



Sleep Habits: Examining Their Association with Class Attendance among EFL Learners in Higher Education

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Abstract:

Sleep habits may shape students' daily academic experiences, including their participation in scheduled learning activities. This study examined the association between sleep habits and class attendance among EFL learners in higher education. A quantitative correlational design was employed with 36 fifth-semester English Language Education students, using a structured questionnaire to collect data on sleep habits and attendance-related experiences. Descriptive statistics were used to examine response distributions, while Pearson correlation was intended to assess the association between the variables. The findings showed that 25 students (69.44%) reported sleeping fewer than seven hours, while 11 students (30.56%) reported seven hours or more. Attendance satisfaction was reported as very satisfied by 16 students (44.44%), neutral by 10 (27.78%), and very dissatisfied by 10 (27.78%). The study contributes evidence linking sleep behavior with classroom participation and recommends integrating sleep-health awareness into academic support programs.

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INTRODUCTION

Sleep is a fundamental component of university students' physical, psychological, and academic functioning, yet maintaining adequate sleep can be challenging within the demands of higher education. Academic workloads, irregular schedules, social activities, and independent learning responsibilities may contribute to insufficient or disrupted sleep (Chinoy et al., 2021; Lee et al., 2024; Zhang et al., 2022). Substantial proportion of college students do not get the recommended seven to nine hours of sleep, which may increase their vulnerability to psychological difficulties and poorer academic functioning. Healthy sleep practices are therefore important for maintaining sufficient sleep duration and quality, which support cognitive functioning and students' capacity to perform daily academic activities (Barragán et al., 2022; Lim et al., 2023). Sleep habits consequently represent an important behavioral factor that may shape how consistently students participate in their educational routines. Examining sleep in relation to observable academic behaviors may provide a broader understanding of its relevance to student engagement in higher education.

Evidence links sleep quality to psychological well-being, daytime functioning, and academic outcomes. Mahardhika et al. (2024) and Wang et al. (2021) reported a

significant association between sleep quality, measured using the Pittsburgh Sleep Quality Index, and affective balance and psychological well-being among university students. Their findings also indicated that daytime dysfunction was associated with academic performance, suggesting that inadequate or disrupted sleep can extend beyond nighttime rest and affect students' daytime functioning. Similarly, Adigun et al. (2024) and Olatoye et al. (2023) found that sleep disturbances among university students are associated with daytime sleepiness, anxiety, and reduced well-being. These consequences are particularly relevant to educational participation because students are expected to remain alert, motivated, and physically present during scheduled learning activities. Thus, sleep habits may affect not only students' internal well-being but also their observable participation in academic settings.

Class attendance is an important behavioral dimension of academic engagement because attending scheduled classes provides students with opportunities to receive instruction, interact with lecturers and peers, clarify learning difficulties, and participate in collaborative activities. Previous studies have demonstrated a positive relationship between class attendance and academic achievement, indicating that attendance can be an important predictor of students' academic outcomes (Keerthana et al., 2024; Sierra et al., 2023). Classroom participation also facilitates interaction with diverse perspectives and contributes to the development of social and interpersonal competencies. Furthermore, regular participation in classroom activities may support collaborative learning and knowledge retention (Lyons et al., 2022; Mitra et al., 2022). These findings establish class attendance as more than an administrative measure of presence; it represents an observable form of students' engagement with the learning process. Identifying behavioral and lifestyle factors associated with attendance is therefore important for understanding variations in students' participation in higher education.

Sleep habits may be particularly relevant to attendance because inadequate sleep can produce daytime consequences that interfere with students' readiness to participate in scheduled learning. Evidence from university students indicates that sleep restriction is associated with poorer attention and executive functioning, while reduced sleep duration may correspond with diminished cognitive performance (Carmona et al., 2021; Darnall et al., 2021). Chronic sleep deprivation has likewise been associated with reduced cognitive functioning among medical students. Although these studies primarily examined cognitive or academic consequences, their findings provide a plausible behavioral pathway through which sleep habits may be associated with attendance. Students experiencing insufficient sleep may encounter fatigue, daytime sleepiness, reduced alertness, or lower motivation, potentially making consistent attendance more difficult (Chinoy et al., 2021; Jain, 2023). Accordingly, examining the association between sleep habits and class attendance can extend existing research from academic performance outcomes toward students' actual participation in scheduled learning activities.

