Pak. j. life soc. Sci. (2024), 22(2): 22852-22864 E-ISSN: 2221-7630;P-ISSN: 1727-4915

Pakistan Journal of Life and Social Sciences
www.pjlss.edu.pk

https://doi.org/10.57239/PJLSS-2024-22.2.001625

RESEARCH ARTICLE

Educational Big Data Mining: An Analysis of Life Management's Impact on Academic Performance

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ARTICLE INFO

Received: Sep 13, 2024

Accepted: Nov 5, 2024

Keywords

Academic Performance

Bivariate Analysis

Cumulative Grade Point Average

Life Management

Mediating Role

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ABSTRACT

University students face challenges with time management skills and stress that affects academic performance. Furthermore, the lack of awareness and access to resources for healthy sleep patterns is also a major challenge for university students to achieve academic success and overall well-being. The purpose of this study is to perform educational big data mining that analyzes the relationship between sleep management, time management, food management,, mental / mental management and academic performance and to explore the role of friends in mediation through the large ICPSR dataset (originally >90,000 sample size, 42 datasets). The study selected, merged, cleansed, and transformed the most relevant ICPSR datasets 8, 16, and 17. Pearson's correlation and mediation analysis are used to explore the relationship between student life management and academic performance by using SPSS and the PROCESS macro. Mediation analysis revealed that hangout with friends played a significant role as a mediator in the relationship between life management and academic performance. Life management also positively impacts CGPA and significantly reduces the failure rate. The results also state that sleep and time management correlate positively with academic performance, while mental and food management correlate negatively with academic performance. Mental and physical health are important contributors to overall well-being, including academic performance. Therefore, it is important to ensure that both are managed effectively. This study provides insight into the steps involved in large educational data mining, which help the researcher make a decision for future potential data mining research using large datasets.

INTRODUCTION

Numerous young adults see the change to university life as an important turning point in life, a time when they can do whatever they want. However, in reality, in addition to their newfound freedom, university students deal with a variety of academic academic and particular issues that can negatively impact their academic success. The pressure to manage a demanding workload, navigate their newfound freedom, and balance social obligations can be overwhelming for them. For university students to succeed academically, they need to develop effective life management skills. It is

important for students to improve not only their academic achievements, but also their physical and mental health. The academic challenges university students face could be caused by a variety of factors. Poor life management skills are one of these variables that can cause lack of motivation, putting off work, and poor time management. This could contribute to missed deadlines, below-average scores, and an overall sense of being overwhelmed. Academic success depends on having effective life management skills, so it is important that university students acquire these skills as soon as possible. This study shows how effective life management can affect academic achievement by studying the relationship between academic performance and life management among university students. To help university scholars who want to better improve their educational achievements and general well-being. This study will specifically look at how having various life management abilities affects their academic performance. Finally, this study will offer some advice so that university students can improve their life management skills and succeed academically.

One of the main problems facing university students is poor time management. University students often have multiple academic deadlines and social obligations, leaving them with limited time to complete their academic work. Poor time management skills can lead to missed deadlines, reduced academic performance, and increased stress situations. According to the American College Health Association, more than 80% of university students report feeling overwhelmed by their academic workload, pressing the need for effective time management skills to manage academic demands [1]. Moreover, a student's mindset can also affect their academic performance. Not only is it crucial to have a positive mindset about your academic journey, it is also necessary to have a growth mindset and focus on your own strength and potential for growth. Additionally, it is important to have resilience when encountering a problem; having high resilience can help in managing your academic journey, no matter if the problem is high like financial issues or low like difficulty scheduling a session with your professor. According to Universitas Airlangga and Negeri Malang, university students who have high resilience have been shown to be more academically successful than others [2]. Furthermore, another problem facing university students is poor time management, which can cause more stress. The university experience can be stressful when time management is poor; due to the pressure to achieve academic success, meet social prospects, and navigate particular connections, there are many things the student needs to do at once to achieve it. Poor time management skills can lead to stress that can then lead to a drop in academic performance, increased anxiety, and negative impacts on internal health. According to a study by the Canadian Association of College and University Student Services, more than 60% of university students reported feeling overwhelmed by stress, pressing the need for effective stress management skills to handle university life demands [1]. Lastly, effective sleep management skills are critical for a university student to achieve academic success and overall well-being. Poor sleep quality and duration, lack of awareness of the importance of sleep management, and lack of access to funds to support healthy sleep patterns are challenges facing university students to achieve healthy sleep patterns. These challenges can lead to lower academic performance, increased stress situations, and negative impacts on physical and mental health. By addressing these challenges and adding mindfulness to the importance of sleep management, university students can improve their academic performance and overall well-being.

