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SEDENTARISM, ACADEMIC BURNOUT, AND MOTIVATION OF UNIVERSITY STUDENTS; IN PRACTICE OF ONLINE LEARNING DURING COVID CONDITION

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ABSTRACT

The present study was aimed to explore the relationship between Sedentarism, academic burnout, and motivation of university students on online learning during Covid condition. Prior to data collection pilot study was conducted on 20 participants for use in the main study. To address the main purposes of the study, we then employed a quantitative, cross-sectional research design, with a sample of 405 undergraduate male and female students aged between 18 - 24 years (*M*=21.9; *SD*=1.38) taken from various public and private sector universities of upper Punjab. The participants completed the International Physical Activity Questionnaire (IPAQ), the Burnout Scale for University Students, and Academic Motivation Scale along with the demographic sheet. Statistical analysis includes Pearson correlation, multiple hierarchal regression, independent sample t-test, and ANOVA to evaluate the correlation, prediction, and differences among variables. The results revealed a significant positive correlation was found between sedentarism and academic burnout and a significant negative correlation between academic burnout and motivation. The regression coefficient revealed the gender, sedentarism, and burnout factors including emotional exhaustion and boredom as significant negative predictors of motivation. The findings can be utilized to create awareness and devise an intervention plan for students to prevent the long-lasting detrimental impact of a sedentary lifestyle.

Keywords: Online learning, Sedentarism, physical activity, academic burnout, motivation

INTRODUCTION

Sedentarism, characterized by prolonged periods of inactivity, has become increasingly prevalent globally, exacerbated by modern lifestyles, technological advancement, and the COVID-19 pandemic's shift to online learning (Öksüz, 2023). This sedentary lifestyle poses significant health risks, including mortality. (Deliens et al., 2015; Mangis, 2016; Aristovnik et al., 2020). Despite its pervasive nature, sedentarism is frequently overlooked in academic circles, where the emphasis remains predominantly on grades rather than overall health (Dreison et al., 2018).

The increased urbanization develops a sedentary lifestyle, leading to physical inactivity resulting in health disasters on a psychological, physical, social, and emotional level (Lee et al., 2012). Evidence suggests that the shift to online education has led to increased sedentary behaviour among students (Moulin & Irvin, 2019). Research highlights various negative consequences, including long-term non-communicable metabolic diseases, associated with excessive sitting during online classes (Rafiullah, 2021). Moreover, the abrupt changes in students' lives have been linked to mental suffering and

adverse effects on academic performance and quality of life (Azzi et al., 2021). Various theories explained the health behaviours in an individual's life, including the health belief model, planned behaviour theory, reasoned actions theory, and self-determination theory. According to the socio-ecological model, sedentary behaviour has multifaceted and interacted determinants such as intrapersonal (individual characteristics), interpersonal (social networks), perceived environment, behaviour setting, and policy level (Bakker et al., 2018). Many naturally occurring factors influence sedentary behaviour in an adult's life, including family and social roles, employment, and financial pressures. Rollo et al. (2016) discussed the psychological factors as an antecedent of sedentary behaviour and divided them into three distinct properties: affect, cognition, and conation.

