

ASSESSING THE IMPACT OF PHYSICAL EXERCISE ON WORK PERFORMANCE AND JOB SATISFACTION

Riju AHMED 

Leading University, Sylhet, Bangladesh
rijuahmed1000@gmail.com

Md. Abdul Muhith CHOWDHURY 

Leading University, Sylhet, Bangladesh
muhith@lus.ac.bd

Sunny Ahmed RIFAT 

Leading University, Sylhet, Bangladesh
sunny.bba62@gmail.com

Mahmuda YEASMIN 

Leading University, Sylhet, Bangladesh
mahmudaybba23@gmail.com

Abstract

The importance of physical well-being in augmenting work performance has increased in recent years and has drawn considerable academic interest. This study assessed the perceived association of regular physical exercise with work performance and job satisfaction among professionals working in private universities in Bangladesh. The paper sought to ascertain the significance of physical exercise on work performance and job satisfaction from the perspectives of the service holders of Bangladesh. Data were collected through structured questionnaires from a total of 125 participants, comprising 80 faculty members and 45 administrative staff from different private universities. The data were analysed using SPSS 26 through various statistical methods, including descriptive statistics, reliability tests, t-tests, zero-order correlation, partial correlation, and two-way ANOVA. The analysis sheds light on understanding whether regular physical exercise is associated with job satisfaction and overall work efficiency among employees. Research findings show a positive correlation between regular physical exercise and work performance, in terms of higher job satisfaction and a lower rate of absenteeism. The paper also illustrates the impact of moderating constructs, such as age, experience, gender, and job title, on the initial findings. It reveals that age, experience, and gender have little association, whereas job title has a considerable impact on the relationships between the outcome variables and the predictor variables. The study contributes to highlighting the importance on occupational health and well-being and provides actionable insights for universities to foster healthier and more productive work environments.

Keywords: Work performance, Job satisfaction, Exercise, Absenteeism.

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1. INTRODUCTION

The vibrant and changing nature of the work environment, specifically in private universities, requires a continual pursuit of actions to ensure employee well-being and productivity. Higher education institutions in Bangladesh have experienced rapid growth (Islam & Salma, 2016), which compounds workloads and performance expectations for academic and administrative personnel. The role of physical exercise as a means to increase mental satisfaction, stress management, and overall work engagement is globally recognized. Numerous global studies have been conducted to link physical exercise to cognitive function, emotional stability, and enhanced job satisfaction. Etemadi et al. (2016) reviewed articles from 1969 to 2015 and empirically validated that employee turnover, absenteeism, and health care costs decrease by a significant margin through health promotion programs, including physical and mental health exercise. The study shows university employees spend at least 75% of their time seated (Fountain et al., 2014). However, a limited study is contextualized within the academic arena, specifically in the private university context in Bangladesh, regarding these concerns. This paper seeks to address the gap by conducting a perceptual analysis and aims to offer empirical insights contributing to a more congenial and productive work environment. The subsequent segment reviews the existing literature on the relationship between physical activity, work performance, and job satisfaction.

2. LITERATURE REVIEW, RESEARCH GAP, AND HYPOTHESES DEVELOPMENT

Nowadays, a fast-paced, challenging workplace with higher stress but greater growth opportunities is somewhat the reality; thus, the need for effective strategies is even more essential to enhance efficiency. The strong connection between physical activity and mental well-being has been frequently underscored by research revealing that, to boost cognitive function, uplift mood, and elevate energy levels, regular exercise can be of use. The reviewed literature indicates that embedding physical activity in a daily routine works as an antidote to the stress and fatigue that plagues work environments. According to Sun et al. (2022), inadequate physical activity (PA) is a major risk factor for non-communicable diseases. However, employees may benefit from PA for both health and work productivity. Workplace exercise programs have been shown to foster quality of life and mitigate occupational stress and burnout syndrome (Martinez, 2021). Regular physical activity enhances both psychological and physical performance, as well as work

performance, while decreasing sickness and absenteeism (Masala et al., 2017). These outcomes directly support the idea that exercise improves focus, energy levels, reduces cognitive pressure, lowers health issues, and mitigates sick leave. Regular aerobic and strength-based exercises have been shown to enhance cognitive flexibility and executive function, both of which are essential for effective decision-making and problem-solving in workplace settings (Hillman et al., 2008). Meta-analytic findings by Chu et al. (2014) indicate that physically active employees exhibit greater work engagement and reduced job-related fatigue, thereby further reinforcing the link to improved work performance. Moreover, regular physical activity reduces illness and absenteeism, directly supporting the link between exercise and reduced sick leave. Employees who exercise consistently tend to exhibit enhanced immune function and overall improved health, contributing to more consistent workplace attendance (López-Bueno et al., 2020). A workplace wellness study by Parks & Steelman (2008) found that organizations implementing exercise programs saw a 15–25% reduction in employee absenteeism within the first year. Another study reported that employees who engaged in a 12-week fitness program took significantly fewer sick days than their sedentary counterparts (Proper et al., 2002). Exercise programs for university faculty and staff have improved aspects of physical fitness, balance, flexibility, and muscular endurance (Rebold et al., 2015). Besides, Muscular endurance has been associated with job satisfaction, suggesting a link between fitness and occupational success. Interestingly, a study by Loprinzi & Frith (2019) found that male employees reported more frequent engagement in moderately to vigorously intense physical activity during the workweek, which correlated with slightly higher productivity metrics, suggesting a possible gender-based exercise-performance link. However, gender differences may stem more from differences in access, motivations, and societal norms around exercise than physical capacity alone (Guthold et al., 2018), which should be considered in interpreting whether job satisfaction can positively predict work performance.