LITERATURE REVIEW

Sleep management affects academic performance among students. Studies have been conducted and have proven that poor sleep can affect academic performance. Students who have adequate sleep can outperform those who do not [3]. Sleep is one of the most overlooked activities that people usually ignore, even though it is a biological necessity. One of the aspects of sleep is the duration of sleep. The duration of sleep depends on the age of the person. The National Sleep Foundation advises that elderly people sleep fewer than 7-8 hours a night, while younger adults and adults between the ages of 18 and 25 and between the ages of 26 and 64 should sleep 7-9 hours [4]. Some studies carried out among university students showed that in general longer duration of sleep was related to better

academic performance [3]. Another sleep measure that can have an impact on student academic performance is sleep quality. Although this aspect is the most subjective, it is also the most researched aspect. The Pittsburgh Sleep Quality Index can be used to assess the quality of your sleep [5].

The study examined hanging out with friends as a mediator between sleep quality and academic performance. It shows which students who hang out with friends have worse sleep quality and academic performance [6]. Sleep quality is also difficult to improve as a student as it requires a detailed understanding of the student's sleep latency, sleep disturbance, sleep hygiene, behavior, and more. Another aspect of sleep that can affect student academic performance is sleep regularity. The frequency with which the student sleeps and wakes up throughout the week is measured; an example of measuring a person's sleep regularity is by using the Sleep Regularity Index [7]. They based their observations on students who wake up and fall asleep at the same time each day. Consistent sleep patterns are found to have an impact on better academic performance. In conclusion, on how sleep affects academic performance of a student, there are many ways to measure it. In particular, the articles investigate more about sleep duration and sleep quality. Furthermore, there are some limitations, especially when measuring sleep duration and sleep quality, where sleep duration is more based on the need for the subject's self-report, which may not be 100% accurate, and sleep quality is very subjective to the subject, which may be biased.

Furthermore, some studies did not factor in or mention other potential variables such as stress, mental health, and individual sleep needs. However, some articles provide useful suggestions for possible changes that an academy can work on to help students improve sleep management.

Time management plays an important role that can really influence the academic performance of students. Students' anxiety will decrease indirectly when good time management is done. A poor time management skill can be defined by a person who is finding it difficult to plan their work and feels agitated toward the end of their course. When returning to reality today, it is not easy for students to plan and balance their daily life with their studies [8]. Today, students will only focus on what they want to do in their daily lives and ignore the importance of managing time in their daily life. Studies have been conducted and have proven that students with good time management and planning will have a direct and positive impact on their academic performance [8]. Students who can plan their time wisely can indirectly help avoid suffering from many problems. An experiment has shown that time management skills are important because they can help students avoid suffering from anxiety or stress [8]. Students should have a plan for their daily life that needs to find a balance between study and relaxation; therefore, only they can reduce the stress they face in their academics. One of the examples of related activities for which students can plan is hobbies. Hobbies, also known as extracurricular activities, can promote student academic performance in a positive way [9]. Participation in extracurricular activities can reduce student stress and indirectly increase work-life balance [10]. Hobbies are one of the activities that students can do in their spare time. They can do activities that they like to relax, such as doing some exercise as hobbies or extracurricular activities, to reduce their stress and anxiety. This is because a group of students has shown that exercise helps students improve their academic performance [11]. Students can do some exercise to reduce stress and maintain health. Hobbies also have a positive impact on the student CGPA results because there are results that show that students who participate in extracurricular activities can perform well and achieve a better education result [12].