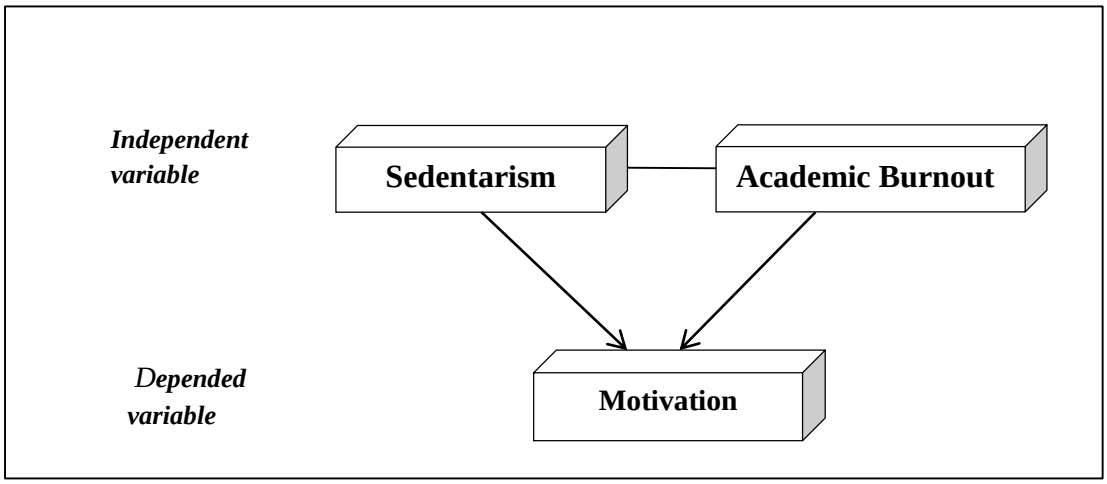
Academic burnout, characterized by emotional exhaustion, depersonalization, and reduced personal accomplishment, is a significant concern among students. This burnout, exacerbated by prolonged stress, manifests in various symptoms, including feelings of incompetence, emotional fatigue, and decreased motivation to study (Williams et al., 1996). Increased burnout is associated with many substantial health losses, negatively impacting well-being, decreased cognitive functioning, reduced productivity, and cause poor sleep. Burnout affects the self-efficacy of students, which is considered a barrier to academic motivation and achievement. The investigators in the past consider self-efficacy an individual factor in understanding the burnout construct (Charkhabi et al., 2013). Academic burnout disrupts the enthusiastic attitude of students toward learning and influences their normal daily functioning. Moreover, it is associated with loss of interest and sadness, resulting in reduced motivation level of students and negatively impacts the academic performance and quality of teach (Nowak., Bożek., & Blukacz. 2019).

Burnout and self-determination motivation are related to each other as more self-determined motivation leads to fewer burnout symptoms. Intrinsically motivated students feel less burnout (Change et al., 2016). Motivation has referred to the reason underlying the person's specific behaviour, and this motivated behaviour is energetic, goal-oriented, and permanent. The motivation quality depends on the various kinds of motives that direct a person's behaviour (Ali., Tatlah., & Saeed. 2011). According to Coatzee (2011) stated that motivation provides an individual with the essential force for strengthening, empowering, and directing their passion and energy to achieve a high level of satisfaction and high academic outcome. Motivation is a psychological force that drives human actions (Ali et al., 2012).

The relationship between sedentarism, academic burnout, and motivation is complex. Sedentarism contributes to burnout, which, in turn, diminishes students' self-efficacy and motivation toward academic pursuits. Empirical evidence underscores the detrimental effects of physical inactivity on psychological well-being, with sedentary behaviour associated with increased levels of stress, depression, and anxiety (Coakley et al., 2021). Therefore, the transition to online learning, compounded by sedentarism, poses multifaceted challenges for students, impacting their physical health, mental well-being, and academic success. Addressing these issues requires a comprehensive understanding of the complex interactions between sedentarism, burnout, and motivation, necessitating further research and targeted interventions to promote holistic student wellness in academic settings. This research aims to explore the relationship between sedentarism, academic burnout, and university students' motivation during online learning. Online learning during covid-19 poses a serious threat to the functional health of students as they move away from recreational sports and active leisure pursuits to a more sedentary lifestyle (Javaeed, 2019).

There are limited studies that link physical inactivity and burnout, especially in young adults. As we are concerned with the sedentary lifestyle of students and their impact on burnout and motivation level, we will highlight some resemblance studies' findings that will help us link the study variables. Physical inactivity is the predictor of burnout. Empirical evidence suggested that sedentary lifestyles are associated with physical diseases and attributed to many psychological issues and negative emotional states (Owen., Bauman., & Brown. 2009). A wide range of research on sedentary behaviour was conducted on children, working adults, and old ages, while less attention was paid to the student population. The undergraduates in universities are also involved in working activities on the campus, similar to white-collar workers in offices.