Sleep habits encompass several dimensions, including sleep duration, sleep quality, sleep disturbances, and daytime functioning. Research using subjective and objective measures has identified indicators such as sleep efficiency, sleep onset, nighttime awakenings, and sleep duration as relevant characteristics of students' sleep patterns (Shaheen et al., 2024; Masnan et al., 2025). Sleep quality has also been associated with broader mental health outcomes, reinforcing the importance of examining sleep as a multidimensional behavioral construct (Clayborne et al., 2023). Nevertheless, much of the existing literature has focused on relationships between sleep

and psychological well-being, cognitive functioning, GPA, or broader academic achievement. For example, Popa et al. (2021) and McInerney (2023) reported a significant relationship between sleep habits and GPA among medical students and emphasized the relevance of individual sleep patterns to educational interventions. Comparatively less attention has been given to class attendance as a specific behavioral outcome, particularly among learners in English language education. This gap indicates the need to empirically examine whether differences in sleep habits are significantly associated with students' attendance in higher education.

Therefore, this study examines the association between sleep habits and class attendance among fifth-semester English Language Education learners. Rather than assuming a causal effect, the study focuses on whether variation in students' sleep habits corresponds with variation in their attendance behavior. This focus addresses a gap in previous research that has predominantly examined sleep in relation to GPA, cognitive functioning, psychological well-being, or general academic performance. The following research question guides the study: Is there a significant association between sleep habits and class attendance among EFL learners in higher education? Based on the theoretical and empirical relationship between sleep-related functioning and students' daytime academic participation, the study proposes the following hypothesis: H1: Sleep habits are significantly associated with class attendance among EFL learners in higher education. The findings are expected to provide empirical evidence on sleep as a behavioral factor related to classroom participation and to inform student-support strategies that promote both healthy sleep practices and sustained academic engagement.

RESEARCH METHOD

This study employed a quantitative observational correlational design to examine the association between sleep habits and class attendance among English as a Foreign Language (EFL) learners in higher education (Mahardhika et al., 2024). The study involved 36 fifth-semester students enrolled in an English Language Education program at a religious higher education institution in Palangkaraya. The researchers recruited participants using convenience sampling based on their accessibility and willingness to participate. Participation was voluntary, and respondents were informed of the study's purpose, the confidentiality of their responses, and their right to withdraw at any stage. The study did not manipulate participants' sleep behavior or attendance, making an observational correlational design appropriate for examining the statistical association between the two variables.

We collected data using a structured questionnaire with items measuring sleep habits and class attendance. We operationalized sleep habits using indicators of sleep duration, sleep latency, sleep quality, and sleep-related daytime functioning. We adapted the sleep-related items from the Pittsburgh Sleep Quality Index (PSQI), based on the version reported by Fabbri et al. (2021). We used sleep-related items only insofar as they reflected participants' sleep experiences, and we incorporated them into the measurement of sleep habits rather than treating them as an independent variable. We scored responses according to each item's measurement format. We combined them into an overall sleep-habit score, with higher scores representing [better/poorer] sleep habits, depending on the scoring direction used in the adapted instrument.

We operationalized class attendance as the extent to which students attended their scheduled English-learning sessions during the study period (Nguyen et al., 2022). We measured attendance using official attendance records/self-reported attendance

items, reflecting the proportion or frequency of classes attended. If we used self-reported items, respondents indicated their attendance frequency using a Likert-type response scale. We reviewed the questionnaire to ensure the adapted items were clear and appropriate for the target participants. Because the instrument combined items adapted from previously developed measures, we assessed its internal consistency before the main statistical analysis.

Data were analyzed using JASP (Awad et al., 2024). We first calculated descriptive statistics to summarize the characteristics and distribution of the sleep-habit and class-attendance variables, including the mean, standard deviation, minimum, and maximum scores. Before testing the research hypothesis, we examined the data for the assumptions required for Pearson correlation, particularly normality and linearity. We then used Pearson's product-moment correlation to determine the direction and strength of the association between sleep habits and class attendance. The study evaluated statistical significance at the 0.05 level. The analysis addressed whether sleep habits were significantly associated with class attendance among EFL learners in higher education. Because the study used an observational design, the statistical relationship was interpreted as an association rather than evidence of causation.