Friends are the ones who have mutual affection between individuals, they will have the same topic of conversation and sometimes have the same interests or hobbies as each other [13]. They serve as a mediator between hobbies and academic performance. Students can meet and make new friends from different backgrounds if they can join different exercise teams at their school [14]. If they meet some friends who have the same interests as them, they can become friends and hang out easily

because most students will like to hang out with friends who have the same hobbies or interests as them. Friends become one of the factors that can indirectly affect students' academic performance. Hanging out with friends who have the same hobbies is very important because the activities they do can easily affect the student's academic performance. Academic performance and friendship strengthen each other together and students can become helpers in study [15]. Friends can help each other solve their problems when they hang out [16]. Academic problems can also be solved when students help each other. The research found that the different friends with whom the students choose to hang out will have different effects on the academic performance of the students. Your cumulative grade point average (CGPA) will have a different effect if you have different friends, a low-performance peer will negatively affect them, and if you have a high-performance peer, you will be positively affected [17].

Food management is an important factor that has a significant impact on academic performance. The grade point average (GPA) and general university performance should receive more attention, but it is also crucial to look at how lifestyle choices, particularly eating habits, affect academic success [18]. Therefore, people need to apply it in their daily lives. Bad nutrition can affect the rapid development of the brain and cognitive function, and poor nutrition can also aggravate student academic performance. Recent evidence of children's eating habits is concerning because adequate nutrition is crucial for brain growth, cognition, and academic success [19]. The diet of people usually includes high saturated fats and sugars, high fast food consumption, and low vegetable consumption. In addition to that, another factor in food management is eating habits; eating habits are also important, as the statistics mentioned above, about 32% of students consume two servings of fruit and vegetables a day, 26% of students report eating more than one fast food a day, and 31% consume candy and sweets several times a day. At least two dairy products were consumed daily, according to 76%, while 88% of the respondents indicated that they used olive oil at home. According to the above facts, traditional healthy meals have replaced harmful eating patterns [20]. Therefore, right now people are not really concerned about their own eating habits. Eating habits are one of the most overlooked activities that people usually ignore. Through statistics, it can be defined that people always eating fast food.

Fast food is often consumed for several reasons, including not having enough time to prepare healthy meals, the pleasant flavor of fast food, and the effect of socializing with peers in drive-in restaurants. Males who often check the calories in fast food, comprehend or are more aware of the number of calories in junk food, or who overestimate the amount of sugar in sugary drinks are more likely to be obese. Furthermore, students who engage in moderate physical activity for an average of 1 to 2 days during a period of one week also increase the risk of fatness [21]. There are many reasons why people eat fast foods, for example, often marketed as a tasty and satisfying option. Therefore, it is important for people to play sports to avoid being obese and to have a good lifestyle. In addition to that, Friends contribute significantly to the educational process by encouraging resources and fostering academic success. Therefore, the method of providing free school meals to all is to improve the quality of their food and address food insecurity problems. Previous studies have shown that nutritious meals result in a decrease in the intake of unhealthy foods outside of school, likely due to the more pleasant and satisfying experience of eating high-fiber, nutrient-rich school meals. [22]. Mental mindset is a series of self-perceptions or beliefs that people hold about themselves. It will influence academic performance through students' mindsets or mental behavior. Therefore, students will have a variety of factors and issues that will occur in their daily life that will influence their academic performance. Most factors are external factors that easily affect academic performance, such as family or friends. In addition, internal factors will also affect their academic performance, such as watching videos. Today, teaching and learning is provided in many ways, such as by watching videos. This is because technology provides a rich source of information and it is easy to absorb and learn the knowledge by watching countless times. It also presents the knowledge in text and sounds, so people can easily

focus on the video. As a result, people will think that the video is better and easier to understand than the text and it will be a priority to watch the video [23]. In addition, DBGL is an instructional strategy and is reflected in computer-based applications. The instructional video is famous among learning videos. This phenomenon will occur because instructional videos help the learner to easily learn, remember, and comprehend the knowledge of the videos. It can also help learners to easily remember the knowledge by reducing cognitive burden and handling the information. In short, the academic performance will increase because they acquire the learning style by using instructional videos [24]. The flipped classroom is a different teaching style from the old teaching style. It is a mixed teaching style. This is because it will increase the participation in the class and the interest in the subject of mathematics. For example, students watch online videos opened by teachers and experience the history. Students can discuss the question and the knowledge in the classroom or at home. In this situation, the interest of students in mathematics subjects and the study of mathematics subjects will easily developed [25].