Proposed Conceptual Framework of Study Illustrated Independent and Dependent Variable



The conceptual framework of the study illustrated the link among variables based on existing literature. According to Rafiullah (2020) stated that attending online classes is associated with excessive sitting, leading to a sedentary lifestyle in students. This adopted lifestyle negatively impacts students' mental health. Academic burnout is further associated with low self-efficacy, less academic engagement, low study motivation (Ariani, 2017)

Method

The method section provides the essential information required for judging the ultimate validity of the study and helps to make the framework in which study variables can be adequately and procedure of the study.

Research Design

The research was quantitative by nature, and a correlational design was applied in this research. The basic aim of the study was to determine the relationship between sedentarism, academic burnout, and motivation of university students. Correlational design is well-suited to achieve the respective purpose. This study was done on university students. Both public and private universities in Sialkot were selected, including the University of Management and technology (UMT), University of Sialkot (USKT), University of Central Punjab (UCP), and Government Woman University Sialkot (GCWUS). A representative sample of university undergraduates who attended both online and face-to-face classes from different departments was recruited in this study.

Sampling strategy and Participants

Sample recruitment was done through the convenience sampling technique. There were 405 undergraduate level students, both girls, and boys selected from both government and private universities from Sialkot city. The data was comprised of (n=144, 35.6%) girls and (n=261, 64.4%) boys. The age range was 18-24 years. There was a total of 20 forms discarded having incomplete information.

Inclusion criteria of the Participants

- The university undergraduate students that fall in the age range of 18-24 were included in the study.
- The only students were included who had prior experience of in- person learning and currently shifted to online learning due to Covid -condition.

Measures

Culturally appropriate and valid tools were used in this study to gather the information from the participants. The participants completed the International Physical Activity Questionnaire (IPAQ), the Burnout Scale for University Students, and Academic Motivation Scale along with the demographic sheet.

Demographic Sheet

A structured questionnaire was designed for taking participant information to identify personal characteristics. Demographic variables include gender, age, residence, family system, separate study place, and department.

International Physical Activity Questionnaire

The International Physical Activity Questionnaire (IPAQ) developed by (Morris & Rogers, 2004). The short form of IPAQ with seven items was used in this study. The scale can be used with young and middle-aged adults (age 15-69). IPAQ measures three types of physical activity include; vigorous-intensity, moderate intensity, and walking time, based on days and minutes of engaging in physical activity from the past seven days. The last question measures the overall sitting time, a specific sedentary behaviour domain, and is computed separately. The scoring of this scale is based on METs (Metabolic equivalent tasks), which is the amount of energy expenditure carried by physical activity, and the formula of the computed total metabolic equivalent task for all domains is different. For calculating the vigorous METs (8*V-days*V-time), moderate METs (4*M-days*M-time), walking METs (3.3*W-days*W-time), and then total METs obtained by adding all domains. The physical activity level of a person categorizes as low (<600 METs), moderate (600-3000 METs), and high (> 3000 METs) (Morris & Rogers, 2004; Habib et al, 2020).. The IPAQ-U is valid and reliable tool for measuring physical activity and sedentary behaviours among Pakistani adults (Habib et al, 2020).

Burnout Scale for University Students

The burnout scale for university students is an indigenous and culturally appropriate scale developed by (Boada-Grau et al 2015). The scale consists of 53 items that measure four factors including emotional exhaustion, irritability, boredom, and dependability in university students. The items are scored on 4 point likert based on 0-3rating. The options include 0= never, 1= often, 2= mostly and 4= constantly. The scale had excellent psychometric properties as Chronbach alpha for all factors are .88 for factor 1 emotional exhaustion, 78 for factor 2 irritability, .86 for factor 3 boredom and .84 for factor 4 dependability. Chronbach alpha for overall scale is .95 which showed high reliability (Boada-Grau et al 2015).

Academic Motivation Scale

Vallerand, Blais, Brière, & Pelletier developed the academic motivation scale in 1992 and was revised in 2002. The scale is based on self-determination theory and measures three levels of academic motivation intrinsic, extrinsic, and motivation. The scale has 28 items and assesses seven types of constructs, each consisting of 4 items. The seven constructs include intrinsic motivation towards (knowledge, accomplishments, and stimulation), extrinsic motivation (identified, introjected, and external regulations), and finally a motivation. In this study, the five-point scoring is used, consistent with original scale development in literature. The measure has satisfactory internal consistency mean alpha value = .81 (Vallerand et al., 1992). The scale was translated into the national language before administering to Pakistani culture. Chronbach's alpha for the overall scale is .91, which showed higher reliability (Vallerand et al., 1992).

