THE PREDICTIVE POWER OF OCCUPATIONAL STRESS AND FATIGUE ON THE GENERAL QUALITY OF LIFE OF UNIVERSITY EMPLOYEES

Dr. Ghulam Murtaza Shah[*1], Kamran Ali Abbasi[2], Dr. Noor Ahmed Memon[*3]

[*1]*Assistant professor at IBA, Badin Campus, University of Sindh, Pakistan*
[2]*Assistant Professor at Govt Boys Degree College Qasimabad, College education & literacy Department Sindh*
[*3]*Lecturer at Govt Boys Degree College Qasimabad, College education & literacy Department Sindh*

[*1]ghulam.murtaza@usindh.edu.pk, [2]Abbasikamran22@gmail.com, [*3]noor_memon12@hotmail.com

Abstract
Human capital is one of the valuable assets in any organization which acts like critical driver in achieving its goals and objectives. This study attempts to explore the relationship among occupational stress, physical fatigue and quality of life of university employees. This research incorporates survey method therefore primary data is collected through closed ended questionnaire. Employees working as faculty and admin staffs in three public sector universities located at Jamshoro city are taken as target population. Almost two hundred responses were collected from faculty and admin staff of three universities. Validity and Reliability of data was analyzed using Composite Reliability and Average Variance Extracted. Correlation Coefficient used to measure strength and magnitude among explanatory and explained variables. Regression analysis was used to measure the overall impact of two independent variables i-e Work Stress and Fatigue on dependent variable, i-e quality of life. Findings show both explanatory variables exert negative and significant effect on quality of life of university employees. Study concluded that higher education institutes must have effective HR strategy that ensures prevention of employees from work stress and fatigue as well as it should provide avenues to promote quality of life. The findings of this research are valuable insight for management to promote work-life balance by which employees enable to develop a good balance between personal and professional lives that are win- win approach for organization as well as employees.

INTRODUCTION

Human capital is most valuable asset in any organization and acts like a critical driver in achieving its goals and objectives. This asset can be mismanaged if diverts to work related pressures and high demands from management to achieve unmet targets in an organization. The work-related stress caused by complexity of job responsibilities and continuous reinforcement by top management for improving performance at workplace. Employees are expected to invest more energies and concerted efforts in achieving strategic goals covering academic and administrative areas of higher education institutes (Misriyatun & Rosidah, 2025). Increasing competition among higher education institutes, requirements of accreditation councils, directives of Higher Education commission and expectations of people in society demand more

work from employees to elevate ranking of institute in country and abroad. This contemporary situation also become cause of increase in workload of employees (Elmie et al., 2020). In addition, advancement in technology and digitalization of administrative work require rapid changes and more updated work from employees in their assigned tasks (Nugrahaeni & Ariandi, 2025). Increased workloads, meeting deadlines and working on high expectations from management and public cause work stresss among employees in higher education institutes. Empirical analysis of a higher education institute reveals that more than 35% employees face mental fatigue due to increased workload (Novasani & Ngizudin, 2022). This situation resembles with Job Demands-Resource theory which states that increase in workload and meeting deadlines cause prolong stress, reduces stamina and negatively affect mental wellbeing. Contrary to this, positive feedback, counselling and motivation promotes well being of employees and keep them away from work stress and highly intensified workloads (Bakker & Demerouti, 2017). The educational institutes where employees counselling and motivation are not part of organizational culture, vulnerability of work anxiety and stress increases among employees. In the environment of universities, quality of life depends on physical and psychological conditions of employees. Physical conditions like fatigue caused by overburdened tasks and psychological state relates to stress caused by nature of job responsibilities (Farhan Maruf et al., 2025). When employee responds to a task that is beyond his adaptive capabilities result in stress and the situation in which assigned task cause discomfort and exhaustion among employees result fatigue (Jacobs, 2024). Both phenomena received significant attention of research scholars to highlight reasons that affect overall well-being of employees and to propose effective management strategy which give stress free environment to employees.

Employees encounter varying level of stressors in the working environment like drowsiness due to disruptive sleeping patterns and excessive work pressures which affect their personal lives.

Employees are bound to perform job responsibilities along with doing research work that is mandatory for their career growth as well as additional requirements of job too (Aryani et al., 2020). Increasing demands from management create stressed environment and directly affects quality of life because these demands exceed individual capabilities and negatively affect overall well-being (Zhao et al., 2024). Research findings given by Aloka et al (2023) and Ryan et al (2023) reported that top management support in providing better working conditions and stress free environment is highly needed and that is possible with high level of employees engagement. This support is in context of involving academic staff in sharing innovative ideas, giving suggestions and sharing concerns without fear of punishment. This is termed as psychological safety of employees (Brooker, 2024). This psychological safety promotes innovation and encourages participation in the working environment which reduces stressors and create fundamental strategy to give relief to employees at workplace.