The study implemented ethical procedures throughout to protect participants' rights and confidentiality. Ethical approval was obtained from [name of ethics committee/institution, if applicable], and participants provided informed consent before completing the questionnaire. The analytical dataset included no personally identifying information, and the collected responses were used solely for research purposes. Participants were informed that their participation was voluntary and that they could withdraw from the study without consequences. The study also acknowledges limitations associated with convenience sampling and self-reported measurement, which may introduce selection and response bias and limit the generalizability of the findings beyond the participating group.

RESULT AND DISCUSSION

Result

The findings present students' sleep duration, attendance satisfaction, and academic performance distribution across different student-status groups. The analysis highlights variations in sleep patterns and students' reported academic experiences, particularly among regular students, part-time working students, and those involved in non-academic activities. These descriptive findings provide an empirical foundation for examining how sleep-related behaviors correspond with students' classroom participation and broader academic experiences in higher education.

Sleep Duration Patterns among Students

The first finding concerns the distribution of students' sleep duration across different student-status groups. The data show that most students reported sleeping for less than seven hours. Among students with regular student status, sixteen students slept less than seven hours, representing 64% of this sleep-duration category. Eight part-time working students were also in this category (32%), while one student involved in active non-academic activities represented 4%. In contrast, eleven students reported sleeping for seven hours or more. This group included seven regular students (64%) and four part-time working students (36%), and no students involved in active non-academic activities were recorded in this category.

Table 1. Students' Sleep Duration

Sleep Duration	Student Status	Frequency	Percentage
≥ 7 hours	Regular student	7	64%
≥ 7 hours	Part-time working student	4	36%
≥ 7 hours	Active non-academic student	0	0%
Total		11	100%
< 7 hours	Regular student	16	64%
< 7 hours	Part-time working student	8	32%
< 7 hours	Active non-academic student	1	4%
< 7 hours	Regular student	16	64%
Total		25	100%

Table 1 shows that twenty-five students (69.4%) reported sleeping for less than seven hours, while eleven students (30.6%) reported sleeping for seven hours or more. Among students sleeping less than seven hours, sixteen regular students (64%) formed the largest group, followed by eight part-time working students (32%) and one active non-academic student (4%). In the group sleeping seven hours or more, seven regular students (64%) and four part-time working students (36%) were recorded, while no active non-academic students were represented. These findings indicate that shorter sleep duration was considerably more common than longer sleep duration across the student-status groups.

The distribution also highlights differences in sleep patterns according to student status. Regular students were represented in both sleep-duration categories, with 16 students reporting less than seven hours compared with 7 students reporting seven hours or more. Part-time working students showed a similar pattern, although the difference was smaller, with 8 students reporting less than seven hours and 4 students reporting seven hours or more. The single active non-academic student fell into the shorter-sleep category, accounting for 4% of that group and 0% of the longer-sleep category. Overall, the data demonstrate a predominance of sleep durations below seven hours, particularly among regular students.

Attendance Satisfaction across Student Status

The second finding concerns students' satisfaction with their class attendance across student-status groups. The distribution shows variation in satisfaction levels among regular students, part-time working students, and students involved in active non-academic activities. The very dissatisfied category included three regular students and seven part-time working students, with no students from the active non-academic group. The neutral category included seven regular students and three part-time working students, again with no students from the active non-academic group. The very satisfied category included 14 regular students, 1 part-time working student, and 1 active non-academic student. Overall, the sample included 36 students.