Procedure

The research was conducted into three phases, including the preparatory phase, pilot study, and main study.

Preparatory Phase

In this stage, the prerequisites of research were completed. After selecting the appropriate culturally valid tools, permission was taken from the authors via email for using the instrument in the respective study. One scale was indigenous, and the second was already translated into the national language/Urdu.

Scale Translation. The third scale was translated into the national language before data collection. Official permission was taken from the author of the scale for translating in the target language. The translation was done successfully according to the standard linguistic validation process recommended by the MAPI research institute.

Pilot Study

Before embarking on the main research project, the pilot study was conducted to investigate the user-friendliness of data collection instruments and to figure out the crucial element of the research as feasibility, process, and check the response rate. The recruitment of participants encompasses 20 undergraduate students, was selected randomly, and this small sample size was representative of the population. Most participants provide positive feedback as it is easy for them to comprehend the questions. They did not report any ambiguity about the items, and no complicated or unclear word in items was reported. All the scales were finalized for the main study after getting positive feedback.

Main Study

The official permission was taken for data collection from the head of the psychology department at the University of management and technology, Sialkot. Data was collected from different government and private educational institutions in Sialkot, including the University of management and technology (UMT), University of Sialkot (USKT), government college woman university Sialkot (GCWUS), and University of Central Punjab (UCP). After obtaining official institutional approval, participants were provided with the questionnaire, demographic sheet, and informed consent. They were made aware of the purpose of research, their voluntary participation, and the right to withdraw from a study at any time. Data were collected from undergraduate students who fall in the age range of 18-24 years. The respective participants were assured that their information would be kept confidential and that anonymity would be maintained. They have also explained the research purpose, complete procedure, time duration, etc. They were also provided with the awareness regarding their rights in research as they will have the right to ask any question if they face any difficulty understanding the items. In the end, participants have explained the significance of the study, and their queries and questions were adequately answered. The response rate was satisfactory.

Results

To achieve the research objectives, a systematic analysis was performed using SPSS 26.0 version. First of all, normality checks performed on the data and reliability analysis was conducted. The descriptive statistics of data as well as main and secondary hypothesis was measured through various tests.

Descriptive Analysis

This section describes the main feature of data in terms of mean, standard deviation, and frequencies. The description of the sample is mentioned below:

Table 1

Means and Standard Deviations of participants Age (N= 405)

Variable	M	SD
Age	21.19	1.38

Note. M=Mean, SD= Standard Deviation

Table 1 indicated that the Mean age of the sample comprised both girls and boys was 21.19 with a standard deviation of 1.38.

Table 2

Means and Standard Deviation of Participant's Sitting time (N=405)

Variable	M	SD
Sedentary time (per day)	8.16	3.72
Physical activity Time (per week)	4.87	4.22

Note. M=Mean, SD= Standard Deviation

Table 2 illustrates the mean score of participants' sedentary time as 8.16 with a standard deviation of 3.72. The descriptive value shows that students spend 8 hours per day sitting during online learning. On the other side, the mean score of physical activity time was 4.87 with a standard deviation of 4.22, which showed that participants spend 4 hours per week doing any kind of physical activity.

Table 3

Frequencies and Percentages of Participant's Physical Activity Level (N=405)

Variable		f	(%)
Physical Activity Level			
	High Active	58	14
	Moderate Active	210	51
	Inactive	137	33

Note. f= Frequency, %= percentage

Table 3 illustrated the physical activity level of participants as (n=58, 14%) were found as highly active, (n=210, 51%) were performed moderate-level activity, and (n=137, 33%) were inactive. The percentage of moderate physical activity levels was higher among other categories.