The main objective of this study is to determine the relationship among work stress, fatigue and quality of life in university employees.

Literature Review
Work-Related stress in Higher Education Institutes

Various studies confirm that burnout and work related stress are common issues encounter by employees in university environment. Research studies conducted in Australia and New Zealand reported that 40% of respondents argue that higher levels of stress are reported among academic staff in comparison with administrative staff (Vacchi et al., 2024). The moderate level of stress found in university teachers when research was conducted in one of the recognized universities in Indonesia. In addition this study further revealed consistent level of stress observed among employees, i-e organizational stress was observed as main contributor, environmental stress is of secondary level and at the lower level individual stress was observed. At this level, employees do work as needed but at the cost of

affecting well being and mental health (Purnamasari & Topan, 2023). Top management intervention is of utmost importance because employees who are at the mediocre stress levels are more likely to enter into very high stress that is harmful for employees as well as ineffective for smooth functioning in universities. This discussion reveals that academic staff has more stress due to work burdens as compare to administrative staff, therefore strategic choice is of major concern for addressing issues of teaching staff on priority basis as compare to administrative staff.

Based on above discussion H1 is developed as;

Work stress negatively and significantly affects the quality of life of employees working in higher education institutes.

Physical Fatigue and Psychological Burnout

Research studies reveal that length of service is main factor in psychological burnout but situations and environment vary from one organization to another. Newly employed workforce not only receive targeted work burdens but also tried to be adaptable in the strict organizational culture and working environment (Griffith & Sovero, 2021). Conversely senior employees face burnout due to homogenous workloads, scarce avenues for career development and consistent management pressures. The prolong delay in reducing stressors in the working environment ultimately cause well-being of employees and may fuel up retention issues of employees (Hammoudi Halat et al., 2023). This trend is empirically researched and founded globally. The research conducted by collen (2022) reported that up to 80% rectors in higher education institutes observed that faculty resigned from their jobs due to stressful environment and psychological burnout and in addition they also shared the reason that in an academia industry they were being offered more attractive financial packages than current

workplaces. These studies validate the fact that both physical fatigue and psychological burnout are main factors of increase in employees' turnover in higher education institutes. The combined effect of these two factors directly affect the well-being of employees and it become imminent threat of losing qualified faculty and retaining talent in academic institutes.

Based on the above discussion H2 is developed as;

Physical fatigue negatively and significantly affects quality of life of employees working in higher education institutes.

**Working Environment and Quality of Life in Higher Education Institutes**

The quality of life in higher education institutes depend on working environment which actually shapes the culture and atmosphere for employees. Employees well being is directly associated with the degree and level at which employees are properly engaged at their workplace and how productively they perform (Aloka, et al., 2023). The tool which engages employees and that has to create and implement by top management into their working environment is psychological safety. This tool motivates employees to think innovatively and share their ideas with freedom, they have legitimate right to argue on unjust practices and suggest effective measures as well as they can voice their concern without fear of job lost or any strict punishment (Brooker Simon, 2024). Research studies further observed that psychological safety is a prime source of introducing and implementing intrapreneurial environment in the universities as well as it serve as a best supplement to reduce stress and promote overall well-being of employees.

Based on the discussion in Literature review, H3 is developed as;

Work stress, Fatigue and quality of life are significantly correlated among one another.

