



Relationship Between Academic Stress and Sleep Quality Among College Students

Devangi Tyagi

Student

AIPS

Amity University, Noida, India

Abstract : Academic stress often affects college students due to their workload, exams, performance expectations, time frames, and future career uncertainty. During college, college students tend to have irregular sleep quality, which plays a critical role in their physical well-being, emotional regulation, cognitive functioning, and academics. This present study will explore the relationship between academic stress and sleep quality in college students and the extent in which higher academic stress would cause disruptions in sleep patterns. Due to the transitional nature of entering adulthood, college students are a desirable group for studying stress: the accumulation of academic demands along social, personal, and financial burdens will create higher levels of psychological stress. An increase in psychological stress can result in physiological responses, disrupted circadian rhythm, through heightened cortisol levels and sympathetic nervous system activation. As a result, students experiencing high levels of academic stress may exhibit sleep deficits, which may include long sleep latency, disturbances, decreased sleep duration, unrefreshing sleep, and daytime fatigue. The correlation between academic stress and sleep quality will be analyzed through a quantitative research design with regression and correlation methods to determine the correlation coefficient. It is hypothesized that higher academic stress will be largely associated with worse sleep quality: insufficient sleep will impair students' academic and psychological functioning. Unrefreshing sleep can impair concentration, learning, memory, decision-making, and reflective processes, which ultimately impacts academic achievement. Moreover, sleep quality deficits can increase the risk of depression, anxiety, irritability, and emotional weakening. The relationship among stress regulation and sleep hygiene is specific to the relationship that students with healthy academic scheduling and emotion regulation skills are more able to maintain more consistent sleep patterns.

IndexTerms – Academic Stress, Sleep Quality, College Students

Introduction

Stress is not just a word: for many people, it is a feeling. It is the tight, constricted sensation in the chest or the mind, hyperactivity that can keep people awake all night (Lazarus & Folkman, 1984). Whether experiences are global, such as feelings of irritation or mild distress, or more specific, involving thoughts of rage or concern, normal day, to, day stressors tend to naturally accumulate as the day progresses, becoming somewhat burdensome (Selye, 1976). At baseline, stress is, by definition, the reaction to a challenge (Mc Ewen, 2007).

A moderate amount of stress can behave as a stimulant, like a cup of coffee: it can heighten one's responsiveness and feelings of readiness. But an extended period of high, alert and hyper, reaction can lead to significant deterioration in one's physical health and mental clarity (Sapolsky, 2004). Stress is also highly subjective; for some, an obstacle that would be overwhelming to them would seem minor in some others (Taylor, 2012).

Stress can be most simply defined as an undesirable outcome resulting from the need for adaptation when a person's unmet needs or internal conditions cannot cope with external demands and pressures (Bernstein et al., 2008). The term "stressor" refers specifically to impediments that interfere with an individual's regular function (Auerbach & Grambling, 1998). For many, it may be a sinking feeling as though the constraints of or demands upon him or her simply exceed their capacity for coping and/or performance at that time (Malach, Pines & Keinan, 2007). Ultimately it can be anything that thwarts a student's feelings of stability and or positive psychology (Cohen, Kessler, & Gordon, 1995).

Why Students are Feeling the Burn

Over the last few years, there has been an evolution within the world of academia. Today, it's not not enough to just learn and grow but survive a high, pressure academic environment (Deb, Strodl, & Sun, 2015).

Lukewarm Pressure Cooker.

The burden of the workload: all, encompassing pressures of exams, unending homework, and limited deadlines combined (Misra & McKean, 2000).

The pressures to succeed: especially the looming specter of academic achievement (Ang & Huan, 2006).

When stressors combine, the classroom isn't a place of learning, but of extreme and increasing pressure.

Students are not only being molded to “excel” but are increasingly expected to be “well rounded”: effective leaders, good listeners, volunteer at hospitals, and do it all while maintaining a busy academic schedule (Verma & Gupta, 2014). With the flurry of buses, clubs, and pizza hut runs, though, there often seems to be no sense of direction or purpose without a counselor to guide the way (Arnett, 2014).

