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PHYSICAL ACTIVITY LEVEL AND ITS RELATIONSHIP TO MENTAL HEALTH LEVEL AMONG STUDENTS AT NORTHERN BORDERS UNIVERSITY

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Abstract— This study aimed to investigate the relationship between physical activity levels and mental health among students at Northern Borders University, along with examining variations based on gender, academic year, and college. A descriptive survey method designed, the researcher utilized the Physical Activity & Mental Health Questionnaire (PAMHQ), which assessed two main dimensions: physical activity (including basic activity, practiced physical activity, and health awareness) and mental health (covering stress and anxiety, general mental health, and happiness and optimism). The PAMHQ was administered to 375 students across various colleges. Analytical methods employed included Pearson correlation coefficient, independent t-test, and one-way ANOVA. Results showed a low level of physical activity in general; basic physical activity was average, while practiced activity and health awareness were low. Similarly, overall, the level of mental health was low; stress and anxiety were rated as low, and general mental health rated as low too, whereas happiness and optimism were assessed as average. The study also revealed a positive correlation between physical activity level and the level of mental health. However, statistical analyses revealed no significant differences in physical activity or mental health among students based on gender, academic year, or college. The researcher recommended that university leaders promote sports and physical activities, integrating them into the curriculum to enhance students' mental well-being.

Keywords— physical activity; mental health, practiced; awareness; stress; anxiety; happiness; optimism

I. INTRODUCTION

The university environment is a big life transition for students, where they become mature and independent individuals. Yet, as they face many challenges and experience new adventures and possibilities as well, they become vulnerable to many health risks surrounding them. From illnesses to unhealthy lifestyle habits. Poor sleeping, lack of exercise, and bad eating habits are common health challenges for college students. Mental health is also a big issue in student's life, with the pressure of exams, grades, and financial aid requirements, the risk for anxiety and depression would increase. Students entered by then; into a whirlpool of missing deadlines, skipping classes, frequent failure, and may disconnect from university.

Health assessments are mandatory at many universities around the world. Each university either conducts its own health assessment or uses a standardized one designed for student health profiles. Typically, universities, hospitals, or medical centres are responsible for these assessments, which provide a clear overview of major health concerns, such as epidemic diseases (e.g., COVID-19), infectious diseases, substance abuse, and psychological disorders. Doctors and health staff at the university prepare for sudden incidents requiring emergency plans as well as set long-term plans.

Mental health assessments vary in form and focus, due to the variation of diagnosis path and protocol set by different mental and psychological schools. Indeed, there is a kind of agreement to the diagnosis and treatment of major mental and psychological disorders uses DSM_IV that globally well-known mental health assessment established by the American Psychology Association (APA), which must be assessed by mental health experts. However, based on the protocol that this study was set, the assessment should be self-reported. Therefore, for this purpose, researchers applied the Physical Activity & Mental Health Questionnaire PAMHQ.

This part of the assessment will provide a diagnosis scoop of college student physical and mental health status.

Based on scanning many research studies that were published on students' general health. Mental health status is commonly reflected by his/her physical health status for college students. Where physical illness is as simple as a headache would affect students' mental states such as losing concentration or feeling unconcise in class. So, the extent to which mental health level is related to physical health level for university students will be examined and reported.

A. Research problem

University students are consistently exposed to many health risks; physical and mental exhaustion, which impact not only their academic state but also threaten their life. They are commonly reported stressors, anxiety, and depression that are caused by study load, sleeplessness, bad eating habits, less workout, and poor healthy lifestyle in general, these and more health issues have not yet been screened or reported by the university health department. For the university, to be part of the vision of 2030, it should focus on the students' quality of life, and it should predict any mental and physical health disorder or deviation. So, this study is responsive to the development era of Saudi country and its citizens, particularly, the health status of the students at Northern Border University.

B. Research objectives

The objective of this study is to provide clear screening data on the current physical activity and mental health level of university students through:

A. reporting on the mental health level of university students.
B. reporting on the physical activity level of university students.
C. reporting the total health level for university students.
D. determine the influence of physical activity level on mental health among university students.

C. Research Questions

The research questions can be identified by finding an answer to the following main question: The extent to which students' mental health level is related to their physical health level? Several sub-questions emerged from this main question, which the study was keen to answer according to the following:

E. what is the level of physical activity among students at Northern Borders University?
F. what is the level of mental health among the students at Northern Borders University?
G. what are the general total health levels of students?
H. are there statistically significant differences in the levels of physical activity and mental health among students at Northern Borders University, attributed to the variables (gender, academic year, college)?
I. is there a statistically significant relationship between the level of physical activity and the level of mental health among students at Northern Borders University?