2.1 Theoretical framework

We adopted the Job Demands-Resources (JD-R) model as the primary compass guiding theoretical exploration. According to the Job Demands-Resources (JD-R) model, Bakker & Demerouti demonstrate that job demands, including workload and emotional toll, can negatively affect employee well-being, whereas job resources, including regular exercise, enhance performance and motivation. Exercise improves physical and mental resilience, reduces stress, and boosts energy, all of which contribute to enhanced job performance and focus. This is complemented by Social Cognitive Theory, which emphasizes that exercise boosts self-efficacy, which enhances resilience and stress management, leading to better problem-solving and performance at work (Bandura, 1991). Additionally, Work-Recuperation Theory points out that physical exercise facilitates recovery from work-related stress, replenishing mental

and physical energy and thereby improving productivity (Meijman, 1998), aligning with the positive performance outcomes of regular exercise. In a longitudinal study, employees who engaged in regular physical activity experienced a substantial decline in apparent stress and emotional exhaustion over six months (Gerber et al., 2013), indicating that persisting commitment to physical activity has cumulative benefits for work performance. From these theories, we gain a coherent understanding of how regular physical exercise is expected to improve overall work performance, job satisfaction, and work attendance among private university professionals in Bangladesh.

2.2 Research gap

The majority of empirical research on the relationship between physical exercise and workplace outcomes originates from developed, high-income economies where institutions prioritize corporate wellness infrastructure, health insurance incentives, and formal fitness programs. Extending to developing-country contexts, workplace exercise is a relatively underexplored intervention, and even the limited existing work tends to focus on industrial or manufacturing sectors rather than the knowledge or academic sector (Sertel et al., 2016; Wattles & Harris, 2003). In particular, Bangladesh presents a unique professional environment that has not been addressed by the current research demonstrating the link between exercise and work performance. Besides, Private university faculty already face documented workload-induced strain: An examination of outcome-based education implementation at Dhaka universities found that faculty members' mental and physical health, job satisfaction, and overall well-being are greatly affected by pressure to meet performance benchmarks and OBE-related workload (Tamanna & Hossain, 2025). Similarly, cross-sector Bangladeshi research shows that workload pressures are positively associated with employee effectiveness, whereas job stress is negatively associated with performance; this mechanism operates within the teaching-research-administration triad typical of university professionals' roles (Das et al., 2024). At the same time, the sector has grown considerably, with 53 public, 107 private, and 3 international universities enrolling nearly one million students (Rahman et al., 2026), making faculty and administrative well-being an important issue; yet empirical evidence in the context of Bangladeshi private universities remains limited. Despite this lack, no existing study has investigated the frequency and intensity of exercise in relation to cognitive health, stress management, job satisfaction, absenteeism, and work performance among private university professionals in Bangladesh. Also, there is no comparison of these effects covering both faculty and administration within the same organizational context. Therefore, this study bridges this gap by extending the exercise-performance literature beyond the developed-country and single-sector origins boundary.

2.3 Hypotheses

The impression of regular exercise on employees, along with its effect on their work performance, was examined by this study. Daily exercise is primarily associated with enhanced physical and holistic health and well-being, which may improve various job performance outcomes. The following null hypotheses are:

H1: Regular physical exercise is not positively related to work performance.

Puetz et al. (2006) found that chronic exercise reduces workplace fatigue and increases task-related energy levels. Mathieu et al. (2019) also report that employees who engage in physical activity demonstrate fewer productivity lapses and better teamwork.

H2: Regular physical exercise is not positively related to job satisfaction.

The relationship between regular exercise and job satisfaction is evident in multiple psychological studies. Vagasi (2025) found that physically active employees report higher moral and organizational commitment. Marshall (2020) found that non-participant employees have a lower level of both intrinsic and extrinsic job satisfaction compared to employees who took part in wellness programs.

H3: Regular physical exercise and work performance are not positively associated after controlling for age, experience, and job title.

Although work performance is influenced by job experience and hierarchical position, emerging evidence suggests that regular exercise exerts a distinct and measurable impact. Donnelly et al. (2016) found that physical activity contributes to improvement in executive function and attention across demographics. Controlling for job title and tenure, the positive association between regular exercise and work performance remains statistically significant, affirming that physical well-being contributes uniquely to occupational outcomes.

H4: Regular physical exercise and job satisfaction are not positively associated after controlling for age, experience, and job title.

When organizational factors such as tenure and role responsibilities are held constant, exercise continues to demonstrate a strong effect on job satisfaction. Childs & de Wit (2014) show that regular physical activity enhances emotional well-being and reduces burnout across all professional levels.

H5: There is no difference in the impact of regular physical exercise on work performance between male and female employees.