Conceptual Framework

Figure 1.
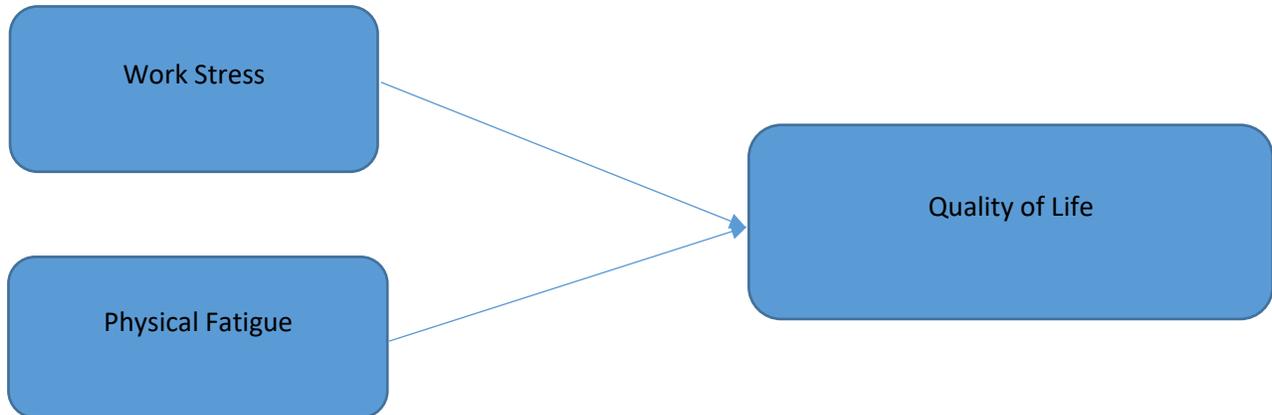
Nature of Research

This research is quantitative in nature. Bryman (2015) discusses that quantitative research is a type of research that uses numerical data to establish the relationship between dependent and independent variables. In this study work stress and physical fatigue are used as independent or explanatory variables and Quality of life is termed as dependent or explained variable. Quantitative research is conducted through survey questionnaire to establish and determine the empirical relationship of each independent variable i-e work stress and physical fatigue with

only dependent variable that is quality of life.

Population and Sample

This study includes three public sector universities of Jamshoro, i-e Sindh university Jamshoro, Mehran University of Engineering and Technology Jamshoro and Liaquat University of Medical and Health Sciences Jamshoro. Using quota sampling, one hundred respondents were randomly chosen from three universities and one hundred admin employees were also randomly chosen. Classification and tabulation of respondents is given below;

Table#1

S#	Demographic Factors	Sindh Univ	MUET Jamshoro	LUMHS Jamshoro
1.	**Gender**			
	Male	60	40	32
	Female	40	16	12
	Total (200)	**100**	**56**	**44**
2.	**Designation (Faculty)**			
	Lecturer	20	10	05
	Assistant Professor	15	10	10
	Associate Professor	10	05	05
	Professor	04	03	03
	Total (100)	**49**	**28**	**23**
3.	**Admin Staff**			
	Assistants	15	05	05
	Superintendents	08	10	10
	Computer Programmers	17	10	05

Accountants	05	05	05
Total (100)	**45**	**30**	**25**

Scale and Measurement

This study uses closed ended questionnaire comprised of five points Likert Scale range from Strongly disagree to Strongly agree, (1 to 5). Five constructs of work stress were adopted from (Vacchi et al., 2024), seven items of physical fatigue were adopted from (Collen, 2022) and six items of quality of life were adopted from (Aloka, et al., 2023). The questions were somehow modified due to change in university and environment used in research study. The closed ended questionnaires were distributed among one hundred faculty members and one hundred admin staff of three different universities.

Survey questionnaire is closed ended in nature comprised of five points likert scale and distributed among respondents to collect quantitative data for analysis (Bryman, 2015).

Data Analysis
Validity and Reliability Analysis

S#	Variable	Cronbach Alpha	Composite Reliability	Average Variance Extracted
1	Work Stress	0.744	0.851	0.688
2	Physical Fatigue	0.757	0.897	0.775
3	Quality of Life	0.812	0.871	0.640

Table #2

Data is statistically valid if its Average Variance Extracted (AVE) is > 0.50. In above table, first explanatory variable i-e Work Stress AVE is 0.688>0.50, Second independent variable Physical Fatigue value is 0.775>0.50 and AVE value of Explained variable i-e Quality of life is 0.640>0.50. All three variables data is statistically valid so the observed data has no issues of validity (Bryman, 2015).

Reliability is a measure of internal consistency in responses given by targeted respondents. Data is said to be reliability if its composite reliability value is >0.70. In Table#2, the composite reliability of Work stress is 0.851>0.70, Physical fatigue 0.897>0.70 and Quality of life 0.871>0.70, means all three variables show good internal consistency therefore data is reliable.

Discriminant Validity Analysis using Fornell Larcker Criterion

S#	Constructs	Work Stress	Physical Fatigue	Quality of Life
1	Work Stress	0.804		
2	Physical Fatigue	0.644	0.786	
3	Quality of Life	0.578	0.677	0.785

Table#3

Discriminant validity is used to measure variance of each construct in respective rows and columns. The analysis is said to be statistically discriminant when the variance of each construct is supposed to be greater than respective rows and columns (Hamid et al, 2017). In table 3, the variance of each variable is greater than its respective row and column, so each variable is statistically different from other.

Correlation Coefficient R

Variable		Work Stress	Physical Fatigue	Quality of Life
Work Stress (WS)	**Pearson Correlation**	1	0.408	0.708
	Significant 2 Tailed		.000	.000
	N	100	100	100
Physical Fatigue	**Pearson Correlation**	.355	1	.756
	Significant 2 Tailed	.000		.000
	N	100	100	100
Work Stress	**Pearson Correlation**	.708	.756	1
	Significant 2 Tailed	.000	.000	
	N	100	100	100

Table#4

Correlation coefficient measures the magnitude of relationship among variables. It ranges from -1 to +1 refers strongly negative to strongly positive correlations. The Correlation coefficient R <0.30 refers weak, between 0.30-0.70 shows moderate and above 0.70 show strong correlation (Bryman, 2015). In above table the correlation between Work stress and Physical fatigue is >0.30, i-e 0.408 or 40% show moderate relationship. The relationship among all three variables is >0.70 means all three variables are strongly correlated.