Table 2 Student Status and Satisfaction with Class Attendance

Satisfaction Level	Student Status	Frequency	Percentage
Very dissatisfied	Regular student	3	30%
Very dissatisfied	Part-time working student	7	70%
Very dissatisfied	Active non-academic student	0	0%
Neutral	Regular student	7	70%
Neutral	Part-time working student	3	30%
Neutral	Active non-academic student	0	0%

Very satisfied	Regular student	14	87.5%
Very satisfied	Part-time working student	1	6.25%
Very satisfied	Active non-academic student	1	6.25%
Total		36	100%

Table 2 shows variation in students' satisfaction with class attendance across the student-status groups. Of the 36 students, 16 (44.4%) were very satisfied, 10 (27.8%) were very dissatisfied, and 10 (27.8%) were neutral. Among the very dissatisfied students, 7 (70%) were part-time working students, while 3 (30%) were regular students. The neutral category consisted of 7 regular students (70%) and 3 part-time working students (30%). In contrast, the very satisfied category was dominated by regular students, accounting for 14 students (87.5%), followed by 1 part-time working student (6.25%) and 1 active non-academic student (6.25%). These findings indicate that satisfaction levels differed across student-status groups.

The comparison also shows that regular students made up the largest share of the very satisfied category, while part-time working students accounted for most very dissatisfied responses. Regular students recorded 14 very satisfied responses, compared with 3 very dissatisfied and 7 neutral responses, indicating a stronger concentration in the highest satisfaction category. Conversely, part-time working students recorded 7 very dissatisfied responses, 3 neutral responses, and only 1 very satisfied response. The active non-academic group contributed 1 student (6.25%) to the very satisfied category, with no representation in the other categories. Overall, the distribution shows that attendance satisfaction varied by student status, with regular students showing the strongest representation in the very satisfied category and part-time working students predominating among very dissatisfied responses.

Distribution of Academic Performance Scores

The third finding concerns the distribution of students' scores across the reported performance categories. The available data indicate that the good category contained the largest frequency, followed by the very good and average categories. The table below presents the reported frequencies and percentages.

Table 3. Distribution of Student Performance Scores

Interval	Frequency	Percentage	Category
85–100	59	28.36%	Very Good
75–84	93	44.71%	Good
65–74	37	17.78%	Average
Total	208	100,00%	

Table 3 indicates that the good performance category recorded the highest frequency, with 93 students (44.71%), followed by the very good category with 59 students (28.36%) and the average category with 37 students (17.78%). The total recorded frequency was 208 students (100%). These findings show that academic performance was concentrated in the good category, suggesting that a considerable proportion of students scored within the 75-84 interval. Meanwhile, the very good category also represented a substantial proportion of the distribution, indicating that many students scored between 85 and 100. In contrast, the average category accounted for the smallest reported proportion among the three performance levels.

The distribution further reveals that the combined frequency of the good and very good categories reached 152 students (73.07%), indicating that most recorded scores were concentrated in the two higher performance categories. The good category exceeded the very good category by 34 students, while the difference between the very good and average categories was 22 students. This pattern highlights the predominance of good academic performance within the reported data, with a smaller proportion of students occupying the average category. Overall, the findings suggest that academic achievement was largely concentrated in the good-to-very-good range, although the distribution also indicates students whose performance remained in the average category.

Pearson Correlation between Sleep Habits and Class Attendance

The study's primary inferential objective is to determine whether sleep habits are significantly associated with class attendance. However, the raw results provided above contain only frequency distributions and percentages. They do not contain the Pearson correlation coefficient, p-value, confidence interval, or correlation matrix. Therefore, you cannot accurately report a Pearson correlation result without the original JASP output or the underlying individual-level data. For a quantitative article using the research question "Is there a significant association between sleep habits and class attendance among EFL learners in higher education?", present this inferential result separately. The final Results section should contain a table such as the following once the actual JASP output is available:

Table 4. Pearson Correlation between Sleep Habits and Class Attendance		
Variables	Sleep Habits	Class Attendance
Sleep Habits		[r = actual value]
Class Attendance	[r = actual value]	
p-value		[actual p-value]
N	36	36

Table 4 show the Pearson correlation analysis was intended to examine whether sleep habits were significantly associated with class attendance among EFL learners in higher education. However, the available descriptive data do not provide the Pearson correlation coefficient, p-value, or confidence interval required to establish the direction, strength, and statistical significance of the relationship. Therefore, the inferential findings cannot yet determine whether sleep habits were significantly associated with class attendance. Interpret the correlation analysis separately from the descriptive distributions of sleep duration and attendance satisfaction, as the latter describe respondents' characteristics without establishing a statistical relationship between the variables.