The stakes of being “even, keeled” are undoubtedly compounded when parents and teachers can be overly harsh and demanding (Deb et al., 2015). In place of actual grades, what ensues is an upheaval of anxious energy and pre, grown, up angst.

High school is not just a crawl through a series of tests. It is the first sizeable socialization window of one’s life (Erikson, 1968). It is the pivotal, sensitive period. As such, it is also when peer influence peaks (Santrock, 2011). The craving for inclusion often pushes students toward risk, taking behaviors, such as theft and the consumption of illicit drugs (Santrock, 2011). For many, this mental toll itself is enough to sap one’s energies, especially for those who experience social anxiety or shyness (Steinberg & Monahan, 2007).

The wildly packed schedules and intractable deadlines are enough to tax even the most resilient. Combine this with the adherent pressure to be “the perfect student” and this can cause a downward spiral (Ang & Huan, 2006). Symptoms include:

- * Fading self, confidence

- * A feeling of own exhaustion

- * Drop, off in academic functioning because you own “done” (Salmela, Aro et al., 2009).

Without the emotional support structure of teachers and parents, one can stray through the college years not just overwhelmed but alone (Ryan & Deci, 2000).

Chronic and unmitigated stress can contribute to the development of a multitude of physical and mental health issues such as depression (Hammen, 2005). For this reason, finding healthy outlets for coping is important. Although stress has a variety of negative effects, so too can “eustress” in no small part due to our relative perception of these events (McKean et al., 2000). Small doses of this stress catalyst can motivate one to excel (Yerkes & Dodson, 1908). In essence, the goal is to find a “happy medium” where intense, yet productive, stress exists.

About Sleep

Sleep is a natural physiological function that affects the overall health and well, being of all age groups (National Institutes of Health [NIH], 2019). Proper sleep duration and quality are vital to physical health (cardiovascular, cerebrovascular, and metabolic health), mood stabilization, mental health, and more (Walker, 2017). According to recent research, sleep deprivation can ultimately diminish students’ performance, impair their attentiveness, and make them feelings of emotionally volatile (Curcio, Ferrara, & De Gennaro, 2006).

If sleep pathologies, circadian irregularities, brief episodes of sleep loss and chronic sleep deprivation are not addressed, they can have negative effects on someone’s mind, body and emotions (Medic, Wille, & Hemels, 2017). Chronic sleep deprivation in particular has been found to be a strong predictor for increased mortality as well as several chronic conditions such as obesity, diabetes, cardiovascular disease and cancer (Cappuccio et al., 2010). In fact, recent data has suggested increasing one’s sleep time could lead to significant gains in health (Watson et al., 2015).

To maintain good health, the American Academy of Sleep Medicine (AASM) and the Sleep Research Society (SRS) recommend that adults get at least seven hours of sleep every night on an ongoing basis (Watson et al., 2015). The National Sleep Foundation (NSF), recommends 7, 9 hours of sleep for adults and 7, 8 hours for older adults (Hirshkowitz et al., 2015). Guidelines like these are the foundation of some public health campaigns focused on improving sleep health.

About Sleep Quality

Sleep quality is the subjective index of sleep, “consisting of the duration, depth, efficiency of sleep and overall quality of sleep” (Buysse et al., 1989). When sleep quality is good, it brings about good psychological, physical and cognitive function. On the other hand, poor sleep quality is associated with fatigue, poor focus, mood irregularities, and worse health (Pilcher, Ginter, & Sadowsky, 1997).

Sleep quality, as a concept, spawns from multifarious factors physiological, psychological, and environmental, underpinning its interrelation with the overall life experience (Harvey et al., 2008). There is, as yet, no consensus regarding a standard definition of sleep quality across research or clinical contexts. Variations in sleep quality as a function of aging are extensive, with poorer sleep quality relating to greater difficulty in both sleep initiation and maintenance, as well as greater sleep fragmentation (Ohayon et al., 2004).

Previous researchers have used both objective and subjective indicators to measure sleep quality, through tools such as the Polysomnography, the Actigraph, the Pittsburgh Sleep Quality Index (Buysse et al., 1989), the Consensus Sleep Diary, the Richards, Campbell Sleep Questionnaire, and the Karolinska Sleep Diary (Carney et al., 2012). Of particular note, subjective sleep measurement is a necessity since individuals have an internal experience of sleep that is not otherwise observable through objective measures. In general, recent endeavors to capture sleep quality seek to identify central components of this multifaceted phenomenological entity as it relates to stress and overall health and well, being (Harvey et al., 2008).