Based on the above result H3, Work stress, fatigue and quality of life are positively and significantly correlated.

Regression Analysis

Model Summary

R Square	Adjusted R	Std Error	F Statistics	Sig F Change	Durbin Watson
0.725	0.706	0.277	75.562	0.000	1.591

Table 5

Table#5 shows R square 0.725 means 72% quality of life is affected by work stress and Fatigue. This shows two explanatory variables included in the study show high magnitude of effect on quality of life of the employees working in universities. The significant P value on F Statistics 75.652 is 0.000<0.05 means the relationship between two explanatory and one explained variables is empirically tested and regression model is best fit.

Coefficients (Hypothesis Testing)

Model	Unstandardized Coefficients		Standardized Coefficient	T	Sig	95% Confidence Interval	
	B	Std Error	Beta			Lower Bound	Upper Bound
Constant	0.833	0.321		0.756	.006	.251	1.516
Work Stress	0.235	0.069	-0.232	3.388	.001	.098	.372
Physical Fatigue	0.512	.105	-0.509	4.868	.000	.304	.719

Dependent Variable: Quality of Life

Table 6

H1: Work stress negatively and significantly affects quality of life of employees in Higher Education Institutes.

In table 6, the negative beta value i-e -0.232 and significant P value .000<0.05 indicates that Work stress has negative and significant influence on quality of life of the employees, henceforth H1 is accepted.

H2: Physical Fatigue negatively and significantly affects the quality of life of employees working in higher education institutes.

Discussion

Employees of higher education institutes need a working environment where they must have psychological safety along with job. The psychological wellbeing depends on reduction in stressors and delegation of task that reduces work burden. The research findings show that work stress composite reliability 0.851>0.70, Physical Fatigue Composite Reliability 0.897>0.70, Quality of Life 0.871>0.70 indicates that observed data has high internal consistency and data is reliable. Average variance extracted, AVE of Two Explanatory variables and one explained variable are >0.50 means data is statistically valid. The relationship between Work stress and Quality of life is negative based on negative beta -0.232 and significant P value is .000<0.05. Vacchi et al. (2024) endorsed findings that Work stress significantly affects the quality of life of employees in higher education institutes. Physical fatigue statistical analysis reveal negative influence on quality of life of employees based on negative Beta -0.509 and significant P value .000<0.05. Collen (2022) endorsed that Physical fatigue has negative and significant influence on quality of life of employees. All three variables are highly correlated as their correlation value is >0.70. Literature review and statistical analysis concluded that Quality of Life, Physical Fatigue negatively and significantly affects the quality of life of higher education institutes.

Conclusion

Psychological well-being is of utmost importance at workplace because employees are integral part of achieving goals of the corporation. Delegating task to employees and engaging them at workplace need effective HR strategy which must promotes psychological safety in the working environment. In addition this strategy will diminishes high burden upon each employee and empowers them to suggest change and improve organizational performance. Effectively engaged employees perform better as well as it boosts productivity that urges higher education institutes to carefully review and rewrite job responsibilities which ensure distributive justice in allocating work burdens among employees. Work stress and physical fatigue are negative influences on employees' well-being and quality of life. Organizational growth and survival should not overlap psychological well-being of employees which will switch employees to other corporations. Psychological well-being is imperative for maintaining and retaining employees and organization become successful in uplifting them on ladder of job loyalty. It results positive outcome in shape of individual and institutional development as well as help in achieving standard benchmark in education industry at domestic and international levels.

Suggestions

Future researchers may study poor quality of life and its main causes, work stress and physical fatigue for employees serving banking sector and other corporate sectors. This study incorporates only two factors affecting quality of life, however there can be different factors within an organization which may vary from incentives to career growth and others. Future researchers can also focus on comparative analysis of employees' quality of life between public sector and private sector of our country which will further produce in-depth research that may benefit different stakeholders in addressing and resolving long awaited issues of employees job dissatisfaction and turnover.

Practical Implications

This research is an empirical insight for management to plan and execute ways and means of stress management at workplace. Emotionally

stable employees benefit whole corporation and promote workplace spirituality. The findings of this research are valuable insight for management to promote work-life balance by which employees enable to develop a good balance between personal and professional lives that is win win approach for organization as well as employee. This research is useful for managers to improve managerial supervision by which employees feel more engaged, mentally stable and physically sound having good health. Promoting psychological well-being gives long run benefit to any corporation including higher education institutes so it is imperative for management to review job responsibilities and keep their employees highly motivated with their corporation.

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