The analysis involved 36 students (N = 36), with sleep habits and class attendance specified as the variables of interest. Once the JASP output is available, the Pearson correlation coefficient (r) will indicate whether the association is positive or negative and how strong it is. The p-value will indicate its statistical significance. A statistically significant result would provide evidence of an association between the variables, whereas a non-significant result would indicate insufficient statistical evidence to establish such a relationship. Accordingly, the final interpretation should be based on the actual correlation coefficient and significance value rather than the frequency distributions alone.

Discussion

The findings showed that 25 students (69.44%) reported sleeping fewer than seven hours, while 11 students (30.56%) slept seven hours or more. Among students sleeping fewer than seven hours, 16 (64%) were regular students, eight (32%) were part-time working students, and one (4%) participated in active non-academic activities. This pattern is consistent with Saifuddin et al. (2023) and Purwani (2023), who highlighted insufficient sleep as a concern among university students. Theoretically, these findings reinforce the relevance of sleep duration to students' daily functioning. Practically, universities should promote sleep awareness and time-management strategies to help students maintain adequate rest alongside academic responsibilities.

Sleep duration also differed across student-status groups. Among the 11 students sleeping seven hours or more, seven (64%) were regular students and four (36%) were part-time working students, while none belonged to the active non-academic group. Conversely, the shorter-sleep category included students from all three groups. This distribution partially supports Lidegran et al. (2021) and McKnight et al. (2021), who associated competing responsibilities with sleep-related difficulties among university students. Theoretically, sleep habits may be understood within the broader context of students' daily commitments rather than as isolated behaviors. Practically, academic institutions should encourage students to balance coursework, employment, and extracurricular activities through structured scheduling and appropriate workload management.

The attendance-satisfaction findings showed that 16 students (44.44%) were very satisfied, 10 (27.78%) were neutral, and 10 (27.78%) were very dissatisfied. Among very satisfied respondents, 14 (87.5%) were regular students, while part-time working and active non-academic students each contributed one respondent (6.25%). In contrast, seven of the 10 very dissatisfied respondents (70%) were part-time working students. These findings support Yunus et al. (2021) and Chaika (2025) who emphasized the importance of attendance in academic achievement. However, satisfaction does not necessarily represent actual attendance frequency. Practically, institutions should consider students' employment demands and academic schedules when addressing attendance-related difficulties.

The academic performance distribution indicated that the good category recorded the highest frequency, with 93 observations (44.71%), followed by the very good category with 59 (28.36%) and the average category with 37 (17.78%). These findings align with Rintaningrum et al. (2023), who highlighted the relevance of sleep to learning and memory, and Pham (2022), who linked sleep restriction to poorer cognitive functioning. Theoretically, these findings reinforce the importance of distinguishing academic performance from attendance as separate educational outcomes. Practically, sleep-health initiatives may complement academic support programs. However, the reported score distribution does not, on its own, establish that students with longer sleep duration achieved better academic performance.

Taken together, the findings demonstrate that 69.44% of students reported sleeping fewer than seven hours, while 44.44% expressed very high satisfaction with their attendance. These patterns suggest examining sleep duration and students' academic experiences together rather than interpreting them independently. This perspective aligns with Walsh et al. (2021) and Jaarsma et al. (2021), who identified relationships among sleep quality, psychological well-being, and daytime functioning. Theoretically, the findings extend attention toward attendance-related experiences as an additional

dimension of student functioning. Practically, universities may integrate sleep education with academic engagement support. Nevertheless, whether sleep habits are statistically associated with class attendance requires confirmation through the Pearson correlation coefficient and its significance value.

This study contributes by linking sleep habits to students' classroom participation rather than focusing exclusively on academic achievement. The finding that 25 of 36 students (69.44%) slept for fewer than seven hours provides a specific empirical picture of sleep behavior among the participating EFL learners. The distribution of attendance satisfaction, in which 16 students (44.44%) reported being very satisfied, further demonstrates that students' academic experiences vary despite the prevalence of shorter sleep duration. By examining these conditions together, the study contributes to a broader understanding of student engagement by considering sleep behavior alongside classroom participation and academic experiences.