Biological and psychosocial differences may lead to varied outcomes of exercise on work performance across genders. Li et al. (2024) emphasize that workplace dynamics and cultural norms influence participation in wellness programs, potentially shaping these gendered outcomes. Additionally, Dodd et al., (2023) argue that tailoring wellness interventions to gender-specific needs improves both engagement and effectiveness in the workplace.

H6: Employees who perform regular exercise do not have higher job satisfaction than those who do not.

Empirical research supports a strong link between physical activity and job satisfaction. Dallmeyer et al. (2023) found that employees engaged in weekly leisure-time exercise reported higher satisfaction levels, primarily due to better health and recovery from stress. Similarly, de-Pedro-Jiménez et al. (2021) observed that active workers, especially women, experienced greater workplace contentment and lower stress. These findings suggest that regular exercise contributes meaningfully to employee well-being and satisfaction across diverse occupational contexts.

3. OBJECTIVES

The impact of regular physical exercise on multiple dimensions of work performance, holistic health perception, and job satisfaction among university faculty and administrative officers in private universities in Bangladesh is the primary objective of this paper.

In addition to that, this paper also possesses several specific objectives:

1. To determine if physical exercise has a strong positive association with work performance and job satisfaction.
2. To find out whether there is an affirmative correlation between regular exercise and occupational performance while controlling for age, work experience, and job title.
3. To find out whether there is a positive relation between regular exercise and job satisfaction while controlling for age, work experience, and job title.
4. To assess how regular exercise affects the work performance of both male and female employees.
5. To identify the differences in job satisfaction levels between individuals who engage in regular exercise and those who do not.

4. METHODOLOGY OF THE STUDY

4.1 Data and sample

A quantitative research approach and a cross-sectional survey design were used to explore the relational patterns between the impact of regular physical exercise on employees and how it affects work performance and job satisfaction. This research targeted the population that works full-time in the private university in Bangladesh: faculty members and administrative staff. Convenience and snowball sampling techniques were used in this research because, in the university, not everyone is willing to fill out the survey, so those who met the parameters and those who referred others were included in this survey. A

total of 125 participants responded to this survey, comprising 70.4% males and 29.6% females. Because there are studies that use a similar number of respondents for the survey, this research also sets this number, as it is convenient and easy to collect data efficiently and cost-effectively (Abdullah & Lee, 2012). Respondents include 80 faculty members and 45 administrative officers from private universities in Bangladesh. Both offline and online methods were used to gather data. The offline data collection was conducted using a hard copy of the questionnaire, while the online data were collected using Google Forms. Ethical principles were observed across the study, and participants were aware of the primary objective of the study prior to completing the survey. All participation was non-coercive, and respondents could withdraw at any stage without any problem. No personal information was acquired from the respondents, and all the responses were dealt with in secrecy and used exclusively for academic purposes. SPSS 26 was used for analysis. Pearson's r and partial correlation coefficients were interpreted as measures of effect size for correlation analyses, Cohen's d was reported for the independent-samples t -test, and partial eta squared (η^2_p) was reported as the measure of effect size for ANOVA.

4.2 Questionnaire design

A 5-point Likert scale ranging from 5 to 1 is used for data collection. Two main sections are part of this survey, which include: Part A, which encompasses subject demographic data, and Part B, which contains a set of questions as an instrument. It involved three variables: one independent and two dependent variables, each with five items. Some items were sourced from different journals, while others were adapted for the Bangladeshi context. The items of the independent variable were included from positive psychology in the working environment (Galanakis & Tsitouri, 2022). A dependent variable's items were obtained from the biology of Energy Expenditure (Suarez, 2011). We also used items from two other journals: the role of positive emotions in positive psychology (Fredrickson, 2001) and psychological aspects of workload (Meijman, 1998). The remaining items were developed by us according to our requirements. The journals' questionnaires were the primary resources for data collection, as they provided the relevant data needed for a comprehensive analysis of the research study.

4.3 Validity and reliability

TABLE 1. VALIDITY AND RELIABILITY

Construct	Items	Sample items	Response format	Cronbach's α	M	SD
FIE	5	"I maintain a consistent exercise schedule during busy periods"; "My exercise sessions last 30 minutes or more"	1-5 Likert (1=SD, 5=SA)	0.86	16.56	4.98
WP	5	"Exercise improves my focus and reduces mental stress at work"; "I am more	1-5 Likert (1=SD,	0.84	19.58	3.82

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		productive on workout days"	5=SA)			
JSLA	5	"Exercise improves my job satisfaction by increasing productivity and engagement"; "Consistent exercise minimizes health interruptions, improving attendance"	1-5 Likert (1=SD, 5=SA)	0.85	19.11	3.67

Source: Authors' research

4.4 Demographic information

For the descriptive analysis of the respondents, as shown in Table 2, there are 88 (70.4%) male and 37 (29.6%) female survey takers. In terms of the age of respondents, 15 (12%) are in the age group of less than 25 years. There are 67 (53.6%), 14 (11.2%), and 29 (23.2%) in the age groups 26-35, 36-40, and more than 40 years, respectively. As for the job title, 80 (64%) respondents are faculty members, and 45 (36%) respondents are administrative officers.

