P-ISSN: 2709-6254	Journal of Development and Social Sciences	Jul-Sep 2023, Vol.4, No.3
O-ISSN:2709-6262	http://dx.doi.org/10.47205/jdss.2023(4-III)07	[59-66]

Journal of Development and Social Sciences
www.jdss.org.pk

RESEARCH PAPER

Sports Participation to Prevent Academic Burnout among Postgraduate Life Sciences Research Students

[1]Muhammad Hassnain [2]Dr. Asif Ali* [3]Muaaz Zafar Iqbal

1. M.Sc. Student, Department of Physical Education & Sports Sciences, Government College University Lahore, Punjab, Pakistan
2. Associate Professor, Department of Physical Education & Sports Sciences Government College University Lahore, Punjab, Pakistan
3. M.Sc. Student, Department of Physical Education & Sports Sciences student at Government College University Lahore, Punjab, Pakistan

***Corresponding Author:** asif.ali@gcu.educ.pk

ABSTRACT

The primary goal of this study was to better understand how sports participation might be used as a therapeutic mechanism for academic burnout by examining the relationship between participation in leisure-time sports activities and academic burnout among participants. With 215 postgraduate life sciences students from various fields across four universities, a cross-sectional survey was carried out. The International Physical Activity Questionnaire (SV), the Oldenburg Burnout Inventory, and demographic data were used in the data collection. The findings showed a strong association between participation in leisure-time sports with academic burnout and its components disengagement, exhaustion. The results of the data analysis showed that participation in recreational sports had a negative relation with both the overall score of academic burnout and its subcomponent disengagement. These findings emphasize the importance of recreational sports participation in lowering academic exhaustion, especially in terms of overall academic performance and engagement. These results contribute to our understanding of the role of leisure time sports in mitigating burnout levels.

KEYWORDS Academic Burnout Prevention, Academic Burnout, Disengagement, Exhaustion, Leisure Time Sports Participation

Introduction

In their competitive academic environment and time-consuming research projects, postgraduate students in the field of life sciences research studies face unique difficulties. With high levels of stress that might result in academic burnout and its negative effects, these students manage demanding coursework, lab work, and significant research projects. Therefore, it is critical to recognize and manage the problem of academic burnout among postgraduate research students to protect their overall success and wellbeing.

According to recent studies, postgraduate students—including those studying the life sciences—experience burnout at a significant rate (Ahola, Väänänen, Koskinen, Kouvonen, & Shirom, 2010). Academic Burnout is a condition that develops as a result of extended exposure to academic pressures and is characterized by enduring emotions of tiredness, cynicism, and decreased effectiveness (Maslach, 2003). Emotional tiredness, depersonalization, or cynicism, and decreased personal accomplishment are the three main indications that academic burnout manifests up. People who have been subjected to chronic and persistent scholastic stress frequently have these aspects, which comprise the primary symptoms of burnout (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). These factors work together to create a sense of exhaustion, disengagement, and decreased enthusiasm in academic endeavors.

Academic burnout can have serious repercussions for postgraduate research students. According to Levecque, Anseel, De Beuckelaer, and Gisle (2017), academic burnout has been linked to poor mental health, a diminished sense of fulfilment in life, and poorer academic achievement. Burnout can also negatively impact job decisions, professional advancement, and general wellbeing over the long term. For effective burnout prevention measures to be put in place, postgraduate research students must be made aware of its prevalence and effects.

Research on postgraduate life sciences research students is increasingly necessary given the need of tackling academic burnout. There has been little research done especially on burnout experiences in the context of life sciences research, despite the fact that undergraduate and general postgraduate student burnout have both been extensively examined. Researchers can design specialized therapies to lessen burnout and improve the well-being of these students by thoroughly understanding the distinctive stressors and difficulties these students confront by investigating burnout among postgraduate life sciences research students.

Sports have been shown to improve mental health, reduce stress, and improve general well-being in a variety of populations, including students (Liu, Wu, & Ming, 2015).

Additionally, research has shown that leisure time sports participation may be a useful substitute for or addition to medication-based therapies for preventing and managing burnout (Stathopoulou, Powers, Berry, Smits, & Otto, 2006). Examining sports' potential advantages for postgraduate life sciences research students is vital given the rising body of data that shows their contribution to mental health.

As a result of the unique problems, postgraduate life sciences research students are more likely to experience academic burnout. Effective therapies must take into account the prevalence and effects of burnout among these students. Sports have shown potential in minimizing burnout and fostering wellbeing among a variety of communities. To design targeted measures that improve their well-being and support their achievement, it is therefore essential to look into how sports can avoid academic burnout among postgraduate life sciences research students.