D. Research Significant

This study will provide a big screening of college students' total health, particularly the current mental and physical activity levels of university students, thus; this study would predict the signs of students' mental health disorders consequences-related in early stage, as well as the signs of any epidemic or health problems associated with university students. In addition, this study would support the major objective of the Saudi vision of 2030, where promoting and implementing the quality-of-life program is a major goal, moreover; the study outcomes would provide a great scoop for university leaders and stakeholders to address future strategic planning for the university student's health domain.

E. Research Limitations

This study had several limitations; these limitations should be acknowledged to provide transparency and context for the study's findings. The identified limitations were related to subject issues, humanitarian issues, location issues, and time issues.

J. subject limitations: This study was limited to the physical activity and mental health outcomes estimated in the Physical Activity & Mental Health Questionnaire PAMHQ, which is self-reported assessment. However, possible delimitations, such as the impact of stigma and individual perceptions of various physical and mental health disorders may not accurately reflect actual mental health status.

K. humanitarian limitations: This study was limited to university students regardless of some external factors, such as socioeconomic status, family interaction, or community support, which are often difficult to control or adequately measured in research.

L. location limitation: This study was limited to registered male and female students from different colleges and course levels at Northern Border University in Arar. The sample size and lack of diversity may not sufficiently reflect the overall student population.

M. time limitations: This study was limited to university students who registered and applied to the fall semester in 2025.

II. THEORETICAL FRAMEWORK

This study would cover the physical activity level and the mental health level for college students. Thus, for diagnosis physical activity and mental health levels combined and suggested the improvement area based. The researcher provides some terminology associated with this study like:

A. Physical Activity

physical activity is defined by Caspersen, Powell, and Christenson (1985) as “any bodily movement produced by skeletal muscles that requires energy expenditure. It includes exercise. playing, working, active transportation, house chores and recreational activities” (p. 124). Bouchard and Shephard (1994) defined Physical activity) as “any bodily movement produced by contraction of skeletal muscles that results in a substantial increase in energy expenditure over resting values” (p. 37). In this study; physical activity refers to: student physical performance level in motion ranging from walking inside university campus to performing vigorous practice of physical activity.

B. Mental health

According to the World Health Organization (WHO), “Mental health is defined as a state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community”. Another definition adapted from American Psychology Association (APA) Dictionary of Psychology: “Mental health is a state of mind characterized by emotional well-being, good behavioural adjustment, relative freedom from anxiety and disabling symptoms, and a capacity to establish constructive relationships and cope with the ordinary demands and stresses of life”. Mental health in this study: defined as a stabilized and balanced mentality state of college students that led to positive thinking, attitude, and behaviour toward deferent challenging aspects of university environment.

III. LITERATURE REVIEW

In numerous universities worldwide, it is a requirement for incoming students to complete a health assessment prior to their enrolment. However, the presence of prevalent health issues, regardless of their severity, can significantly hinder students' ability to concentrate on their daily academic responsibilities. Despite the concern about students’ mental and physical health

problems, students are not trained to seek help. This is not only related to the students' negative perception of being physically or mentally ill, but also the student's health assessments have not been given such attention by university leaders.

Physical health concerns for university students have been covered in many research studies. Recent study by Jiang and Wang (2025) examined the effect of physical activity on social physique anxiety to college students, result revealed that physical activity negatively predicted social physique anxiety Another new study conducted by Pan and colleagues (2024) examined how physical activities impact positive psychology in college students, the findings indicated that engaging in physical activities notably enhanced self-efficacy, positive emotions, and overall well-being among college students. Research conducted by Hodge, Wright, and Bennett (2019) explored the implications of physical health, mental health, and academic performance among university students in Australia. The results indicated that a discrepancy between effort and reward was associated with poorer physical health, increased levels of burnout, and reduced productivity.

It has been found that regular physical exercises contribute to improving physical fitness and increasing life satisfaction. According to Mayo Clinic Staff (2023) Consistent physical exercise enables students to uphold their physical well-being by promoting healthy weight management, developing robust muscles, and enhancing cardiovascular health. Additionally, engaging in physical activity strengthens muscles and bones, leading to better posture and coordination (Mayo Clinic Staff, 2023). Numerous studies have demonstrated that physical exercise can significantly enhance sports' body shaping and body image (Zhang, Liu, Wang, & Wang, 2024). Reducing the risk of chronic diseases, such as heart disease and diabetes (Kalfin, Yuningsih, & Prabowo, 2024). Enhancing physiological mechanisms within the body (Gerber et al., 2017). Demonstrating better health and psychological well-being indicators (Sirojova, 2024).