TABLE 2. DEMOGRAPHIC INFORMATION OF THE RESPONDENTS

Demographic information					
		Frequency	Percent	Valid percent	Cumulative percent
Gender	Male	88	70.40	70.40	70.40
	Female	37	29.60	29.60	100.00
	Total	125	100.00	100.00	
Age (years)	25 or less	15	12.00	12.00	12.00
	26-35	67	53.60	53.60	65.60
	36-40	14	11.20	11.20	76.80
	Above 40	29	23.20	23.20	100.00
	Total	125	100.00	100.00	
Work experience	6 months or less	11	8.80	8.80	8.80
	7 months - 1 year	14	11.20	11.20	20.00
	1 year - 3 years	34	27.20	27.20	47.20
	3 years - 5 years	15	12.00	12.00	59.20
	5 years – 10 years	13	10.40	10.40	69.60
	Above 10 years	38	30.40	30.40	100.00
	Total	125	100.00	100.00	
Job title	Faculty	80	64.00	64.00	64.00
	Administrative officer	45	36.00	36.00	100.00
	Total	125	100.00	100.00	

Source: Authors' research

There are 11 respondents (8.8%) with less than 6 months of work experience, 14 respondents (11.2%) with less than 1 year of work experience, 34 respondents (27.2%) with less than 3 years of work experience, 15 respondents (12%) with 5 years or less experience, 13 respondents (10.4%) with 10 years or less experience, and 38 respondents (30.4%) of above 10 years' work experience.

4.5 Descriptive results

Descriptive statistics show the narrative view of the contents included in a study. The study includes three constructs: Frequency and Intensity of Exercise (FIE), Work Performance (WP), and Job Satisfaction and

Low Absenteeism (JSLA). As shown in Table 3, the number of samples is 125. There are no missing values for any of the constructs.

TABLE 3. DESCRIPTIVE ANALYSIS

Descriptive statistics									
	N	Minimum	Maximum	Mean	Std. deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. error	Statistic	Std. error
FIE	125	5.00	25.00	16.56	4.98	-.31	.22	-.48	.43
WP	125	5.00	25.00	19.58	3.82	-.77	.22	.97	.43
JSLA	125	5.00	25.00	19.11	3.67	-.95	.22	1.99	.43
Valid N (listwise)	125								

Source: Authors' research

The rest of the table presents the mean, standard deviation, minimum, and maximum values for all the variables in this study, providing a concise overview of the study.

5. RESULTS AND DISCUSSION

SPSS 26 was used to conduct data analysis, which provided insight into individual experiences as well as enabling statistical analysis. At first, Descriptive statistics were computed. Secondly, Pearson's correlations were performed to examine the linear relationship between Frequency and Intensity of Exercise (as measured by FIE) and Work Performance (as measured by WP) and Job Satisfaction & Low Absenteeism (as measured by JSLA) separately. Thirdly, Partial correlations were used to explore the relationship of Frequency and Intensity of Exercise (FIE) on Work Performance (WP) and Job Satisfaction (JSLA) individually, while controlling for age, work performance, and job title. Fourthly, a two-way ANOVA systematically investigated the results of exercise frequency and gender on Work Performance (WP), where subjects were clustered into two gender groups (male and female) and three exercise frequency groups (Robust, Moderate, and Minimal). Lastly, an independent sample t-test was performed to evaluate the Job Satisfaction and Low Absenteeism (JSLA) scores among professionals with basic versus vigorous Frequency and Intensity of Exercise (FIE), based on the FIE variable.

5.1 Pearson's correlation

To measure the size and direction of the linear association among the scores of FIE, WP, and JSLA, a bivariate Pearson's product-moment correlation coefficient (r) was determined. The results are summarized in Table 4.

TABLE 4. PEARSON'S CORRELATION AMONG FIE, WP, AND JSLA (N=125)

		Correlations		
Variable		FIE	WP	JSLA
FIE	Pearson correlation	1	.414**	.437**
	Sig. (2-tailed)		.000	.000
	N	125	125	125
WP	Pearson correlation	.414**	1	.562**
	Sig. (2-tailed)	.000		.000
	N	125	125	125
JSLA	Pearson correlation	.437**	.562**	1
	Sig. (2-tailed)	.000	.000	
	N	125	125	125

*Note. Frequency and Intensity of Exercise (FIE), Work Performance (WP), and Job Satisfaction and Low Absenteeism (JSLA).

**p<.01, p<.05.

Source: Authors' research

5.1.1 Correlation of frequency and intensity of exercise with work performance

The bivariate correlation result shows the relationship between FIE and WP was positive and had a medium association, $r = 0.414$, $df = 123$, $p < .001$. The result indicates that exercise was positively associated with the work performance of individuals positively, though the degree of association was medium.

5.1.2 Correlation of frequency and intensity of exercise with job satisfaction and low absenteeism

The bivariate correlation result shows the relationship between FIE and JSLA was positive and had a medium association, $r = 0.437$, $df = 123$, $p < .001$. The result indicates that exercise impacts job satisfaction and low absenteeism positively, though the impact is medium.

5.1.3 Correlation of work performance with job satisfaction and low absenteeism

The bivariate correlation result shows the relationship between WP and JSLA was positive and had a strong association, $r = 0.562$, $df = 123$, $p < .001$. The result indicates that job satisfaction and low absenteeism are positively associated with work performance, and the impact is strong.