Literature Review

Postgraduate researchers in the life sciences are severely concerned with academic burnout. Their rigorous course load frequently causes them to experience higher degrees of burnout, which has a detrimental effect on their health and academic performance (Chen & Zhang, 2022). In order to address this problem, academics have focused on sports engagement as a potential safeguard against academic burnout in this particular student demographic.

The association between recreational sports activities and academic burnout among postgraduate life sciences research students has been the subject of several studies, Smith (2018) conducted research on a sample of postgraduate life sciences students and discovered that greater levels of sports participation were linked to reduced levels of burnout. This research revealed that sports participation helps to reduce academic burnout.

A longitudinal study over two years showed that regular participation in leisure time sports activities helped reduce academic burnout and improve quality of life for long terms. This study shows importance of sports activities to reduce academic burnout (Smith, 2018).

In cross-sectional survey impact of sports participation on mental health among graduate students of life sciences has been surveyed (Zhang, 2017). The findings suggested

that sports participation was inversely related to the psychological health. This study highlighted the importance of sports participation in order to gain mental health wellness.

The study's findings demonstrated that the overall well-being of these students had increased, and that doing sports had given them a way to decompress and maintain their motivation. These findings demonstrate how important participation in sports is for promoting wellness and preventing academic burnout (Brown, 2021).

Overall, the body of data points to sports engagement as a promising technique for postgraduate life sciences research students to avoid academic burnout. Sports participation not only lowers levels of burnout but also improves wellbeing and academic performance. To fully understand the underlying mechanisms and long-term impacts of sports engagement on academic burnout in this particular student demographic, more research is required.

Hypothesis

Based on the research objectives and the existing literature, the following hypothesis is proposed for this study:

It is hypothesized that, students who participate in Leisure Time Sports activities will exhibit lower levels of academic burnout compared to non-participants of Leisure Time Sports activities.

Material and Methods

To answer research question of the study, a quantitative cross-sectional survey design was utilized in this study. The research aimed to assess the levels of physical activity and academic burnout among students in the zoology, botany, and biotechnology departments during their third and fourth semesters by collecting data at a single point in time to find out relationship between variables.

Population and Sample Size

The study focused on postgraduate life sciences research students from two public universities and two private universities located in Lahore, Pakistan. The sample size was determined using simple stratified sampling method and the Yamane Formula identified total number of sample size. By considering the total number of MPhil research scholars in the targeted life science departments during the 3rd and 4th semesters, a sample size of 215 students was determined with a confidence level of 5% and a margin of error of 0.05.

Sample Allocation

To ensure representative sampling, a stratified random sampling technique was employed. The sample was divided into strata based on the departments (zoology, botany, biotechnology), and participants were randomly selected from each stratum. The registrar offices of the universities provided a list of all MPhil 3rd and 4th semester scholars in the relevant departments, which facilitated the identification of potential participants.

Instruments

The data collection instruments employed in this study consisted of the following:

Demographic Questionnaire:

Participants completed a questionnaire that gathered information on gender, age, study program, marital status, academic year, part-time job status, participation in physical activity or sports, height, weight, BMI, and resting heart rate.

IPAQ Short Version

The International Physical Activity Questionnaire specifically the short version questionnaire was used in this research developed by Craig et al. (2003). This tool assessed participants' physical activity levels over the preceding seven days. It comprises seven questions that capture information about vigorous, moderate, and normal physical activities, allowing for cross-border comparisons.

Oldenburg Academic Burnout Inventory (OLBI)

Oldenburg Academic Burnout Inventory (OLBI) was used in this study to measure academic burnout of research students and it was developed by Demerouti et al. (2001). OLBI measured participants' disengagement, exhaustion and total scores of academic burnout on the basis of cut-points score. The inventory consists of 16 items that assess different dimensions of burnout related to academic studies.

Data Collection

Data for this study were gathered through a survey comprising three sections: a demographic questionnaire, the International Physical Activity Questionnaire, and the Oldenburg Burnout Inventory (OLBI). Prior to the main data collection, a pilot testing phase was conducted with a small sample of MPhil students to ensure the questionnaire's clarity and comprehensibility. Detailed information about the study's objectives and procedures was provided to all participants, and their voluntary participation was obtained through informed consent.

Data Analysis

The data analysis was performed using SPSS software, specifically version 2022 (IBM Corp, 2017). Descriptive statistics and simple linear regression test was used for data analysis and *P*-value was set below 0.005 to determine significance difference between variables

Results and Discussion

The findings of a basic linear regression analysis are displayed in Table 1. Revealing the associations between leisure time sports participation and academic burnout, including its components of disengagement and exhaustion. The results revealed significant associations between leisure time sports participation and various aspects of burnout.

Leisure time sports participation was found to be negatively related to the burnout total score (B = -1.351, SE = 0.477, 95% CI [-2.292, -0.410], β = -0.037, p = 0.005). This suggests that increased engagement in leisure time sports is associated with lower levels of burnout. Specifically, approximately 3.7% (R^2 = 0.037) of the variability in burnout scores can be explained by leisure time sports participation.