Income from a family will affect student academic performance. Based on research from 700, twenty-eight first-year low-income students, families are attending eight four-year institutions. Low-income families will encourage students to achieve good results in improving their lifestyle and economic family. In addition, the low-income family also has a good spirit and action to support their children in their studies. Therefore, the student has been motivated by the family to get good academic results and will increase their academic performance [26]. Family Socioeconomic Status (SES) is the position of the family on the socioeconomic scale; it depends on the social and economic elements. For example, income. Based on research, it is the socioeconomic status of the family. Higher-income families must affect their children's academic performance. Higher-income families can also hire a good teacher to teach their children and improve their skills at each level. Furthermore, the family has a good financial situation to support their children studying abroad and having a better education. In addition, the children have a lot of additional knowledge gained from their experience. In short, their children are interested in improving their academic performance because they have the support of the family [27].

The conceptual framework is created on this review of the literature. Time Management, Sleep Management, Food Management and Mentality/Mindset Management serve as independent values which will directly affect the dependent value, which is Academic Performance. Hanging out with friends will serve as a mediator between the independent variable and the dependent variable. The mediator is a variable that will be affected by an independent variable and the mediator itself will affect a dependent variable. The mediators will act as a intermediary that indirectly affects the relationship between the independent variable and the dependent variable (Figure 1).

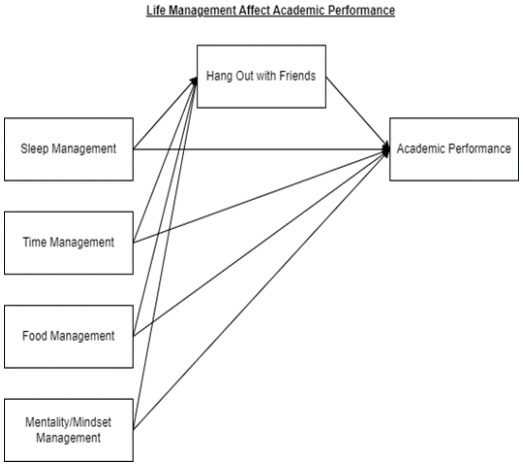

FIGURE 1: CONCEPTUAL FRAMEWORK

According to the conceptual framework, the following hypotheses are constructed.

H1: Sleep Management correlates positively with Academic Performance.

H2: Hang Out with friends mediates the relationship between sleep management and academic performance.

H3: Time management correlates positively with academic performance.

H4: Hang Out With Friends mediates the relationship between Time Management and Academic Performance.

H5: Food Management correlates negatively with Academic Performance.

H6: Hang Out with friends mediates the relationship between food management and academic performance.

H7: Mentality/Mindset Management correlates negatively with Academic Performance.

H8: Hang Out with friends mediates the relationship between mental health/mindset management and academic performance.

RESEARCH METHODOLOGY

A. Dataset Description

This study has merged three of the ICPSR datasets (DS8 – Demographic, DS16 - Education, and DS17 – Graduation) using SPSS, the data have also been cleansed and transformed. 106 variables were confirmed after the cleansing process. The main dependent variable is the respondent ID (AID), which has connections to the 106 remaining variables in the data set. In the category of education, there are a total of 51 variables, then 3 variables in the graduation category, and the remaining 52 are from the demographic category. Figure 2 shows the cleaning processes for the merged datasets 8, 16, and 17. Cases not including ELYEAR1 and unrelated variables are removed. Missing data will be omitted when the variable is greater than 30%. After data cleaning, there are 107 cases in total. Various factors will be used to fill in the missing values for various variables. In the case of the GPA variable, the missing value will be replaced with the mean value, and in the case of the ever-adopted variable, the missing value will be replaced with '0', which denotes not adopted.