5.2 Partial correlation

5.2.1 Correlation among FIE, WP, and JSLA while controlling for age

In Table 5, partial correlation is reported to assess the relationship among FIE, WP, and JSLA while controlling for age.

TABLE 5. PARTIAL CORRELATION AMONG FIE, WP, AND JSLA CONTROLLING FOR AGE (N=125)

Control variables	Dependent variable		FIE	WP	JSLA
None	FIE	Correlation	1.000	.414	.437
		Significance (2-tailed)	.	.000	.000
		df	0	123	123
	WP	Correlation	.414	1.000	.562
		Significance (2-tailed)	.000	.	.000
		df	123	0	123
	JSLA	Correlation	.437	.562	1.000
		Significance (2-tailed)	.000	.000	.
		df	123	123	0
Age (years)	FIE	Correlation	1.000	.419	.437
		Significance (2-tailed)	.	.000	.000
		df	0	122	122
	WP	Correlation	.419	1.000	.569
		Significance (2-tailed)	.000	.	.000
		df	122	0	122
	JSLA	Correlation	.437	.569	1.000
		Significance (2-tailed)	.000	.000	.
		df	122	122	0

*Note. Frequency and Intensity of Exercise (FIE), Work Performance (WP), and Job Satisfaction and Low Absenteeism (JSLA).

**p<.01, p<.05.

Source: Authors' research

The outcome shows that there was no significant change in the results between zero-order correlation and partial correlation after controlling for Age. It indicates that Age does not have any major implications in the direction or the degree of the relationship between the variables.

5.2.2 Correlation among FIE, WP, and JSLA while controlling for work experience

TABLE 6. PARTIAL CORRELATION AMONG FIE, WP, AND JSLA CONTROLLING FOR WORK EXPERIENCE (N=125)

Control variables	Dependent variable		FIE	WP	JSLA
None	FIE	Correlation	1.000	.414	.437
		Significance (2-tailed)	.	.000	.000
		df	0	123	123
	WP	Correlation	.414	1.000	.562
		Significance (2-tailed)	.000	.	.000
		df	123	0	123
	JSLA	Correlation	.437	.562	1.000
		Significance (2-tailed)	.000	.000	.
		df	123	123	0
Work experience	FIE	Correlation	1.000	.413	.439
		Significance (2-tailed)	.	.000	.000
		df	0	122	122
	WP	Correlation	.413	1.000	.562
		Significance (2-tailed)	.000	.	.000
		df	122	0	122
	JSLA	Correlation	.439	.562	1.000
		Significance (2-tailed)	.000	.000	.
		df	122	122	0

*Note. Frequency and Intensity of Exercise (FIE), Work Performance (WP), and Job Satisfaction and Low Absenteeism (JSLA).

**p<.01, p<.05.

Source: Authors' research

In Table 6, partial correlation is reported to assess the relationship among FIE, WP, and JSLA while controlling for work experience.

There was a positive and moderate partial correlation between FIE and WP, controlling for Work Experience, $r=.413$, $df = 122$, $p<.001$, with high levels of FIE associated with a high level of WP. The result showed a moderate and positive partial correlation between FIE and JSLA, controlling for work experience, $r=.439$, $df = 122$, $p<.001$, with high levels of FIE associated with a high level of JSLA. The results show that there was no significant change in the results between zero-order correlation and partial correlation after controlling for experience. It indicates that experience does not have any major implications in the direction or the degree of the relationship between the variables.

5.2.3 Correlation among FIE, WP, and JSLA while controlling for job title

In Table 7, partial correlation is reported to assess the relationship among FIE, WP, and JSLA while controlling for job title.

TABLE 7. PARTIAL CORRELATION AMONG FIE, WP, AND JSLA CONTROLLING FOR JOB TITLE (N=125)

Control variables	Dependent variable		FIE	WP	JSLA
None	FIE	Correlation	1.000	.414	.437
		Significance (2-tailed)	.	.000	.000
		df	0	123	123
	WP	Correlation	.414	1.000	.562
		Significance (2-tailed)	.000	.	.000
		df	123	0	123
	JSLA	Correlation	.437	.562	1.000
		Significance (2-tailed)	.000	.000	.
		df	123	123	0
Job title	FIE	Correlation	1.000	.363	.358
		Significance (2-tailed)	.	.000	.000
		df	0	122	122
	WP	Correlation	.363	1.000	.535
		Significance (2-tailed)	.000	.	.000
		df	122	0	122
	JSLA	Correlation	.358	.535	1.000
		Significance (2-tailed)	.000	.000	.
		df	122	122	0

*Note. Frequency and Intensity of Exercise (FIE), Work Performance (WP), and Job Satisfaction and Low Absenteeism (JSLA).

** $p<.01$, $p<.05$.

Source: Authors' research

For exploration, Partial correlation is applied to check the interrelation between Frequency and Intensity of Exercise and Work Performance while controlling for job title. There was a positive and weak partial correlation between FIE and WP, controlling for Job Title, $r=.363$, $df = 122$, $p<.001$, with high levels of FIE associated with a high level of WP. The result illustrated a weak and positive partial correlation between FIE and JSLA, controlling for Job Title, $r=.358$, $df = 122$, $p<.001$, with high levels of FIE associated with a high level of JSLA.