Psychometric Properties of Scale

This section includes the psychometric properties of three scales, including the International Physical Activity Questionnaire, Burnout Scale, and Academic Motivation Scale. The reliability analysis was performed to achieve this aim. The following table explained the descriptive statistics of scales used in this study:

Table 4

Cronbach's Alpha Coefficient of International Physical Activity Questionnaire, Burnout Scale, and Academic Motivation Scale

Scales	No of Items	α
International Physical Activity Questionnaire	7	.71
Burnout Scale for University Students	18	.89
F1_Emotional Exhaustion	14	.79
F2_Irritability	11	.86
F3_Boredom	10	.84
F4_Dependability	53	.95
BS_FT		
Academic Motivation Scale		
F1_Intrinsic Motivation	12	.97
F2_Extrinsic Motivation	12	.96
F3_Amotivation	4	.97
AMS_FT	28	.91

Note. BS= Burnout Scale, AMS=Academic Motivation Scale, FT= Factor Total, α = Chronbach alpha

Table 4 indicates psychometric properties for the scales used in the current study. The Chronbach alpha value for International Physical Activity Questionnaire (IPAQ) was α= .71 (>.70), which seemed to be an acceptable value. The alpha value for the burnout factors was α =.89 for emotional exhaustion, α= .79 for irritability, α= .86 for boredom, α =.84 for dependency, and Cronbach alpha for total factors of Burnout Scale (BS) was α= .95 (>.90) which indicates the high internal consistency. Finally, the alpha value for motivation factors was α=.97 for intrinsic motivation, α=.96 for extrinsic motivation, α= .97 for amotivation, and α=.91 (>.90) for total factors of Academic Motivation Scale (AMS), which seemed as excellent value (Duker, 1999). The Chronbach's alpha value depicted the high internal consistency of scales used in this study.

Table 5

Inter Correlation, Means and Standard Deviation of Scores on Physical Activity (PA) Sitting Time (ST) with Total Factors of Academic Burnout (AB) and Total Factors of Motivation (M) of University Students (N=405)

Variables	S1	S2	AB1	AB2	AB3	AB4	AB_T	M1	M2	M3	M_T
S1_Physical Activity (PA)	---	-.67**	-.43**	-.32**	-.43**	-.39**	-.44**	.61**	.58**	-.60**	.59**
S2_Sitting Time (ST)	---	---	.68**	.53**	.66**	.64**	.70**	-.89**	-.87**	.88**	-.88**
AB1_Emotional Exhaustion	---	---	---	.72**	.77**	.83**	.95**	-.71**	-.68**	.69**	-.69**
AB2_Irritability	---	---	---	---	.60**	.69**	.83**	-.56**	-.52**	.54**	-.54**
AB3_Boredom	---	---	---	---	---	.74**	.87**	-.70**	-.68**	-.69**	-.69**
AB4_Dependability	---	---	---	---	---	---	.91**	-.66**	-.64**	.67**	-.65**
AB_T	---	---	---	---	---	---	---	-.73**	.71**	.72**	-.72**
M1_Intrinsic Motivation	---	---	---	---	---	---	---	---	.95**	-.95**	.98**
M2_Extrinsic Motivation	---	---	---	---	---	---	---	---	---	-.94**	.98**
M3_Amotivation	---	---	---	---	---	---	---	---	---	---	.-93**
M_T	---	---	---	---	---	---	---	---	---	---	---

Note .PA=Physical Activity, ST= Sitting Time, AB = Academic Burnout, M=Motivation, **p<.01, ***p<.001

Table 5 illustrates the relationship among study variables. Findings indicated that physical activity was significantly negatively correlated with sedentary time, four factors of burnout as emotional exhaustion, irritability, boredom, and dependability. Physical activity and amotivation. The sedentary time was significantly positively correlated with all three factors of burnout and amotivation factor. A strong negative correlation was found between sitting time and intrinsic and extrinsic motivation factors.