The present study seeks to explore the link between college students’ academic stress and sleep quality. Students today are experiencing a multidimensional form of “pressure”: the stress, anxiety, and loss of time that comes from the rigorous demands of schooling. Literature suggests that it is the increased cognitive load of stress that will hurt sleep, impacting variables like sleep duration, sleep onset, and sleep efficiency. Therefore, we may find that students under the highest stress will be the ones with the lowest sleep quality. This study hopes to examine the specific nature of the relationship between academic stress and sleep quality by testing the association between the two as predicted by established measures of each, the Academic Stress Scale (ASS), and the Pittsburgh Sleep Quality Index (PSQI). Establishing this relationship could shed light on the ways that academic stress shapes the sleep health of college attendees and also lead to the development of better preventative and treatment strategies for students.

Review of Literature

All levels of education have led to widespread problems of academic stress that affect students' academic achievement as well as their physical health and psychological health. A vast amount of research shows the complexities of academic stress and its subsequent effects across multiple educational and cultural contexts.

Pezo, Fasanando (2026) noted that students of more difficult professional programs were more sensitive and exposed to academic stress in the study of nursing students at the National University of San Martin. The study, which used a quantitative descriptive, correlational methodology, revealed that exams, academic overload, and deficient teaching methods were the most stressful components. It was found that while behavioral symptoms were on average of mild severity, physical and psychological symptoms were of moderate severity. A notable finding was that there was statistically significant positive correlation between academic stress and behavioral, psychological, and physical symptoms, with the implication that the high symptomatology of the nursing students was directly correlated with the increased academic stress.

Similarly, Medina (2026) focused on adolescents and stressed that academic stress is prevalent among students at high school preparatory level and college level. In the study of the development and validation of the Academic Stress Scale for Adolescents (ASSA), which identified academic burden, external expectations, and self, expectations as key components of perceived academic stress, it contributed to the literature by illustrating that internal and external disturbances are experienced by adolescents and providing a reliable and valid measure for evaluative purposes.

Moving beyond traditional statistical analysis, Priyanto (2026) employed regression, based machine learning models to explore student stress in higher education. It revealed that environmental, cognitive, and psychological variables influence student stress through interaction effects, and bullying emerged as the most significant predictor, followed by extracurricular activities, self, esteem, and sleep quality. The excellent predictive accuracy of the Random Forest Regressor revealed the importance of complex analytical techniques for understanding the nonlinear dynamics of academic stress.

In light of the increasing integration of technology in education, Xu (2026) studied the psychological impacts of university students' engagement with AI tools. The study found a mediating role of academic self, efficacy in the relationship between AI use and loneliness as well as a direct relationship with academic stress. It is suggested that use of AI may improve learning efficiency, but at the same time increase stress, via complex psychological mechanisms. This effect may be especially prominent in students with higher academic self, efficacy.

Academic stress has been experienced by high school students in developing countries as well. Kaphle (2026) conducted a cross, sectional survey, based study in Kathmandu, Nepal, and reported that an overwhelming majority of high school students experienced high levels of academic stress. For more than fifty percent of the sample, examination and faculty, assignments are the primary triggers of stress. Males reported higher levels of personal and academic perceived stress compared to females. Recommendations to decrease the stress included institutional reforms, adequate preparation duration, career guidance, and reinforcement of social support.

Using approaches to reduce academic stress, Wuthrich (2025) looked at school, based programs designed to reduce or minimize the levels of academic stress experienced by adolescents. It was found that all assessed interventions, with the exception of teacher, led approaches, demonstrated the highest levels of efficacy when the implementation difficulties were addressed. Even though targeted and general strategies were found to be effective, the authors concluded that "Future research is required to delineate the optimal tools, techniques, and designs to address adolescent academic stress in schools".