5.2.4 Two-way ANOVA: effects of frequency and intensity of exercise and gender on work performance

A two-way between-groups analysis of variance was employed to examine the effect of FIE and Gender on WP. Table 8 shows that the independent variables were Gender (Male, Female) and FIE_3-Group (Minimal, Moderate, and Robust). For grouping, a data-driven method was applied. The values less than 50% have been considered as minimal, and those less than 75% have been considered as moderate frequency and intensity of exercise. The rest are considered in the robust group. The dependent variable was Work Performance.

TABLE 8. BETWEEN-SUBJECTS FACTORS

Between-subjects factors			
		Value label	N
FIE_3-Group	0-12 (Less than 50%)	Minimal	25
	13-18 (Less than 75%)	Moderate	54
	19-25 (Above 75%)	Robust	46
Gender	1.00	Male	88
	2.00	Female	37

*Note. Frequency and Intensity of Exercise (FIE).

Source: Authors' research

Here, Table 9 presents the descriptive results of the variables.

TABLE 9. DESCRIPTIVE STATISTICS

Descriptive statistics				
Dependent variable: work performance				
FIE_3-Group	Gender	Mean	Std. deviation	N
Minimal	Male	15.6250	4.57347	16
	Female	17.0000	4.52769	9
	Total	16.1200	4.51221	25
Moderate	Male	19.8421	2.93650	38
	Female	19.4375	3.44420	16
	Total	19.7222	3.06789	54
Robust	Male	21.1471	3.03647	34
	Female	21.6667	2.74138	12
	Total	21.2826	2.94138	46
Total	Male	19.5795	3.82587	88
	Female	19.5676	3.86250	37
	Total	19.5760	3.82113	125

*Note. Frequency and Intensity of Exercise (FIE).

Source: Authors' research

TABLE 10. LEVENE'S TEST OF EQUALITY

Levene's test of equality of error variances					
		Levene statistic	df1	df2	Sig.
WP	Based on mean	.865	5	119	.507
	Based on median	.605	5	119	.696
	Based on median and with adjusted df	.605	5	89.435	.696
	Based on the trimmed mean	.873	5	119	.502

*Note. Work Performance (WP).

Source: Authors' research

In Table 10, Levene's test was non-significant, $p > .05$, indicating homogeneity of variances.

Table 11 shows the results for tests of between-subjects effects.

TABLE 11. TWO-WAY BETWEEN-GROUPS ANOVA

Tests of between-subjects effects						
Dependent variable: work performance						
Source	Type III sum of squares	df	Mean square	F	Sig.	Partial eta squared
Corrected model	448.856	5	89.771	7.845	.000	.248
Intercept	35078.032	1	35078.032	3065.560	.000	.963
FIE_MMR	363.971	2	181.986	15.904	.000	.211
Gender	5.918	1	5.918	.517	.473	.004
FIE_MMR * gender	12.672	2	6.336	.554	.576	.009
Error	1361.672	119	11.443			
Total	49713.000	125				
Corrected total	1810.528	124				

*Note. Frequency and Intensity of Exercise (FIE).

Source: Authors' research

There was a statistically significant main effect for Frequency and Intensity of Exercise, $F(2, 119) = 15.904$, $p < .001$, with males and females with High Frequency of Exercise reporting high work performance. Nevertheless, the effect size was medium (partial eta squared = .211). There was no significant main effect for gender, $F(1, 119) = 0.517$, $p = 0.473$. The interaction effect between gender and frequency of exercise was not statistically significant, $F(2, 119) = 0.554$, $p = .576$. These findings suggest that work performance differs by frequency and intensity of exercise but not by gender or the combination of the two.

Table 12 shows post hoc tests for the FIE_3-Group. The post hoc comparisons using Tukey's HSD and Bonferroni indicated that there is a significant difference between the Minimal Group and the Moderate Group, as well as between the Minimal Group and the Robust Group. The comparison between the Moderate Group and the Robust Group was not significant.

TABLE 12. POST HOC TESTS

Multiple comparisons							
Dependent variable: work performance							
	(I) FIE_3-group	(J) FIE_3-group	Mean difference (I-J)	Std. error	Sig.	95% Confidence interval	
						Lower bound	Upper bound
Tukey HSD	Minimal	Moderate	-3.6022*	.81829	.000	-5.5444	-1.6601
		Robust	-5.1626*	.84051	.000	-7.1575	-3.1677
	Moderate	Minimal	3.6022*	.81829	.000	1.6601	5.5444
		Robust	-1.5604	.67871	.060	-3.1712	.0505
	Robust	Minimal	5.1626*	.84051	.000	3.1677	7.1575
		Moderate	1.5604	.67871	.060	-.0505	3.1712
Bonferroni	Minimal	Moderate	-3.6022*	.81829	.000	-5.5893	-1.6152
		Robust	-5.1626*	.84051	.000	-7.2036	-3.1216
	Moderate	Minimal	3.6022*	.81829	.000	1.6152	5.5893
		Robust	-1.5604	.67871	.070	-3.2085	.0877
	Robust	Minimal	5.1626*	.84051	.000	3.1216	7.2036
		Moderate	1.5604	.67871	.070	-.0877	3.2085

*Note. Frequency and Intensity of Exercise (FIE).