Mental health issues, if not identified and addressed, can lead to negative consequences, including academic failures such as poor examination performance, disengagement from educational institutions, and in severe cases, attempted suicide. Additionally, these challenges may contribute to engagement in high-risk behaviours that can result in serious injuries, disabilities, or fatalities (Cook, 2007). A study by Grasdalsmoen et al. (2020) examined the link between low physical activity and self-harm or suicide attempts among university students. The findings revealed that lower levels of exercise were correlated with worse mental health and increased suicidality, showing a dose-response relationship.

College students' mental health is a critical concern within the academic environment. A study conducted by Wilks et al. (2020) examined the correlations between physical and mental health scores among college students from five institutions in the Northeastern United States. The researchers found that college students exhibited significantly poorer mental health compared to the general adult population. Furthermore, the study revealed that compromised mental health is closely associated with diminished academic performance, addiction to technology and social media, persistent multitasking behaviours, and a demand for immediate responses (Wilks et al., 2020). A study conducted by Åvitsland and others (2020) explored the association between physical fitness and mental health among Norwegian adolescents. The findings indicated that muscular strength and cardiorespiratory fitness were correlated with various psychological difficulties, including emotional symptoms, conduct problems, hyperactivity, challenges in peer relationships, and prosocial behaviour, respectively (Åvitsland et al., 2020).

Research indicates a significant prevalence of mental distress among university students, highlighting the urgent need for effective mental health care. A study by Negash, Khan, Medhin, Wondimagegn, and Araya (2020) examined mental distress, perceived need, and barriers to

accessing professional mental health care among university students in Ethiopia, revealing that 34.6% of participants exhibited symptoms indicative of mental distress, among those experiencing mental distress, 70.5% acknowledged a perceived need for professional mental health services (Negash, Khan, Medhin, Wondimagegn, & Araya, 2020).

Physical and mental health for university students has been always combined in many studies. A recent study by Ahsan and Abualait (2025) sought to assess the impact of physical activity on the mental health of university students. The findings indicated that higher levels of engagement in physical exercise were linked to lower symptoms of depression, anxiety, and perceived stress, along with an improved quality of life. This is also indicated in another study by Zhao, Zhang, and Liu (2024) confirmed that physical exercise can significantly positively predict mindfulness and meaning in life, and significantly negatively predict depression. While in recent study by Cao, Zheng, Ran, and Lang (2024) explored the impact of physical exercise on mental health among female college students. They found that physically active female students exhibited a positive coping styles and psychological resilience (Cao, Zheng, Ran, & Lang., 2024).

The benefits of physical activity to mental health among college students have been proven in many research studies (Torales et al., 2024, Almquist, 2023., Rodriguez et al., 2022), where they assessed the impact of physical activity on depression, anxiety, and stress among university students, result indicated that the higher levels of physical activity were associated with lower levels of depression, anxiety, and stress. Another research by Kim, Song, and Jeon (2021) investigated the effect of physical activity levels on depression and personal relationships among college students. The results revealed significant differences between depression across activity level groups. As the physical activity level increases, symptoms like emotional, cognitive, and synchronous decreases. Regarding interpersonal relationships according to physical activity, as the physical activity level increases, the sympathetic-acceptable and sociable-friendliness factors increase too (Researchers Kim, Song, & Jeon, 2021).

In this study, the researcher predicted a significant relationship between physical activity and mental health, and the correlation of physical activity on mental health is well-documented in many studies. Based on the results of several previous researchers (Ahsan & Abualait, 2025, Cao, Zheng, Ran, & Lang., 2024; Kim et al., 2012; Labrie et al., 2010; Dubos et al., 2007; LaMonte et al., 2005; Bolognini et al., 1996) found that regular physical activity and participation in sports decreased anxiety and depression and increased self-esteem, in addition, cardio and endurance exercises decreased the risk of obesity and metabolic syndrome. Therefore, this research aimed to determine the level of physical activity and the level of mental health among college students at NBU. researcher also aimed to investigate the relationship between the physical activity level and mental health level of college students

IV. METHODOLOGY

The researcher applied the descriptive survey method based on the study objectives and the information to be gathered. The objectives of the study were: (1) to explore the level of physical activity and mental health status among students at Northern Borders University, (2) to examine the relationship between mental health status and physical activity levels among students, and (3) to identify statistically significant differences in the levels of physical activity and mental health that attributed to the variables of gender, academic year, and college.

A. Participants

N. the students' population (N = 16000) is based on the record office at Northern Border University.

O. pilot Sample: The study tool was applied to 30 students to verify the reliability of the instrument.
P. main Sample: A random sample of (n = 375) voluntarily undergraduate students participated in this study. They were selected from various university colleges. Table (1) presents the study sample according to demographic variables (academic year, college, gender).