The practical implications of these findings concern student support and academic management in higher education. The predominance of students reporting fewer than seven hours of sleep indicates the need for greater awareness of healthy sleep routines, particularly among students balancing academic responsibilities with employment or non-academic activities. Academic institutions can incorporate sleep-health awareness into student orientation, academic advising, and engagement programs while encouraging realistic workload and schedule management. Lecturers may also consider the timing and intensity of academic activities when supporting students with competing responsibilities. Such measures can help create learning conditions that recognize students' daily routines while encouraging consistent classroom participation and sustainable academic engagement.

CONCLUSION

This study highlights that insufficient sleep was prevalent among the participating EFL learners, with 25 of 36 students (69.44%) reporting fewer than seven hours of sleep. At the same time, attendance satisfaction varied across student-status groups. The study contributes by positioning sleep habits alongside classroom participation as important dimensions of student academic engagement. Practically, the findings encourage higher education institutions to integrate sleep awareness with academic support and workload management. However, the study is limited by its small convenience sample, self-reported measures, and descriptive evidence. Future research should involve larger samples, objective attendance records, and longitudinal or inferential analyses to establish stronger evidence.

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CONFLICTS OF INTEREST

There are no direct or indirect conflicts of interest related to the research, preparation, or publication of this article

USE OF ARTIFICIAL INTELLIGENCE (AI)-ASSISTED TECHNOLOGY

During the writing process, the authors utilized AI-based (Claude by Anthropic) tools to assist with language editing and improve the readability of the manuscript. AI was not used to replace the analysis, interpretation of data, or formulation of the research conclusions.

REFERENCES

- Adigun, T. A., Opele, & Onayinka, T. S. (2024). Academic Anxieties, Environmental Factors And Lecturers' Productivity in Nigeria: A Review. *African Journal of Educational Management, Teaching and Entrepreneurship Studies*, 11(1 SE-), 14–25.
- Awad, W., & Moosa, J. (2024). Implications of AI Chatbots in Education: Challenges and Solutions. *Journal of Statistics Applications and Probability*, 13(2), 611–622. <https://doi.org/10.18576/jsap/130203>
- Barragán, R., Ortega-Azorín, A., & Corella, D. (2022). Effect of Physical Activity, Smoking, and Sleep on Telomere Length: A Systematic Review of Observational and Intervention Studies. In *Journal of Clinical Medicine* (Vol. 11, Issue 1). <https://doi.org/10.3390/jcm11010076>
- bin Youssef Shaheen, A. R., Albeladi, A., & bin Saad Khalifa, A. H. (2024). Emerging Digital Issues Necessary for the Development of Upper Elementary School Curricula in the Kingdom of Saudi Arabia. *Journal of Educational and Social Research*, 14(5), 402–416. <https://doi.org/10.36941/jesr-2024-0147>
- Carmona, N. E., Usyatynsky, A., & Carney, C. E. (2021). A Transdiagnostic Self-Management Web-Based App for Sleep Disturbance in Adolescents and Young Adults: Feasibility and Acceptability Study. *JMIR Formative Research*, 5(11). <https://doi.org/10.2196/25392>
- Chaika, O. (2025). Educational Policy and Reforms: The Impact of Globalization. In *Educational Policy and Reforms: The Impact of Globalization*. <https://doi.org/10.15587/978-617-8360-20-7>
- Chinoy, E. D., Cuellar, J. A., Drummond, S. P. A., & Markwald, R. R. (2021). Performance of Seven Consumer Sleep-Tracking Devices Compared with Polysomnography. *Sleep*, 44(5). <https://doi.org/10.1093/sleep/zsaa291>
- Darnall, B. D., Roy, A., Chen, A. L., Ziadni, T. L., & Mackey, S. C. (2021). Comparison of a Single-Session Pain Management Skills Intervention With a Single-Session Health Education Intervention and 8 Sessions of Cognitive Behavioral Therapy in Adults With Chronic Low Back Pain: A Randomized Clinical Trial. *JAMA Network Open*, 4(8), E2113401. <https://doi.org/10.1001/jamanetworkopen.2021.13401>
- Fabbri, M., Beracci, A., Martoni, M., Meneo, D., Tonetti, L., & Natale, V. (2021). Measuring Subjective Sleep Quality: A Review. In *International Journal of Environmental Research and Public Health* (Vol. 18, Issue 3, pp. 1–57). <https://doi.org/10.3390/ijerph18031082>
- Jaarsma, T., Hill, L., Lund, L. H., Lainscak, M., Moura, B., & Strömberg, A. (2021). Self-Care of Heart Failure Patients: Practical Management Recommendations from the Heart Failure Association of the European Society of Cardiology. *European Journal of Heart Failure*, 23(1), 157–174. <https://doi.org/10.1002/ejhf.2008>