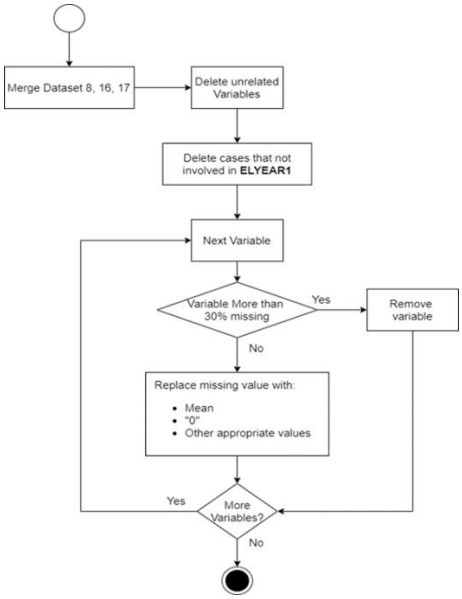

FIGURE 2: RESEARCH METHODOLOGY

In the next step, this study has selected the most relevant that align with the research focus on managing life that affects academic performance. For example, general health, personal finances and income, and daily activities. This study has sorted through Section 9 (General Health and Diet), Section 15 (Economics and Personal Future), and Section 33 (Daily Activities) to select variables specifically from this part of the data set. Table I shows the relevant variables involved in the next data analysis step.

TABLE I: PRESENT STUDY DATASET DETAIL VARIABLES

Dataset	Variable	Questionnaire items
DS8 Demo-graphics	Sleep Management	H3GH13T - AM/PM You Wake Up/Can Sleep In On days you do not have to get up at a certain time, what time do you usually get up? [Indicate AM or PM.]
		H3DA4 - HRS/WK Watch Videos On average, how many hours a week do you spend watching videos?
	Time Management	H3DA2 - Hobbies In the past seven days, how many times did you engage in a hobby such as working on a collection, playing cards or board games, arts and crafts, drama, playing a musical instrument or singing with a group, or shopping just for fun? Not At All; 1 Time; 2 Times; 3 Times; 4 Times; 5 Times; 6 Times; 7 or More Times
		H3GH5 - Exercise Center Past 7 days In the past seven days, how many times did you go to an exercise or fitness center to exercise or work out?
	Mentality/Mindset Management	H3EC1H - Income: Transfer Family/Friends During any part of {2000/ 2001} did you receive income from the following sources?: family and friends (including only transfers of income to you yourself from family and friends. Do not include a spouse's salary or a scholarship, for example.) Not Marked; Marked;
		H3DA3 - Watch Videos In the past seven days, how many times did you watch a movie, play video or computer games, or use a computer for surfing the Web, exchanging email, or participating in a chat room? Not At All; Not At All; 1 Time; 2 Times; 3 Times; 4 Times; 5 Times; 6 Times; 7 or More Times;
	Food Management	H3GH18 - Days Ate Fast Food Last 7 Days On how many of the past seven days did you eat food from a fastfood place, McDonalds, Kentucky Fried Chicken, Pizza Hut, Taco Bell, or a local fastfood restaurant? No days; One days; Two days; Three days; Four days; Five days; Six days; Seven days;
		H3DA11 - Play Individual Sports In the past seven days, how many times did you participate in individual sports such as running, wrestling, swimming, cross-country skiing, cycle racing, or martial arts? Not At All; 1 Time; 2 Times; 3 Times; 4 Times; 5 Times; 6 Times; 7 or More Times
	Hang Out With Friends	H3DA15 - Hang Out With Friends In the past seven days, how many times did you just hang out with friends, or talk on the telephone for more than five minutes? Not At All; 1 Time; 2 Times; 3 Times; 4 Times; 5 Times; 6 Times; 7 or More Times
DS16 Education	Academic Performance	EAOGPAC - Cumulative GPA Across All Years Overall GPA for all courses taken in each year (EAOGPA1-6) and cumulatively (EAOGPAC).

		EAOFIXC - Overall Failure Index Across All Years Proportion of all courses that students failed in each year (EAOFIX1-6) and cumulatively (EAOFIXC).
		EASGPAC - Cumulative Science GPA Across All Years GPA of science courses taken in each year (EASGPA1-6) and cumulatively (EASGPAC).
		EAMGPA1 - Math GPA Year 1 GPA of math courses taken in each year (EAMGPA1-6) and cumulatively (EAMGPAC).

For statistical analysis, this study used several tools, which are IBM SPSS 24.0, macro-PROCESS 4.0, and Microsoft Excel. To investigate the indirect effects in mediation models, a mediation analysis was performed using macro-PROCESS and bootstrapped with 5000 bootstrapped resamples. If the confidence intervals did not contain zero, this study considered mediation significant.