B. Instrumentation

A self-reported Physical Activity & Mental Health Questionnaire (PAMHQ) was answered with five-point Likert scale range (Always, Often, Sometimes, Rarely, Never). PAMHQ was developed after reviewing relevant theoretical literature on physical activity and mental health, including sources such as (World Health Organization, 2020), (American College of Sports Medicine, n.d.), (U.S. Department of Health and Human Services, 2018), (Rodríguez-Romo et al., 2023), and (Huang et al., 2024). The survey consisted of two sections. First: Physical Activity Level that contains three dimensions, as follows: Basic Physical Activity (8) items, Practiced Physical Activity (8) items, and Awareness of Health and Physical Activity (10) items. Second: Mental Health Level that contains three dimensions, as follows: Stress and Anxiety (7) items, General Mental Health (7) items, and Happiness and Optimism (8) items.

C. Validity and Reliability

The researcher presented the initial version of the questionnaire to a group of specialists and experts in the field. These experts were asked to examine the questionnaire and provide feedback on several aspects, including the clarity of the items, ability to meet the study's objectives, comprehensiveness and diversity of content, and consistency of the dimensions with the section they represent. Experts provide feedback that contributes to improving the questionnaire, and ensuring it was presented in the best possible form. Therefore, it can be concluded that the questionnaire achieved content validity.

The reliability of the questionnaire was calculated using Cronbach's Alpha. Table (2) presents the results

TABLE I
DESCRIPTION OF THE STUDY SAMPLE ACCORDING TO DEMOGRAPHIC VARIABLES (ACADEMIC YEAR, COLLEGE, GENDER)

Variable	**Variable Categories**	**Frequency**	**Percentage**
Academic Year	First	101	26.9%
	Second	88	23.5%
	Third	94	25.1%
	Fourth	92	24.5%
	Total	**375**	**100.0%**
Gender	Male	194	51.7%
	Female	181	48.3%
	Total	**375**	**100.0%**
College	Health Colleges (Medicine, Medical Sciences, Nursing, Pharmacy)	121	32.3%
	Scientific Colleges (Engineering, Sciences, Computer Science & Information Technology)	113	30.1%

Variable	Variable Categories	Frequency	Percentage
	Humanities Colleges (Humanities & Social Sciences, Design & Arts, Business Administration)	141	37.6%
	Total	**375**	**100.0%**

TABLE 2
RELIABILITY COEFFICIENTS OF THE QUESTIONNAIRE USING CRONBACH'S ALPHA.

Dimension/Section	Number of Items	Cronbach's Alpha
Basic Physical Activity	8	.847
Practiced Physical Activity	8	.876
Awareness of Health and Physical Activity	10	.880
Physical Activity	26	.928
Stress and Anxiety	7	.884
General Mental Health	7	.858
Happiness and Optimism	8	.934
Mental Health	22	.896
Questionnaire Reliability	48	.953

It is clear from Table (2) that all reliability coefficients for the dimensions and sections of the questionnaire are statistically high. According to Field (2013), a reliability coefficient greater than 0.80 indicates a high level of reliability.

D. Statistical Analysis

Descriptive Statistics: The mean and standard deviation were used to determine the levels of physical activity and mental health among students at Northern Borders University. The levels were classified (Table, 3) according to the following scale:

TABLE 3
CLASSIFICATION OF LEVELS BASED ON MEAN VALUES

Level	Mean
Very Low	1.00 to less than 1.80
Low	1.80 to less than 2.60
Moderate Level	2.60 to less than 3.40
High	3.40 to less than 4.20
Very High	4.20 to 5.00

- Pearson Correlation Coefficient: This was used to calculate the correlation between the level of physical activity and mental health among students at Northern Borders University.
- Independent Samples Test: This test was used to identify differences based on the (Gender) variable, which consists of two categories.
- One-Way ANOVA: This test was used to identify differences based on the (Academic Year & College) variables, which consist of three categories.

V. RESULTS

To answer the first research question, which states: What is the level of physical activity among the students at Northern Borders University? Descriptive statistics: including the mean, standard deviation, ranking, and level estimation were used. Table (4) and Figure (1) present the results of this analysis.

TABLE 4
MEAN, STANDARD DEVIATION, RANKING, AND ESTIMATION OF THE PHYSICAL ACTIVITY LEVEL.