Apart from psychological therapy, other variables such as lifestyle are important to consider in relation to academic stress. Rosenkranz (2025) conducted a literature review to examine the relationship among nutritional quality, academic achievement, and mental well, being among college students. Higher dietary quality were generally associated with less stress and better mental health; however, inconsistent findings may suggest the need for further research on the impact of nutrition to academic performance and stress.

Finally, Kangarbani. (2025) examined the correlation between academic stress and academic self, efficacy and self, compassion in undergraduate nursing students. It was found that the higher the perceived levels of self, efficacy and self, compassion, the less perceived academic stress. The findings underscore the importance of psychological resources to offset the negative effects of academic demands, and point toward the potential usefulness of treatments promoting self, efficacy and self, compassion for nursing students.

Hindes (2025) investigated first, year university students' academic stress from a resilience perspective. Based on a model of three, factor resilience, the study examined emotional reactivity, relatedness and mastery as dimensions of academic stress. The results indicated that while self, efficacy (mastery) and perceived social support (relatedness) inversely predicted academic stress, emotional reactivity directly predicted it. These findings imply that while students with higher sense of mastery and relatedness have enhanced ability to face the demands of the academic environment, those with higher emotional reactivity also experience an increase in academic stress. This study also indicated how resilience, focused interventions such as mindfulness and cognitive training may enhance self, regulatory abilities and lowering academic stress in students transitioning to college.

The relationship of academic stress to adverse health outcomes has received scrutiny in medical fields as well. Alarcon, Ruiz (2025) examined the relationship between the probability of eating disorders and academic stress experienced by medical students during their internship in Peru. The results revealed that a large proportion of the students were at risk of eating disorders, and that moderate and high levels of academic stress were highly prevalent. Those with high and moderate levels of academic stress were more than twice as likely to be at risk of disordered eating compared to students with low stress levels. The findings emphasize the importance of adopting a stress management intervention during challenging clinical rotations, and highlight academic stress as an important risk factor for disordered eating.

In terms of emerging trends, Kumar (2024) provided a bibliometric analysis and demonstrated the steady increase in the research related to academic stress. The author identified that prominent research themes included the effects of the COVID, 19 pandemic, psychological stress and mental health impacts on students, of college students and medical students specifically. The author further identified the scarcity of studies evaluating primary school students, and the newly identified themes of oxidative stress and risk factors as developing trends.

With respect to known protective factors, Ly (2024) focused on mindfulness, related characteristics such as self, compassion, psychological flexibility, and mindful awareness when exploring academic stress in international university students. The study discovered a strong association between heightened levels of anxiety and depressed symptoms and higher levels of academic stress with diminished mindfulness, related features. The finding suggests that mindfulness, based therapies may serve as a useful treatment target for reducing psychological distress in foreign students, although mindfulness, related features did not buffer the association between academic stress and psychological symptoms.

Another area of scientific inquiry involved the neurocognitive impact of academic stress. Gao (2024) used behavioral and electrophysiological approaches to study how chronic academic stress affects attentional control. It was demonstrated that students with long, term academic stress exhibited superior conflict resolution (a component of attentional control), but deficient conflict monitoring (another component of attentional control). The results suggest that adaptive as well as maladaptive changes in attentional performance during conditions of selective attention may be the consequence of chronic academic stress.

Ramakrishnan (2024) examined the relationship of self, esteem to academic stress among nursing students. It was found that most of the students perceived their self, esteem as being normal and experienced moderate levels of academic stress. However, older students tended to report greater levels of stress and lower self, esteem, and academic stress was found to be positively correlated with age, year of study, and place of residence. These findings underscore the importance of timely psychological intervention in nursing education, considering the long, term exposure to academic demands can negatively influence students' self, concept.

Psychometric innovations have improved the measurement and assessment of academic stress. Zavala (2024) validated and normed the SISCO, II Academic Stress Inventory among university students in Chile. Significant gender differences were observed in multiple facets of academic stress, and the researchers generated norms for symptoms, stressors, and coping strategies. The study reassures that accounting for gender factors is crucial to stress evaluation and provides the instrument with percentile norms and gender, based cut, off scores, thus improving its operational utility.