Source: Authors' research

5.2.5 Frequency and intensity of exercise create differences in job satisfaction and low absenteeism

An independent samples t-test was done to compare Job Satisfaction and Low Absenteeism (JSLA) scores between professionals who are involved in Basic Frequency and Intensity of Exercise (Below 60% group) and Vigorous Frequency and Intensity of Exercise (Above 60% group) based on the variable Frequency and Intensity of Exercise (FIE).

Table 13 shows that Basic exercisers ($M=17.6122$, $SD=4.22205$, $n=125$) scored lower on Job Satisfaction than Vigorous exercisers ($M=20.0789$, $SD=2.91096$, $n=125$).

TABLE 13. GROUP STATISTICS

	Group statistics				
	FIE_2-Group	N	Mean	Std. deviation	Std. error mean
	Basic	49	17.6122	4.22205	.60315
Job satisfaction and low absenteeism	Vigorous	76	20.0789	2.91096	.33391

Source: Authors' research

Table 14 shows that Levene's test indicated equal variance, $p=0.058$, so equal variances were assumed.

TABLE 14. INDEPENDENT SAMPLE T-TEST

Independent Samples Test										
		Levene's test for equality of variances		t-test for equality of means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean difference	Std. error difference	95% confidence interval of the difference	
									Lower	Upper
Job satisfaction and low absenteeism	Equal variances assumed	3.653	.058	-3.867	123	.000	-2.46670	.63791	-3.72941	-1.204
	Equal variances not assumed			-3.578	77.285	.001	-2.46670	.68941	-3.83941	-1.094

Source: Authors' research

There was a statistically significant difference in Job Satisfaction and Low Absenteeism between the two groups, $t(123) = -3.867$, $p < .001$, mean difference = -2.46670 , 95% CI $[-1.204, -3.72941]$, Cohen's $d = 0.71$, indicating a medium-to-large effect size. It explains that there was a significant difference in Job Satisfaction and Low Absenteeism between the two groups.

6. DISCUSSION OF FINDINGS

This study revealed a consistent, supportive correlation between regular exercise (as measured by FIE) and key work-related outcomes, including WP and JSLA. Even while adjusting for age and experience, these associations remained significant. However, they declined marginally with the introduction of job title as a control. This suggests that occupational role influences the magnitude, while leaving direction

unchanged in the exercise-performance relationship. On the other hand, job satisfaction surfaces as a significant driver of work performance independently. Nevertheless, the immediate effect of exercise on performance was less pronounced than hypothesized, and no significant gender differences were identified in the relationship between exercise and outcomes. The outcomes highlight exercise as a meaningful yet moderate contributor to workplace performance and satisfaction. In contrast to comprehensive transformation, regular physical activity appears to support a healthier and more creative workforce. Future investigations should address the long-term effects and potential administrative interventions for employees' well-being initiatives by promoting physical activity. The results agree with prior research demonstrating that regular physical exercise is related to work performance, well-being, and physical health. Studies have shown that daily exercise can improve next-day job performance and organizational citizenship behaviour by increasing positive affect and work engagement, particularly on days with high work demands (Gil-Beltrán et al., 2020). Regular exercise has also been linked to greater vigour and psychological well-being at work (Todorović et al., 2020), and workplace exercise interventions, particularly strength training, have been shown to improve health, productivity, and motivation. This modest exercise performance is consistent with previous reviews that found somewhat promising but limited evidence, highlighting the challenges posed by the small number of studies, inconsistent measurement methods, and short follow-up periods (Grimani et al., 2019). Assessing work performance is complicated by the absence of standardized tools, making it difficult to draw definitive conclusions, although the available data suggests that promoting physical activity may improve work outcomes. Moreover, one thing that appears crucial in mediating its benefits is the psychological experience of exercise. Vigour, characterized by energy, drive, and pleasure amidst physical exercise, has been shown to thoroughly mediate the relationship between exercise and workplace well-being, leading to reduced stress and greater job satisfaction. This aligns with theoretical frameworks such as Prioritization of the Positive (Catalino et al., 2014) and Self-Determination Theory (Ryan & Deci, 2000), which emphasize that the quality of exercise experiences influences motivation and positive outcomes. Organizations are therefore encouraged to foster enjoyable and motivating physical activity opportunities, such as on-site facilities or gym subsidies, to enhance the health and well-being of employees (Gil-Beltrán et al., 2020). In summary, the evidence supports the rise of consistent physical activity as a valuable approach to boosting employee performance, physical health, and job satisfaction. High-quality, longitudinal inquiry is essential for providing deeper insights into causal mechanisms and optimizing interventions.