The emotional exhaustion factor of burnout was found to be highly positively correlated with all other factors of burnout, sedentary time, and amotivation factor, and highly negatively correlated with physical activity, intrinsic motivation factor, and extrinsic

motivation factor. The irritability factor of burnout had a positive correlation with all other factors of burnout, sedentary time, amotivation factor, and negatively correlated with physical activity, intrinsic and extrinsic motivation. The dependability and boredom factors of burnout had significant positive correlations with other burnout factors, sedentary time, amotivation factor, and negative correlation with physical activity, intrinsic motivation factor, and extrinsic motivation factor.

The intrinsic motivation factor of academic motivation was found to be significantly positively correlated with physical activity, the extrinsic factor of motivation, and had a strong negative correlation with sedentary time, all four factors of burnout and amotivation factor. The extrinsic motivation factor was significantly positively correlated with physical activity, the extrinsic factor of motivation, and had a strong negative correlation with sedentary time; all four factors of burnout include emotional exhaustion, irritability, boredom, dependability, and amotivation factor. Finally, the amotivation factor was highly positively correlated with sitting time, four factors of burnout, and physical activity. Moreover, the table indicated the inter-correlation of study variables. There was significant negative correlation was found between sedentary time with physical activity (r =-.67, p<.01) and motivation (r=. 88, p<.01). The sedentary time was highly positively correlated with total burnout factors (r=.70, p<.01). Physical activity had a strong negative correlation with academic burnout (r=-.44, p<.01) and a positive correlation with motivation (r=.59, p<.01). A significantly negative correlation was found of academic burnout with motivation (r=-.72, p<.01) of university students.

Hierarchal Regression Analysis

The multiple hierarchal regression analysis was performed to determine the predictive relationship of sedentarism and academic burnout with students' motivation. Furthermore, the significant predictors from demographic characteristics were found with main variables.

Table 6

Hierarchal Regression Analysis of Predictors of Motivation in University Students (N=405)

Variables	β	SE β	95% CI		R^2	ΔR^2
			LL	UL		
Step I					.33	.33***
Gender	-.56***	1.45	-22.52	-16.81		
Step II					.78	.78***
Sedentary Time	-.87***	.15	-4.25	-3.64		
Step III					.81	.80***
Sedentary Time	-.73***	.17	-3.65	-2.96		
AB1_Emotional Exhaustion	-.10***	.08	-.33	-.01		
AB2_Boredom	-.14***	.09	-.54	-.16		

Note: Only significant results are presented in steps I, II, and III, CI= Confidence interval, β= Beta Coefficient, UL= Upper Limit, LL=Lower Limit, ***P<.001.

Table 6 illustrated gender, sedentary time, emotional exhaustion, and boredom as significant predictors of academic motivation. In step I, the R^2 value of .33 indicated gender as a significant predictor explained 33% variance in the dependent variable with F (2, 402) = 97.75, p <.001. The Findings show that gender is a significant negative predictor of academic motivation (β= -.56, p<.001). In step II, the R^2 value of .78 revealed that sedentary time is a significant predictor explained 78% Variance in academic motivation with F(4,400)= 57.29, p<.001. It was indicated that sedentary time is a significant negative predictor of academic motivation (β= -.87, p<.001). In step III, the R^2 value of .80 revealed that sedentary time, emotional exhaustion, and boredom are predictors of outcome variable explained 80% variance with F (8, 396) = 20.35. Finally, the model revealed that sedentary behaviour (β= -.73 p<.001), emotional exhaustion (β= -.10, p<.001), and boredom (β= -.14, p<.001) significantly negative predicted the motivation in university students.

Discussion

The current study aimed to explore the relationship between sedentarism, academic burnout, and motivation of university students during online learning. University students are the most vulnerable population subgroup identified at risk to develop accumulated high volume of sedentary time. The health-compromising lifestyle in university students has been of great concern for decades. A systematic review indicated a high percentage of university undergraduates spend their time sedentary as approximately 10-11 hours/day (Moulin & Irvin 2017).

The study's preliminary findings explored the descriptive characteristics of sedentary time and students' physical activity levels. The majority of students were moderately active in our study and spent 8 hours sitting per/day. This percentage is meaningful and consistent with recent research. The research Bennasar-Veny et al. (2020) indicated that the abrupt changes in students' lives during the lockdown as attending classes online restrict their movement, resulting in a reduction of physical activity and leading them to be more sedentary. The results supported by various researches investigated the increasing sedentary time and inactivity in university students during the lockdown. Mean scores of sitting time varied from 4 hours per/day to 9 hours per/day. (Castro et al., 2020; Rafiullah, 2021).