RESULT

Based on Table II, it shows the survey results, which were obtained from 3015 individuals, both male and female. Of the total of the respondents, 1379 were male, which makes up 45.7% of the group, while 1636 were female, making up 54.3% of the group. Next, the 10% difference between 20% of the total number of respondents is 19, 20, 21, 22, 23, 24 years old, which is 360 respondents (11.9%), 455 respondents (15.1%), 497 respondents (16.5%), 553 respondents (18.3%), 505 respondents (16.7%), and 466 respondents (15.5%). Furthermore, the percentage below 10% of the total number of respondents are 18, 25, 26, 27 years old, which is 23 respondents (0.8%), 136 respondents (4.5%), 16 respondents (0.5%), and 4 respondents (0.1%).

TABLE II: DEMOGRAPHIC OF THE RESPONDENTS

		Frequency	Percentage (%)
Gender	Male	1379	45.7
	Female	1636	54.3
Age	18	23	0.8
	19	360	11.9
	20	455	15.1
	21	497	16.5
	22	553	18.3
	23	505	16.7
	24	466	15.5
	25	136	4.5
	26	16	0.5
	27	4	0.1
	Total	3015	100.0

According to Table III, the relationship between sleep management and Academic Performance with direct effect is 0.102**. There is a significant relationship between sleep management and academic performance; therefore, hypothesis H1 is accepted. Meanwhile, according to Table 3, the relationship between Sleep Management and Academic Performance with which the direct effect is 0.070**. There is a significant relationship between time management and academic performance; therefore, hypothesis H3 is accepted. Next, according to Table 3, the relationship between food management and academic performance, with direct effect, is -0.091**. There is a significant relationship between food management and academic performance; therefore, hypothesis H5 is accepted. Lastly, according to Table 3, the relationship between mentality / mental set management and academic performance,

with a direct effect, is -0.097**. There is a significant relationship between mental health / mindset management and academic performance; therefore, hypothesis H7 is accepted.

TABLE III: PEARSON'S CORRELATION

IV	DV	Correlation
SM	AP	0.102**
TM	AP	0.070**
FM	AP	-0.091**
MM	AP	-0.097**

Note: SM-Sleep Management; TM-Time Management; FM-Food Management; MM-Mental/Mindset Management; AP-Academic Performance; **p<0.01

Based on Table 4, the result shows that Hang Out with Friends mediates the relationship between sleep management and academic performance with the indirect effect of -0.0010 and 95% CI = (-0.0021,-0.0003). Therefore, Hypothesis H2 is accepted. Continue with other hypotheses. Based on Table 4, the result shows that Hang Out With Friends mediates the relationship between Time Management and Academic Performance with the indirect effect of -0.0055 and 95% CI = (0.0009,0.0103). Therefore, hypothesis H4 is accepted. Next, based on Table 4, the result shows that Hang Out With Friends mediates the relationship between food management and academic performance with the indirect effect of 0.0040 and 95% CI = (0.0013,0.0077). Therefore, hypothesis H6 is accepted. Lastly, according to Table 4, the result shows that Hang Out With Friends mediates the relationship between Time Management and Academic Performance with the indirect effect of -0.0072 and 95% CI = (-0.0143,-0.0003). Therefore, hypothesis H8 is accepted.

TABLE IV: UNSTANDARDIZED DIRECT AND INDIRECT EFFECTS WITH BOOTSTRAPPED 95% CONFIDENCE INTERVALS FOR MEDIATION ANALYSIS.

IV	M	DV	Direct Effect	Indirect Effect
SM	HF	AP	0.0326	-0.0010 (-0.0021,-0.0003)
TM	HF	AP	0.0493	0.0055 (0.0009,0.0103)
FM	HF	AP	-0.0940	0.0040 (0.0013,0.0077)
MM	HF	AP	-0.0917	-0.0072 (-0.0143,-0.0003)

Note: SM-Sleep Management; TM-Time Management; FM-Food Management; MM-Mental/Mindset Management; AP-Academic Performance; HF-Hang out with frineds; M-Mediator; IV-Independent Variable; DV-Dependent Variable