Furthermore, leisure time sports participation showed a significant negative association with disengagement (B = -1.695, SE = 0.388, 95% CI [-2.459, -0.930], β = -0.083, p < 0.001). Individuals who engaged more in leisure time sports were found to have lower

levels of disengagement. The percentage of variance in disengagement accounted for by leisure time sports participation was approximately 8.3% (R^2 = 0.083).

Table 1
Regression Coefficients of Predictor Variable Leisure Time Sports Participation and Dependent Variables Burnout Along with its Components Disengagement, Exhaustion

Dependent Variables	*B*	*SE*	95%CI		*β*	*P*	R^2
			LL	*UL*			
Burnout TS	-1.351	.477	-2.292	-.410	-.192	.005[b]	.037
Disengagement	-1.695	.388	-2.459	-.930	-1.695	.000[b]	.083
Exhaustion	.344	.309	-.265	.953	.077	.266[b]	.006

Note. *$p < .01$; *TS: Total Score: constant; Leisure Time Sports Participation*

However, no significant relationship was observed between leisure time sports participation and exhaustion (B = 0.344, SE = 0.309, 95% CI [-0.265, 0.953], β = 0.006, p = 0.266). Leisure time sports participation explained only 0.6% ($R2$ = 0.006) of the variance in exhaustion scores.

These findings highlight the significance of leisure time sports participation in reducing burnout, particularly in terms of the total score and disengagement. However, the relationship between leisure time sports participation and exhaustion was not statistically significant. The association between leisure time sports participation accounted for reduction in academic burnout scores and suggesting that leisure time sports may play a meaningful role in mitigating burnout levels.

Discussion

The findings of the current study shed light on the relationship between postgraduate students' involvement in leisure time sports activities and academic burnout from their studies. Our findings show that participating in leisure-time sports is related to lower levels of academic burnout, which is consistent with earlier study (Gerber & Pühse, 2008).

Particularly, we found a substantial inverse relationship between playing sports or leisure time sports activities as a hobby and the combined scores of academic burnout and disengagement.

Participating in sports during your free time has been shown to have a negative correlation with your overall burnout score, which shows that doing sports as a hobby may help you avoid developing academic burnout symptoms. This result is in line with recent studies that highlighted the importance of leisure time sports activities in promoting wellness and reducing academic burnout (Stults-Kolehmainen & Sinha, 2014).

Postgraduate students who participate in leisure time sports activities have coping mechanisms, to elevate their mood, and feel successful, minimizing academic burnout. Furthermore, our result showed a substantial inverse relationship between leisure sport participation and disengagement. According to our study, postgraduate students who engage in recreational sports are more likely to stay connected to and actively involved in their academic efforts due to absence of academic burnout. It has been demonstrated that exercise improves cognitive function, motivation, and focus. This might encourage postgraduate students to focus more intently on their studies (Mandolesi et al., 2018).

It's interesting that we did not find an association between participating in recreational sports and academic burnout. Even while this finding could seem to conflict

with earlier research that identified an association between physical activity and academic burnout, it's important to consider the complexity of burnout (Lindwall, Gerber, Jonsdottir, Börjesson, & Ahlborg, 2014). The clear association between participating in leisure time sports activities and exhaustion in our sample may be attenuated by a number of factors, such as workload, individual circumstances, and coping mechanisms.

Overall, the research adds to the body of knowledge by emphasizing the potential benefits of leisure-time sports engagement in reducing burnout among postgraduate students. It is crucial to recognize that the cross-sectional design of our study limits our capacity to determine causal links between variables. Future research utilizing longitudinal or intervention methods will be beneficial to better understand the relationships between recreational sport involvement, academic burnout, and well-being outcomes among postgraduate students.

Implications and applications of the study

The results of this study have important implications for avoiding academic burnout in postgraduate students through participation in sports. Sports participation during leisure can be a productive way to lessen the effects of burnout and enhance student wellbeing. These findings can be used by academic institutions to design focused interventions and support initiatives that promote and enable postgraduate students' participation in sports.

Universities should foster an environment that supports students' overall health and achievement by acknowledging the contribution of sports to preventing academic burnout. Students' stress management, motivation, and general mental and physical health can all be improved by implementing sports programs and giving them access to sporting venues. Students can also have possibilities for social connection, teamwork, and personal development by including sports in the curriculum or by participating in extracurricular sports clubs and teams.

The findings further emphasize the significance of incorporating recreational sports and physical exercise as a component of an all-encompassing strategy for student well-being. Academic institutions can support the total development of postgraduate students by valuing sports involvement and recognizing that it can help prevent burnout. This strategy is consistent with the expanding body of research that highlights the connection between physical activity, mental health, and academic success.