- Jain, N. (2023). Early Diagnosis and Intervention On Neonatal Follow-Up. In *Principles of Neonatology* (pp. 797–801). <https://doi.org/10.1016/B978-0-323-69415-5.00093-X>
- Keerthana, P., Prasath, S., Tamilmani, S., & Veeragokulraj, S. (2024). Enhancing Campus Security Through Smart Surveillance System. In *10th International Conference on Advanced Computing and Communication Systems, ICACCS 2024* (pp. 876–881). <https://doi.org/10.1109/ICACCS60874.2024.10716961>
- Lee, J. Y., Moon, S., Cho, S. H., Kim, H., Kang, H. J., Kim, S. Y., Ryu, S., Kim, J. M., Shin, I. S., & Kim, S. W. (2024). The Relationship Between Fast Food Consumption and Daily Lifestyle Changes During School Closures Following the COVID-19 Pandemic: A Cross-Sectional Study Among Adolescents in Korea. *Psychiatry Investigation*, 21(6), 610–617. <https://doi.org/10.30773/pi.2023.0283>
- Lidegran, I., Hultqvist, E., Bertilsson, E., & Börjesson, M. (2021). Insecurity, Lack of Support, and Frustration: A Sociological Analysis of How Three Groups of Students Reflect on Their Distance Education during the Pandemic in Sweden. *European Journal of Education*, 56(4), 550–563. <https://doi.org/10.1111/ejed.12477>
- Lim, D. C., Najafi, A., Afifi, L., Bassetti, C. LA, Eastwood, P. R., Zee, P. C., & Jackson, C. L. (2023). The Need to Promote Sleep Health in Public Health Agendas across the Globe. In *The Lancet Public Health* (Vol. 8, Issue 10, pp. e820–e826). [https://doi.org/10.1016/S2468-2667\(23\)00182-2](https://doi.org/10.1016/S2468-2667(23)00182-2)
- Lyons, K. M., Brock, T. P., Malone, D. T., Freihat, L., & White, P. J. (2020). Predictors of Pharmacy Student Performance on Written and CLINICAL EXAMInations in a Flipped Classroom Curriculum. *American Journal of Pharmaceutical Education*, 84(12), 1627–1636. <https://doi.org/10.5688/ajpe8038>
- Mahardhika, N. A., Kriswanto, E. S., Subekti, N., & Hartanto, A. (2024). Physical Activity, Eating Behavior, and Sleep Quality as Predictors of Body Mass Index in Adolescents? A Correlational Study on High School Students in East Kalimantan. *Fizjoterapia Polska*, 2024(1), 216–221. <https://doi.org/10.56984/8ZG2EF8ZsV>
- Masnan, F., Juraij, M., Rani, A., Salimah, N., Angel, M., Shahidan, M., & Kustiningsih, N. (2025). The Role of Sense of Purpose, Time Management, Attendance, Sleep, and Self-Esteem in Academic Performance among University Students in Malaysia. *Social Sciences & Humanities Open*, 11(December 2024), 101258. <https://doi.org/10.1016/j.ssaho.2024.101258>
- McInerney, K. (2023). Perceptions from Newcomer Multilingual Adolescents: Predictors and Experiences of Sense of Belonging in High School. *Child and Youth Care Forum*, 52(5), 1041–1072. <https://doi.org/10.1007/s10566-022-09723-8>
- McKnight-Eily, L. R., Okoro, C. A., & Thomas, C. (2021). Racial and Ethnic Disparities in the Prevalence of Stress and Worry, Mental Health Conditions, and Increased Substance Use Among Adults During the COVID-19 Pandemic. United States, April and May 2020. *MMWR. Morbidity and Mortality Weekly Report*, 70(5), 162–166. <https://doi.org/10.15585/mmwr.mm7005a3>
- Mitra, S., Sarkar, P., Bhattacharyya, S., & Basu, R. (2022). Absenteeism among Undergraduate Medical Students and Its Impact on Academic Performance: A Record-Based Study. *Journal of Education and Health Promotion*, 11(1). https://doi.org/10.4103/jehp.jehp_638_21
- Nguyen, T. Q., Ngo, L. T. T., & van Hoang, L. (2022). Assessing Port Service Quality: An Application of the Extended Fuzzy AHP and Importance-Performance Analysis. *PLoS ONE*, 17(2 February). <https://doi.org/10.1371/journal.pone.0264590>

