks and writing.

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Authors' contributions

All authors adequately contributed to preparing this article.

Conflict of interest

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