No	Dimension/Section	Mean	Std. Deviation	Ranking	Level
1.	Basic Physical Activity	2.67	0.523	1	Moderate
2.	Practiced Physical Activity	2.42	0.644	3	Low
3.	Awareness of Health and Physical Activity	2.34	0.496	3	Low
4.	**Physical Activity**	**2.48**	**0.372**		**Low**

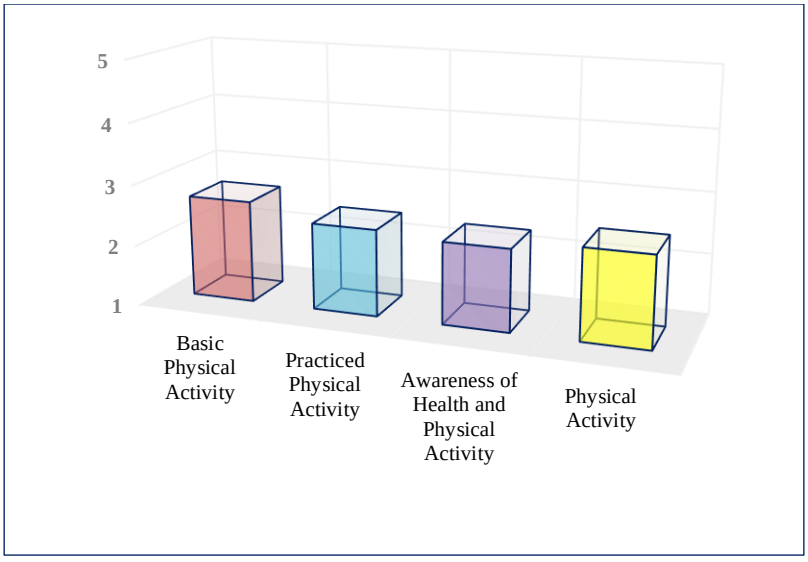

Fig. 1. Means of the Physical Activity Level

It is clear from Table (4) and Figure (1) the result of physical activity level among the students at Northern Borders University as follows:

The findings indicate a range of dimensions with differing strengths. The Basic Physical Activity Level was assessed at a moderate level, recording a mean score of (2.67). In contrast, the two dimensions were identified as weak, with Practiced Physical Activity and Awareness

of Health and Physical Activity presenting mean scores of (2.43) and (2.42) respectively. Overall, the collective physical activity level among the students was determined to be low, with a mean score of (2.48). These results highlight the necessity for enhancing physical activity engagement and health awareness among the university's student population.

To answer the second research question, which states: What is the level of mental health among students at Northern Borders University? Descriptive statistics were used, including the mean, standard deviation, ranking, and level estimation. Table (5) and Figure (2) present the results of this analysis.

TABLE 5
MEAN, STANDARD DEVIATION, RANKING, AND ESTIMATION OF THE MENTAL HEALTH LEVEL.

No	Dimension/Section	Mean	Std. Deviation	Ranking	Level
1	Stress and Anxiety	2.20	0.454	3	Low
2	General Mental Health	2.55	0.482	2	Low
3	Happiness and Optimism	2.75	0.458	1	Moderate
4	**Mental Health**	**2.50**	**0.279**		**Low**

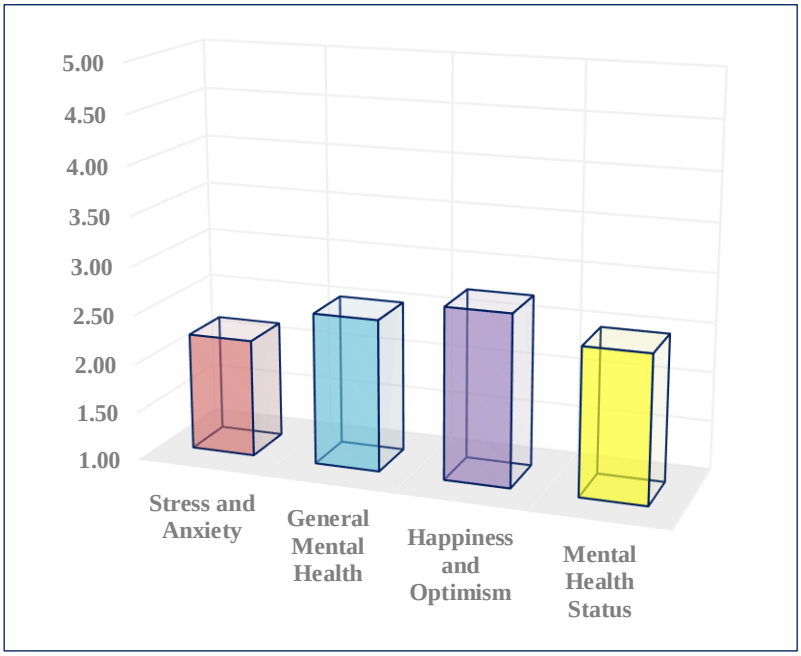

Fig. 2. Means of the Mental Health Level

It is clear from Table (5) and Figure (2) the result of mental health level among the students at Northern Borders University as follows:

The results revealed varying levels of well-being. Happiness and Optimism emerged as a dimension with a moderate level, exhibiting a mean score of (2.75). Conversely, two dimensions were identified at a weak level, with General Mental Health and Stress and Anxiety reflecting means of (2.20) and (2.55) respectively. Collectively, the overall mental health level of the students was assessed as low, represented by a mean score of (2.50). These findings

suggest a need for targeted interventions to enhance mental health among the student population.

To answer the third research question, which states: Are there statistically significant differences at the significance level ($\alpha \leq 0.05$) in the levels of physical activity and mental health that are attributed to the variables (gender, academic year, college)? The following methods were used:

- Independent Samples T-Test was used to identify differences based on the variable (gender), which consists of two categories. Table (6) presents the results of this analysis.
- One-way ANOVA was used to identify differences based on the variables (academic year and college), which consist of three categories. Tables (7) and (8) present the results of this analysis.

1) Differences based on the gender variable:

Table (6) reveals no statistically significant differences in the levels of physical activity and mental health among Northern Borders University students based on gender, as all significance levels for the dimensions exceed (0.05), indicating that gender does not influence these levels at a significance level of ($\alpha \leq 0.05$).

TABLE 6
FONT SIZES FOR PAPERS

Dimension/Section	Gender	N	Mean	Std. Deviation	t	Sig
Basic Physical Activity	Male	194	2.66	0.510	.199	.842
	Female	181	2.67	0.538		
Practiced Physical Activity	Male	194	2.42	0.644	.107	.914
	Female	181	2.41	0.646		
Awareness of Health and Physical Activity	Male	194	2.34	0.499	.255	.799
	Female	181	2.35	0.495		
Physical Activity	**Male**	**194**	**2.47**	**0.366**	**.143**	**.887**
	Female	**181**	**2.48**	**0.379**		
Stress and Anxiety	Male	194	2.19	0.445	.805	.421
	Female	181	2.22	0.464		
General Mental Health	Male	194	2.56	0.489	.613	.540
	Female	181	2.53	0.476		
Happiness and Optimism	Male	194	2.79	0.448	1.728	.085
	Female	181	2.70	0.467		
Mental Health	**Male**	**194**	**2.51**	**0.280**	**.861**	**.390**
	Female	**181**	**2.49**	**0.279**		

2) Differences based on variable academic years:

Table (7) indicates no statistically significant differences in physical activity and mental health levels among Northern Borders University students based on academic year, as all significance levels exceed (0.05) at a significance level of ($\alpha \leq 0.05$).

TABLE 7
ONE-WAY ANOVA TO IDENTIFY DIFFERENCES IN PHYSICAL ACTIVITY AND MENTAL HEALTH LEVELS BASED ON ACADEMIC YEAR.

Dimension/Section		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
Basic Physical Activity	Between Groups	.251	3	.084	.305	.822
	Within Groups	101.961	371	.275		
	Total	102.212	374			
Practiced Physical Activity	Between Groups	.263	3	.088	.210	.890
	Within Groups	155.029	371	.418		
	Total	**155.291**	**374**			
Awareness of Health and Physical Activity	Between Groups	.627	3	.209	.848	.468
	Within Groups	91.528	371	.247		
	Total	**92.156**	**374**			
Physical Activity	Between Groups	.066	3	.022	.158	.924
	Within Groups	51.619	371	.139		
	Total	**51.685**	**374**			
Stress and Anxiety	Between Groups	1.063	3	.354	1.730	.160
	Within Groups	75.993	371	.205		
	Total	77.056	374			
General Mental Health	Between Groups	.146	3	.049	.208	.891
	Within Groups	86.842	371	.234		
	Total	**86.988**	**374**			
Happiness and Optimism	Between Groups	.388	3	.129	.614	.606
	Within Groups	78.232	371	.211		
	Total	**78.621**	**374**			
Mental Health	Between Groups	.235	3	.078	1.007	.389
	Within Groups	28.897	371	.078		
	Total	**29.132**	**374**			

3) Differences based on college variable:

Table (8) shows no statistically significant differences in physical activity and mental health levels among Northern Borders University students based on college, as all significance levels for all d exceed (0.05) at a significance level of ($\alpha \leq 0.05$).