7. RECOMMENDATION

This paper studied how regular physical exercise is related to work performance among private university faculty and administrative officers in Bangladesh. Based on our findings and existing literature, the following recommendations are proposed to guide the upcoming research and practical implementation. To begin with, universities should implement planned workplace exercise events: fitness classes, a gymnasium, and other wellness programs so that employees get motivated and maintain good health. In the next stage, the organization needs to implement a number of exercise models: aerobic activities, strength training, and yoga, and these will enhance their overall task performance. Moving forward, employers should introduce assessment measures- participation rates, fitness levels, and work outcomes into exercise initiatives, and these measures allow program enhancement, ensure the sample is representative, and reduce biases. Moreover, organizations should combine exercise and wellness policies in order to elevate employees' welfare; stress management, ergonomic adjustments, and cognitive health support can produce more extensive benefits. Additionally, organizations should team up with the HR departments and the fitness committees to secure endorsements and send invitations personally to the employees and remind them of the issues; all of these will enhance the sample size and reduce biases. Finally, spread results via policy briefs, workshops, and peer-reviewed publications to promote both productivity and health; clear communication of evidence-based recommendations will help managers, health planners, and employers adopt such practices.

8. LIMITATION

The paper is designed to analyse the relationship between regular physical exercise and work performance among employees of private universities in Bangladesh by using a cross-sectional survey. Firstly, as the study follows the cross-sectional survey method at a fixed period of time, though the results found significant relationships, it limits the ability to formulate causal associations between regular physical exercise and work performance. Secondly, the questionnaire's data were self-reported; it might be biased by the respondents; participants may have exaggerated their responses. Thirdly, the same individuals used a unified questionnaire, and it obtained all the variables' data at a discrete time point; the evidence might be affected by typical method prejudices, although all the structured measurement steps were observed; this likelihood cannot be wholly omitted. Fourthly, a small sample was taken only from the private universities in Bangladesh, which limits the data from broader perspectives, and that cannot be generalized to the broader context; for this reason, the study cannot claim that the findings apply to other settings (McNulty et al., 2023). Fifthly, there is a considerable gap in terms of gender, where male

responses are dominantly higher than female responses (McNulty et al., 2023), and this gap confines the ability to compare the other means, such as gender and other roles, due to the limited number of female and administrative officers' responses; hence, it is impossible to represent the statistical results broadly. Sixthly, only the quantitative data were taken, which limits getting other means; for example, others may express their opinion if qualitative data were taken. Finally, the study only takes the results from the university's administrative officers, which does not show the results of other sectors' employees. The stated limitations should be recognized when interpreting the findings, despite this study presenting valuable outcomes related to regular physical exercise and providing a conceptual base for prospective research.

9. POTENTIAL FOR FUTURE STUDY DIRECTION

As workplace wellness continues to emerge as a critical area in organizational research, future studies on physical exercise and workplace performance can build existing insights while addressing underexplored areas. While current studies underscore the short-term perceptual and psychological benefits of exercise, future research should take on a longitudinal design to assess how systematic physical activity stimulates career trajectories, such as promotion rates, persistent job performance, and organizational loyalty. Forthcoming research should assess the effectiveness of on-site or supervised exercise periods, as several organizations implement structured wellness programs. These interventions could be evaluated on their effect on productivity, job satisfaction, stress resilience, and psychological capital, alongside cost-benefit analyses, which can assess their value for employers. Future studies could inspect whether acute physical activity boosts innovation, problem-solving capacity, and divergent thinking. A supportive environment can considerably influence exercise activities. Future research should examine how community encouragement from peers, supervisors, or family functions as an intermediary between exercise frequency and mental well-being, as well as burnout, enthusiasm, and engagement at work. Future experimental studies can measure how such micro-exercise breaks impact real-time outcomes like concentration, precision, and processing speed, subsidizing the development of practical workplace tactics for peak performance. Finally, future studies should examine how varying levels of exercise intensity affect employee mental health, including effects like anxiety, emotional resilience, and job satisfaction. Identifying optimal intensities for diverse personality categories and job stress levels could lead to a more personalized wellness program.

10. CONCLUSION

This paper explores the seeming role of consistent physical exercise on work performance and job satisfaction among professionals functioning in private universities in Bangladesh. The findings advocate that persistent engagement in physical exercise is certainly linked with enhanced work efficiency, enhanced focus, reduced stress, and overall job satisfaction. These insights replicate a growing recognition among university professionals of the significance of physical well-being as a crucial contributor to occupational performance and psychological flexibility.

Notwithstanding the encouraging trends identified, the study also discovered disparities in participation across demographic groups and highlighted several barriers that limit widespread engagement in exercise, including work pressure, shortage of time, and inadequate institutional support. These understandings point to the need for more comprehensive and accessible workplace wellness initiatives that accommodate diverse employee necessities. While the study was limited in terms of sample size, geographic range, and data collection methods, it lays the groundwork for future research to examine the long-term, sector-wide implications of workplace physical activity. Combining longitudinal and mixed-method approaches, as well as expanding the sample to consist of various job roles and institutions, could provide a more complete understanding of this relationship. In conclusion, fostering a culture that inspires regular physical activity not only contributes to individual health but may correspondingly yield significant organizational benefits in terms of productivity, optimism, and employee retention. As universities in Bangladesh continue to evolve in response to global educational and professional demands, incorporating exercise-friendly policies could play a pivotal role in modelling healthier, more satisfied, and more productive workforces.

DECLARATION OF COMPETING INTEREST

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

DECLARATION OF GENERATIVE AI AND AI-ASSISTED TECHNOLOGIES IN THE WRITING PROCESS

The authors declare that they have not used any Generative AI and/or AI-Assisted technologies during the preparation of this work.

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