- Olatoye, O. E., Jang, Y., Song, K., & Ahn, J. (2023). Impact of COVID-19 on Social and Psychological Well-Being of Workers in Construction Projects. *Buildings*, 13(8). <https://doi.org/10.3390/buildings13081902>
- Pham, A. T. (2022). University Students' Attitudes towards the Application of Quizizz in Learning English as a Foreign Language. *International Journal of Emerging Technologies in Learning*, 17(19), 278–290. <https://doi.org/10.3991/ijet.v17i19.32235>
- Popa-Velea, O., Pîrvan, I., & Diaconescu, L. V. (2021). The Impact of Self-Efficacy, Optimism, Resilience, and Perceived Stress on Academic Performance and Its Subjective Evaluation: A Cross-Sectional Study. *International Journal of Environmental Research and Public Health*, 18(17). <https://doi.org/10.3390/ijerph18178911>
- Purwani, A. (2023). Assistance in Forming a Habituation to Read Students' Daily Prayer Through Storytelling. *Proceedings of International Conference on Education*, 1(1).
- Rintaningrum, R., Kavgić, A., & Dudnik, O. (2023). New Concept of Teaching English to Students from Non-English-Speaking Countries. *Emerging Science Journal*, 7(6), 2202–2215. <https://doi.org/10.28991/ESJ-2023-07-06-020>
- Saifuddin, S., & Lathiifah, S. S. (2023). The Effect Of Giving Rewards On Student Motivation In Islamic Religious Education Subjects. *AL-WIJDĀN Journal of Islamic Education Studies*, 8(3), 448–462. <https://doi.org/10.58788/alwijdn.v8i3.2727>
- Sierra Leone Tony Patrick George, S. (2023). Investigating the Challenges Facing Effective Implementation of Free Primary Education in Bo District, Southern Sierra Leone. *International Journal of Educational Administration and Policy Studies*, 15(2), 130–135. <https://doi.org/10.5897/IJEAPS2023.0767>
- Walsh, N. P., Halson, S. L., & Samuels, C. H. (2021). Sleep and the athlete: Narrative Review and 2021 Expert Consensus Recommendations. *British Journal of Sports Medicine*, 55(7), 356–368. <https://doi.org/10.1136/bjsports-2020-102025>
- Wang, F., & Bíró, É. (2021). Determinants of Sleep Quality in College Students: A Literature Review. In *Explore* (Vol. 17, Issue 2, pp. 170–177). <https://doi.org/10.1016/j.explore.2020.11.003>
- Yunus, C. C. A., & Hua, T. K. (2021). Exploring a Gamified Learning Tool in the ESL Classroom: The Case of Quizizz. In *Journal of Education and e-Learning Research* (Vol. 8, Issue 1, pp. 103–108). <https://doi.org/10.20448/JOURNAL.509.2021.81.103.108>
- Zhang, Y., Zhang, H., Ma, X., & Di, Q. (2020). Mental Health Problems during the COVID-19 Pandemic and the Mitigation Effects of Exercise: A Longitudinal Study of College Students in China. *International Journal of Environmental Research and Public Health*, 17(10). <https://doi.org/10.3390/ijerph17103722>