It is important to recognize the study's limitations, particularly the use of a cross-sectional design that hinders us from establishing causal links between athletic activity and academic burnout. The effectiveness of sports engagement in avoiding burnout among postgraduate students might be better supported by future longitudinal or intervention research. Future study might benefit from include objective measures of exhaustion and engagement in sports because utilizing self-reported measures may create biases.

This study's conclusion emphasizes the implications and uses of sports engagement in minimizing academic burnout among postgraduate life sciences research students. Academia may develop supportive environments that encourage physical exercise, lessen burnout, and improve the overall educational experience of postgraduate students by acknowledging the importance of sports in fostering student well-being.

Conclusion

This study examined the relationship between postgraduate students' involvement in recreational sports and burnout from their studies. The study found a significant relationship between playing recreational sports and academic burnout, particularly in

terms of overall total score and disengagement. Increased participation in recreational sports was associated with lower burnout and reduced disengagement.

These findings emphasize the importance of incorporating recreational sports involvement as a potential burnout prevention strategy, especially in light of disengagement and total burnout scores. According to the study, recreational sports may significantly help postgraduate students who are experiencing burnout. This study demonstrates how essential it is for educational institutions and policymakers to take into account encouraging involvement in recreational sports as a burnout prevention measure. The focus of future research should be on evaluating the long-term impacts of recreational sports on burnout and looking at additional variables that might affect the complicated link between sports engagement and various burnout aspects. Educational institutions can create pleasant environments that promote well-being and improve the overall academic experience for postgraduate students by having a clear understanding of the advantages of recreational sports.

References

Ahola, K., Väänänen, A., Koskinen, A., Kouvonen, A., & Shirom, A. (2010). Burnout as a predictor of all-cause mortality among industrial employees: a 10-year prospective register-linkage study. *J Psychosom Res, 69*(1), 51-57. doi:10.1016/j.jpsychores.2010.01.002

Brown, A., Smyth, C., & Ullah, S. . (2021). Sports participation and well-being in postgraduate students: A qualitative study. Qualitative Research in Sport, Exercise and Health, 13(1), 25-39.

Chen, H., & Zhang, M. H. (2022). The relationship between basic psychological needs satisfaction and university students' academic engagement: The mediating effect of emotional intelligence. *Frontiers in Psychology, 13*, 917578.

Craig, C. L., Marshall, A. L., Sjöström, M., Bauman, A. E., Booth, M. L., Ainsworth, B. E., . . . Sallis, J. F. (2003). International physical activity questionnaire: 12-country reliability and validity. *Medicine & science in sports & exercise, 35*(8), 1381-1395.

Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The job demands-resources model of burnout. *Journal of Applied psychology, 86*(3), 499.

Gerber, M., & Pühse, U. (2008). "Don't crack under pressure!"—Do leisure time physical activity and self-esteem moderate the relationship between school-based stress and psychosomatic complaints? *Journal of psychosomatic research, 65*(4), 363-369.

IBM Corp, N. (2017). IBM SPSS statistics for windows. In: IBM corp Armonk, NY.

Levecque, K., Anseel, F., De Beuckelaer, J., & Gisle, L. (2017). Work organization and mental health problems in PhD students. *Research policy, 46*(4), 868-879.

Lindwall, M., Gerber, M., Jonsdottir, I. H., Börjesson, M., & Ahlborg, G., Jr. (2014). The relationships of change in physical activity with change in depression, anxiety, and burnout: a longitudinal study of Swedish healthcare workers. *Health Psychol, 33*(11),

Mandolesi, L., Polverino, A., Montuori, S., Foti, F., Ferraioli, G., Sorrentino, P., & Sorrentino, G. (2018). Effects of Physical Exercise on Cognitive Functioning and Wellbeing: Biological and Psychological Benefits. *Front Psychol, 9*, 509. doi:10.3389/fpsyg.2018.00509

Maslach, C. (2003). Job burnout: New directions in research and intervention. *Current directions in psychological science, 12*(5), 189-192.

Smith, A. R., Jones, J., & Smith, R. A. (2018). Leisure-time physical activity, academic stress, and health among postgraduate students: An international study. Psychology of Sport and Exercise. *applied psychology, 5*(7), 44-66.

Stathopoulou, G., Powers, M. B., Berry, A. C., Smits, J. A., & Otto, M. W. (2006). Exercise interventions for mental health: a quantitative and qualitative review. *Clinical psychology: Science and practice, 13*(2), 179.

Stults-Kolehmainen, M. A., & Sinha, R. (2014). The effects of stress on physical activity and exercise. *Sports medicine, 44*(3), 81-121.

Zhang, L., Wang, M., Li, H., Li, Y., & Zhao, L. (2017). The influence of sports participation on academic burnout and psychological well-being of Chinese college students. PLoS One, 12(1), e0170031.