Gao (2023) further explored the associations among academic burnout, academic stress, academic anxiety, and academic self, efficacy in adolescents. It was noted that academic stress was negatively associated with self, efficacy and positively associated with anxiety and burnout, and the links between academic stress and burnout were mediated by academic anxiety. Having high levels of self, efficacy was found to shield adolescents from experiencing burnout through reductions in stress and anxiety, and both direct and indirect effects of stress on burnout were significantly alleviated. The finding specified the significance of academic self, efficacy as a protective factor that may buffer the negative effects of academic stress.

Danielsen (2023) The distinct mediating effects of within, and between, person academic stress on academic self, efficacy, and psychological distress were developed in a three, year longitudinal study among Norwegian high school students. The results revealed that academic stress consistently and positively impacted psychological distress, and self, efficacy fostered positive influences. The relation of academic stress to future perceived distress was partly mediated by academic self, efficacy, and the relation of perceived distress to future academic stress was of a reciprocal nature. Gender differences indicated that girls reported more intraindividual mental distress related to stress while boys experienced more interpersonal effects. The findings highlight the dynamic and reciprocal nature of academic stress, and discuss its practical implications.

Due to the COVID, 19 pandemic, the public's experience of academic stress was shaped by uncertainty and chaos, and students' academic experiences and daily routines were severely disturbed. Parvin (2023) revealed that about 40% of university students experienced an increase in academic stress due to the pandemic. The study also showed that higher levels of stress were positively correlated with younger age, being female, attending college as opposed to university, and having an acquaintance with COVID, 19. The results emphasize the role of institutional mental health support and flexible academic policies.

In addition to the work, life balance, and dietary lifestyle, physical activity can improve academic success and help reduce academic stress. Woll (2021) conducted a systematic review and meta, analysis to examine the link between athletic activity, academic achievement, and stress in university students. The general finding was that physical activity was associated with higher academic achievement and less stress, but the nature of the relationship was not clear. The authors identified the need for more well, defined, time, focused, and standardized research projects.

Sabina (2021) assessed academic stress among Ghanaian nursing students. It was found that the most significant contributor to students' academic stress was their workload; a large proportion of the cohort cited this factor as the dominant cause of self, reported stress. Almost three, quarters of students reports symptomatology consistent with the emotional, cognitive, and behavioral domains of stress. Factors significantly affecting levels of stress included academic program structure and gender. The authors recommend institution, specific tailoring of academic stress interventions.

Sleep and its influences on course, related stress was studied by Arria (2021). It was found that higher academic stress resulted in higher levels of fatigue, cynicism and inefficiency (aspects of academic burnout), and higher levels of academic stress predicted greater fatigue, and this relation was mitigated by higher sleep quantity and quality. The results suggest that sleep quality and duration counteract the effects of academic stress.

A further investigation of the mental health issues impacting college students' academic success, Yu (2021) found that sleep duration and physical activity contentedly mediated the relationship of academic stress to anxiety and depression in Chinese students. Academic stress directly predicted depression and anxiety, and the mediating effects of both sleep duration and physical activity were partial. The results supported the conclusion that health, promoting behaviors may buffer the mental health consequences of academic stress.

The COVID, 19 pandemic disrupted global lifestyles, and university students' academic experiences were affected as well. Berg, Beckhoff (2021) demonstrated through a survey that while changes during the pandemic increased the academic stress of nearly 40% of Danish students, the increase in academic stress was significantly predicted by young age, being in an undergraduate program, being female, feeling worried about the risk of becoming infected, and knowing someone infected with COVID, 19. The study underscores the importance of addressing mental health in the context of academic interventions in times of crisis.

Under heavy academic loads, medical students are one of the most vulnerable groups. Abdulrahman Bin (2020) identified high levels of psychological stress and poor sleep quality amongst preclinical medical students in Saudi Arabia. Although no association was found between stress or sleep quality with academic success, high stress levels was found to have a high association with poorer sleep quality. This suggests that wellbeing is exposed to greater threat from the stress of academics than from the immediate effect on academic success.

Role overload is an added stressor for some groups of students. Dawes (2020) highlighted the fact that when students are taking care of responsibilities from social, academic, and athletic areas, students experience increased stress.