To answer the fourth research question, which states: Is there a statistically significant relationship at the significance level ($\alpha \leq 0.05$) between the level of physical activity and the

level of mental health among the students at Northern Borders University, the Pearson Correlation coefficient was used. Table (9) presents the results of this analysis

TABLE 8
ONE-WAY ANOVA TO IDENTIFY DIFFERENCES IN PHYSICAL ACTIVITY AND MENTAL HEALTH LEVELS BASED ON COLLEGE

Dimension/Section		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
Basic Physical Activity	Between Groups	.006	2	.003	.010	.990
	Within Groups	102.207	372	.275		
	Total	102.213	374			
Practiced Physical Activity	Between Groups	.148	2	.074	.177	.837
	Within Groups	155.143	372	.417		
	Total	155.292	374			
Awareness of Health and Physical Activity	Between Groups	1.013	2	.506	2.067	.128
	Within Groups	91.143	372	.245		
	T otal	92.156	374			
Physical Activity	Between Groups	.156	2	.078	.562	.571
	Within Groups	51.529	372	.139		
	Total	51.685	374			
Stress and Anxiety	Between Groups	.633	2	.316	1.540	.216
	Within Groups	76.423	372	.205		
	Total	77.056	374			
General Mental Health	Between Groups	.325	2	.163	.698	.498
	Within Groups	86.663	372	.233		
	Total	86.988	374			
Happiness and Optimism	Between Groups	.219	2	.110	.520	.595
	Within Groups	78.402	372	.211		
	Total	78.621	374			
Mental Health	Between Groups	.071	2	.035	.453	.636

	Within Groups	29.061	372	.078		
	Total	29.132	374			

It is clear from Table (9) that:

- The Pearson correlation coefficient (r) between the level of physical activity level and mental health level was found to be 0.869, indicating a strong positive correlation, statistically significant at $p < 0.01$.
- The relationship between the level of physical activity and mental health among students at Northern Borders University can be classified as strong, based on the criteria established by Abdulrahman and Khalid (2021), as listed below:
  - Less than 0.30: Weak relationship
  - From 0.30 to less than 0.70: Moderate relationship
  - From 0.70 to less than 1.00: Strong relationship
- The direction of the relationship between the level of physical activity and the level of mental health among the students at Northern Borders University can be classified as positive, meaning that as the level of physical activity increases, there is a corresponding increase in mental health, and vice versa.

TABLE 9
PEARSON CORRELATION COEFFICIENT BETWEEN PHYSICAL ACTIVITY AND MENTAL HEALTH LEVELS.

		Physical Activity
Mental Health	Pearson Correlation	.869**
	Sig	.000
**. Correlation is significant at the 0.01 level		

VI. DISCUSSION

A. *First Research Question*

1) Basic Physical Activity Level: Students at Northern Borders University have a moderate level of basic physical activity, primarily engaging in simple activities like walking or taking stairs. While these actions are easy to incorporate into daily life, they lack the intensity needed for significant health benefits. The researcher believes that this could be due to students participating in these activities spontaneously, rather than incorporating them as a central element of their health or fitness routines.

2) Practiced Physical Activity level: The level of practiced physical activity is low, primarily due to demanding academic schedules, which leave little time for exercise. The lack of adequate sports facilities and programs further decreases participation. Additionally, many students do not prioritize exercise, often distracted by social media, which further reduces their physical activity engagement.

3) Health and Physical Activity Awareness level: Awareness of health and physical activity among students is also low. This is largely due to the absence of health awareness programs, leading to a lack of understanding about the benefits of physical activity. Misconceptions about exercise being primarily for weight loss or appearance may contribute to this limited awareness. Students generally lack knowledge about proper exercise techniques and monitoring performance. Additionally, the lack of educational

resources explaining concepts such as good sleep, proper nutrition, and the impact of physical activity on academic performance may be contributing factors. As a result, students may view exercise merely as a means for weight loss or appearance improvement, rather than as an essential component of maintaining their overall health.

4) *Overall Physical Activity Level:* The overall physical activity level is low, influenced by multiple factors, including a lack of motivation and appropriate sports facilities. Physical activity is not prioritized as highly as academic commitments. Even though students give significant attention to academic commitments, physical activity does not receive the same level of priority, the researcher suggests that universities should integrate physical activity into daily student life through suitable facilities and comprehensive wellness education.

B. *Second Research Question*

1) *Stress and Anxiety level:* Students at Northern Borders University exhibit low levels of mental health related to stress and anxiety, largely due to academic pressures, family isolation, and insufficient social and psychological support. This environment fosters persistent anxiety and hinders effective coping strategies, compounded by a lack of training in stress management techniques. The absence of educational programs on stress management exacerbates these challenges, leaving students ill-equipped to cope with stress and anxiety.