The findings supported the hypothesis of the study revealed a significant positive relationship of sedentary time with burnout factors as students who spend more time being sedentary experience more burnout symptoms. The study Lane (2021) indicated that sedentarism as a risky behaviour negatively influences both mental and physical well-being. Sedentary behaviour and insufficient physical activity are associated with psychopathological symptoms, resulting in delirious mental health consequences and psychological distress (Wu et al., 2015; Lee & Kim, 2019).

The findings also supported of the study finding which indicated a significant negative relationship of burnout with extrinsic and intrinsic motivation. Students who experience less burnout are more motivated towards academics. The findings explored the positive correlation of burnout with amotivation factor as high burnout expression in students' leads to no study motivation. Empirical evidence supported these findings as students' high level of academic burnout is associated with low self-efficacy, less academic engagement, and low study motivation (Ariani, 2017). Our findings revealed that burnout was a significant negative predictor of motivation. Similar research in Pakistan also confirmed that students who feel classroom-related boredom have more external motivation and amotivation towards study and a high level of boredom, which leads to a reduction in intrinsic motivation (Khan et al., 2019). Moreover, the theories of burnout also supported the results of our study as three dimensional phenomena of burnout in literature in which exhaustion lead to chronic fatigue, depersonalization associated with low motivation and purposelessness of task, and reduce personal accomplishment leads to feeling of incompetent (Maslach & Schaufeli 1996).

Physical activity and sedentary time are inversely correlated (Habib et al., 2020). The result of this study depicted the significant negative relationship of physical activity with burnout factors. The findings were consistent with previous researches as students who perform high-intensity physical activity are protective against burnout symptoms, including emotional exhaustion and disengagement. (Ali et al., 2020).

In the present research, a few secondary hypotheses were also generated. It was indicated that girls spend

more time sedentary and less physically active than boys who reported less sedentary time and more physical activity level. The results align with previous research, as prolonged sedentary patterns are more prevalent in women, whereas men are more involved in physical activity (Azzi et al., 2021). In Asian societies, women's jobs are more houses oriented as they are involved in household tasks and choose less active jobs. Women in our society have less interest in sports activities than men (Rehman et al., 2020). Moreover, it was also found that girls experience more burnout symptoms than boys. Empirical evidence supported these findings as women were found to be more emotionally exhausted, cynical, and detached from society than their men counterparts (Muzafar et al., 2015). In Asian culture, girls are under the added pressure of academic burden and family responsibilities that deplete their energy and time. (Allwood., Geisle., & Buratti. 2020).

Furthermore, the findings indicated that boys were more intrinsically and extrinsically motivated towards academics than girls who have no motivation. The possible explanation of this contradiction may be that students are more involved in physical activity, as indicated in the current research that influences their mental health and academic life. In Asian societies, boys are considered the main breadwinner in the family, and they perceive education as a sense of responsibility (Finch., Tomiyama., & Ward. 2017).

Moreover, the research found no significant relationship between areas of study or departments in which students are less motivated (Finch et al., 2017). The possible explanation of these contradictions may be that business education students are more active due to the practical nature of their subjects as they visit banks and different enterprises to complete their projects. Their activity mainly includes outdoor transportation, which keeps them more active and less sedentary. Previous studies also confirmed that transportation-related activities break the sedentary cycle and keep individuals more physically active (Romero-Blanco et al., 2020).

Conclusion

The present research is one of few studies conducted in Pakistan to explore the relationship between sedentarism, academic burnout, and motivation in university students; during online learning. The findings revealed the significant negative relationship between sedentary time, physical activity, and motivation. Sedentary time was significantly positively correlated with burnout. Gender, sedentary time, and burnout were found to be significant predictors of motivation in university students. Based on the current findings it can be concluded that the adopted sedentary lifestyle makes students vulnerable to mental health problems and disrupt their academic life.

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