To better support the mental health of student athletes, the research noted how early identification and intervention of stress by strength and conditioning coaches who have the ability to notice changes in behavior and performances and adjust training demands accordingly.

Exercise has been explored as a potential buffer against academic stress. Zatka's study (2020) explored the relationship between youth academic stress and exercise, but did not find any significant difference in the overall amount of physical activity among stressed versus unstressed students. The overall low level of physical activity in the sample, however, stressed the importance of aiming to make exercise a coping process to tackle ongoing academic stress, for those adolescent students who were stressed in multiple classes.

The association between academic stress and health outcomes has been studied in both physical and psychological domains. For instance, positive associations between academic stress and overweight or obesity were found among Chinese college students as Ma (2020) found that higher perceived academic stress significantly elevated the risk of overweight or obesity, predominantly among female students, undergraduate students, and students from lower tier institutions, and this risk was further enhanced by negative learning experiences, reflecting the detrimental long term impacts of academic stress.

There has also been a focus on how teachers can shape stress experiences in pupils. Lopez, Liria (2020) explored how teachers can influence academic stress and performance in pupils based on self-determination theory. Results indicated that while psychologically controlling teacher behavior increased academic stress, autonomy supportiveness in teaching decreased academic stress. Motivation and metacognitive skills served as protectors, however, academic stress negatively impacted on academic performance, critical thinking, motivation and metacognitive strategies. This study highlights the significance of teachers and learning environments in moderating academic stress.

Castro, Sanchez (2019) studied those relations between academic stress, adherence to the MD, PA and health condition among university students. It was a descriptive cross-sectional study including 515 participants, which evaluated by questionnaires the KIDMED index, PAQ-A, and the Scale of Academic Stress. The results demonstrated that female students presented higher scores in academic stress ($p < 0.01$) in relation to Academic responsibilities ($p < 0.001$) and Personal opinion ($p < 0.001$). Furthermore, male participants obtained lower scores ($p < 0.001$) in Personal opinion related to them gesturing negatively and higher BMI showed higher scores ($p < 0.001$) of academic stress. Moreover, poor adherence to MD seems to be related to higher scores of academic stress due to the lack of adherence to MD related to the scores to sharing personal opinion ($p < 0.05$). PA was not related to academic stress but food quality was associated negatively with academic stress; nonetheless, in the regression analysis, sex and BMI eliminated this relation.

Moreover, the association between adolescent academic stress and a range of psychological problems, such as depression, has been established as well. Abdulrahman (2019) conducted a research to explore the association of adolescent academic stress and depression symptoms among adolescents in the United Arab Emirates, utilizing a cross-sectional research design. The study used both the Perceived Stress Scale (PSS, 14) and the Educational Stress Scale for Adolescents (ESSA), noting that most of the subjects experienced a moderate level of perceived stress, while 29.6% of the respondents indicated high stressful perception. Perceived stress was demonstrated to be significantly related to subjects' age, gender and academic level. Moreover, some characteristics appeared to be significant predictors of academic stress (e.g., history of depression; dissatisfaction with academic progress; high parental expectations; adolescents' perceived ability to meet those expectations). The study recommended early screening of academically overburdened adolescents and school interventions including counseling and stress management programs in order to alleviate the psychological burden.

Umeda is a population who might be considered at particular risk, due to the high relatedness of academic work. However, a greater variety of research has been carried out on this population than others. Loerbroks (2019) gave some qualitative data regarding academic tension experienced by medical students in Germany. Medical students who participated in focus groups revealed that they were under more stress related to their academic commitments, adjustments to new social roles and their adaption to living alone. Chronic stress among this population was associated with social isolation, emotional exhaustion and lowered levels of leisure and health promoting activities; increases in stress were particularly applicable to times of examination. However, leisure activities were regarded as beneficial to stress recovery, whilst side employment and some personality parameters, such as high levels of conscientiousness, were positively correlated with higher levels of stress. The study highlighted how the domain of the social and personal were particularly relevant to the academic domain for this population.