DISCUSSION

This study found a significant positive association between the academic achievement and their life management, which is consistent with the findings of specialised studies that have found comparable correlations using a variety of objective metrics, including standardized test scores. Therefore, the results of this study support the first hypothesis (H1) by indicating a positive correlation between sleep management and academic performance. Adequate sleep improves memory consolidation [28] and learning ability, which is crucial for academic performance. Good sleep habits also promote overall health and well-being, leading to reduced stress levels [29], both of which positively impact academic performance. The results of this study support the second hypothesis (H2) by indicating that hanging out with friends positively mediates between the sleep management relationship and academic performance. This can indicate that social support can play a significant role in promoting academic success [30]. The results of this study support the third hypothesis (H3) by indicating a positive correlation between time management and academic performance. This involves the student's ability to set goals, prioritize tasks, and manage their time to be able to balance their academic workload and plan for their hobbies, such as participating in extracurricular activities.

Good time management skills will have a positive impact on academic performance [8]. Hence, the results of this study support the third hypothesis (H3) by indicating a positive correlation between time management and academic performance. Hobbies can improve student academic performance in a positive way [9] and, at the same time, reduce student stress and indirectly increase student-work balance [10]. The results of this study support the fourth hypothesis (H4) by indicating that hanging out with friends positively mediated between relationship Time Management and Academic Performance. Friendship always plays an important role in academic performance because it can encourage students to become study-related helpers [15].

The results of this study did not support the fifth hypothesis (H5) by indicating a negative correlation between food management and academic performance. The direct effect of the result is 0.0493 and the indirect effect is 0.0055 (0.0009,0.0103). Poor food management, energy shortages, and that can affect motivation and commitment to academic activities. Low energy levels make it difficult to focus and concentrate, leading to poor academic results. The result of this study supports the fifth hypothesis (H5), indicating that Hang Out with Friends mediates positively between the relationship between Food Management and Academic Performance. Friends play an important role in the education process and support academic achievement and encouraging resources. Students who engage in moderate physical activity for an average of 1 to 2 days during a period of 1 week also increase the risk of fatness [21]. Furthermore, the seventh hypothesis (H7) does not support the result of this study. Therefore, this result indicates a negative correlation between mental management and academic performance, which is a direct effect of -0.0917 and an indirect effect of -0.0072. In this situation, mental management is not strong enough to improve academic performance because some people may struggle with mental health issues, and self-esteem has decreased and is marginalized by society. Lastly, the eighth hypothesis (H8), which indicates that Hang Out With Friends mediates negatively between the relationship between Mental Management and Academic Performance. Some individuals have influence from friends and a disinterested attitude to improve their academic performance, and waste their time doing others, which are affected by external factors, such as watching learning videos online but playing games simultaneously.

CONCLUSION

The research findings suggest that measuring life management can be challenging due to the participation of various factors, such as awareness of sleep, in sleep management. Research on sleep management and academic performance uses different approaches, with a primary focus on duration and quality of sleep. However, these approaches can produce inconsistent findings due to the self-reported nature of sleep quality [3]. Sleep management research took a systematic approach to isolate time management behaviours that impact academic performance. The results revealed that regardless of sex, age, entry requirements or number of semesters in the degree program, the perceptions of their ability to manage their time were positively correlated with their academic success [8]. Researchers were unable to pinpoint specific aspects of the redesign that increased learning and happiness due to the design of the study for mental management. The study did emphasize the need to consider various performance indicators, including withdrawal and pass rates [25]. Data on nutritional knowledge, behaviour, and physical activity were based on student self-reported reports, which may not be accurate in terms of food management. Furthermore, since women made up the bulk of the study sample, its applicability may be limited [21]. However, in general, participants were aware that their information would be kept private, which probably helped explain why their responses to questions about their behaviour and understanding were so accurate. With the limitation of the findings of this study in most of the previous research in mind, there are several future studies that could be considered on sleep, time, mental and food management that affect academic performance. Research on sleep management could examine how time management skills vary between different academic disciplines and how this is related to academic

performance. In addition, research could explore the impact of sleep disorders, such as insomnia or sleep apnea, on academic performance. Consequently, future research could examine the effectiveness of dietary interventions, such as nutritional counselling or changes in campus food policy, on academic performance. Lastly, future research could investigate the effectiveness of different mental health interventions, such as mindfulness-based stress reduction or cognitive behaviour therapy, on academic performance. Furthermore, research could explore the impact of mental health disorders, such as anxiety or depression, on academic performance [31].

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