2) *General Psychological Health level:* The general psychological health of students is also low, attributed to poor social relationships and an imbalance between academic demands and personal life. This leads to stressors like missed classes, late assignments, sleep disturbances, and poor dietary habits resulting in feelings of hopelessness and frustration, further exacerbated by low self-esteem.

3) *Happiness and Optimism level:* While students maintain moderate levels of happiness and optimism, they struggle to maintain sustained optimism and happiness. Academic challenges and social pressures may hinder their ability to feel consistently positive, leading to uncertainties about their future, especially in adapting to university life and planning careers. The researcher notes that students can exhibit moderate positivity but face difficulties when confronted with major challenges. Ongoing pressures often prevent them from enjoying simple moments. To address this, the researcher recommends that university leaders implement intervention programs aimed at fostering positive thinking and enhancing daily experiences, which could improve overall happiness and optimism.

4) *Overall Mental Health level:* The overall mental health among students is low, reflecting the cumulative impact of stress, anxiety, and other factors. Insufficient academic and psychological support, along with a lack of effective guidance programs, contribute to this decline. Although students may demonstrate some degree of optimism in specific contexts, the pervasive stressors associated with university life appear to diminish their capacity to maintain stable mental health. The researcher calls for the implementation of psychological support programs, including counselling and stress management initiatives, to improve students' mental well-being and resilience.

C. *Third Research Question*

The study found no significant differences in physical activity or mental health among Northern Borders University students based on academic year, gender, or college, indicating these factors do not influence behaviour in these areas. The researcher suggests several reasons:

1) *Academic Year:* Students encounter comparable pressures and challenges within the university environment, irrespective of their year of study. Current academic programs and policies may not adequately support these needs, indicating a lack of effective strategies

tailored to students' diverse experiences. . Furthermore, this situation may indicate a lack of effective and cohesive strategies at the institutional level that address the promotion of physical activity and mental health in a manner that aligns with the diverse needs of students at various stages of their academic journey.

2) Gender: Both male and female students appear to have low levels of physical activity and mental health. This may be due to social factors within the university environment, where opportunities for engaging in physical activities and accessing psychological services are limited or not sufficiently motivating for both genders, leading to similar outcomes between them.

3) College Type: all colleges within the university face similar challenges related to low physical activity and mental health outcomes. The programs and facilities provided by each college may not adequately promote improvements in these areas, or there may be insufficient emphasis on motivating students to engage in physical activities and enhance their psychological well-being. This highlights the need for the development of comprehensive and effective initiatives aimed at promoting physical activity and mental health for all students, regardless of their academic discipline.

In conclusion, these findings highlight the need for enhanced university policies and comprehensive interventions that support physical activity and mental health for all students, regardless of year, gender, or major.

D. Fourth Research Question

The result of the fourth research question indicates a positive correlation between the level of physical activity and the level of mental health among students at Northern Borders University, which reflects a mutual relationship between these two variables. As the level of physical activity decreases, mental health also decreases, and vice versa. The researcher believes this result can be explained as follows:

First, scientific literature indicates that engaging in physical activity plays a vital role in enhancing mental health through its positive effects on stress, anxiety, and depression levels. Physical activity also helps release chemicals in the brain, such as endorphins and dopamine, which contribute to improved mood and psychological well-being. Therefore, it is likely that the low physical activity levels in the study sample are one of the contributing factors to the decline in mental health levels. Conversely, when students do not engage in physical activities regularly, it may negatively impact their emotional and psychological well-being.

Second, the positive relationship between physical activity and mental health can be interpreted in the context of university environment factors. Students at this university may lack sufficient opportunities to engage in physical activity, such as the limited availability of organized sports activities or facilities, leading to a decline in mental health due to reduced social interaction and isolation.

In conclusion, the researcher believes that this result supports the importance of integrating physical activity into students' daily lives as part of strategies to enhance their mental health.

VII. RECOMMENDATIONS

1) Implement awareness programs like workshops and sports events to promote physical activity and its mental health benefits.
2) Provide accessible sports facilities with modern equipment for various activities.
3) Incorporate physical activity into the curriculum through sports classes and joint events to encourage participation.
4) Enhance psychological support services, including counselling, to meet students' mental health needs.

5) Offer training in stress coping techniques like relaxation and meditation to improve overall well-being.
6) Promote group activities to boost physical health and social connections.
7) Develop personalized strategies for students with low physical activity or mental health issues, including tailored counselling and fitness programs.
8) Ensure equal opportunities for all students in physical activities, addressing both genders' needs for improved health.

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