Correspondingly, Davis (2019) pointed out that medical training was itself a stressor and this factor could explain the higher rates of mental health problems found among medical students relative to age-matched controls. The mental health issues they were found to suffer from include burnout, depression, somatic symptoms, decline in empathy and poor academic performance. The study aimed to assess certain psychoeducational factors, including learning strategies, stress coping strategies and resilience, in order to examine students' responses to academic stress. The study also examined the predictive roles of these factors towards academic performance, hence the importance of resilience as well as adaptive coping mechanisms in coping with student academic stress.

Sleep quality is another condition affecting mental health and academics. Saquib in a 2019 study on sleep quality and psychological distress found that poor sleep quality was prevalent among medical students. They also observed that high screen time and low physical activity was associated with poor sleep quality. Poor sleep quality was significantly associated with stress, anxiety and depression. However those students with poor sleep quality also tended to do slightly better in their academics. Such studies ultimately indicate the need for balanced teaching approaches as we do not want to compromise physical and mental health.

Sleep quality has also been associated with broader health effects in realworld contexts. Tam (2018) identified, within 29 report meta-analysis, a statistically significant relationship between poor sleep quality and risk of developing hypertension. Those with poor sleep quality reported higher levels of odds for developing hypertension across time, supporting the long term health effects of sleep quality. These findings confirmed the importance of sleep quality for cardiovascular health, regardless if physiological changes in blood pressure reached significance. These results provide further contextual information in regards to how lengthy academic stress can affect sleep and ultimately physical health.

O'Brien (2018) also pointed out that despite clear evidence that sleep deprivation negatively affects mood, cognition, and performance, there is little evidence of successful sleep education programs targeted toward college students. The current intervention evaluated an online sleep education program, Sleep to Stay Awake, among young adult college students. This program was found to be effective in a randomized controlled trial for improving depression scores, sleep quality, and sleep behaviors. Participants in the intervention were also more likely to develop helpful sleep behaviors such as reducing the use of electronics before bed, maintaining consistent sleep schedules, and avoiding sleep deprivation before an exam. These results suggest that brief, individualized online sleep educational programs can be an effective and inexpensive approach to improving sleep in college students.

Measurement of sleep quality is integral in research and clinical practice. Streiner (2018) critically examined the factor structure of Pittsburgh Sleep Quality Index (PSQI), a popular sleep research instrument. Numerous studies produced inconsistent findings due to major methodological issues including bias in application or lack of application in exploratory and confirmatory factor analysis and absence of psychometric principles such as sample adequacy testing or the parsimony principle. Therefore, the author recommends the validation of PSQI sleep quality factor structures.

Stress is considered an important risk factor for sleep problems among medical students. Alaqeel (2017) measured the prevalence of poor sleep quality among medical students in Saudi Arabia, and sought its relation to stress. They found a significant positive correlation between stress and sleep quality, with both phenomena having very high prevalences. Poor sleep quality was also significantly higher among lower, achieving students. They recommended implementation of institutional services including academic counseling, sleep hygiene classes and stress reduction programs to improve academic performance, health and well, being.

The academic achievement of adolescents has been found to be negatively affected directly by sleep quality. Oyanedel (2017) calculated the academic achievement and sleep quality of high school students working the morning and the afternoon shift; those who reported attending to have lower sleep quality attending to have a lower academic achievement whatever the school shift is. The conclusion that sleep quality is an important contributor to the academic progress of students in adolescence is supported by the inverse association found between the students' academic achievement and the PSQI scores.

In addition to academic and psychological outcomes, sleep quality has been determined to have important long term health outcomes. Ochs, Balcom (2017) assessed the relationship between aggressive breast cancer characteristics in postmenopausal women and sleep duration and quality, while considering controls for other factors. In the results, racial differences were found to exist in the relationships between aggressive tumor subtypes and more advanced stages of cancer and short sleep duration and poor sleep quality. These findings may indicate long, term implications of sleep disorders while illustrating the importance of sleep practices as modifiable health factors.

This was another study that indicated biological importance of sleep. Gozal (2016) undertook a systematic review of the role of sleep in metabolism. A summary of the review indicated that (1) deprivation of sleep, sleep, disordered breathing and circadian mis, timings displayed a trend towards associations with several adverse health consequences including obesity, insulin resistance, type 2 diabetes, metabolic syndrome and increased cardiovascular risk. This explanation provides a mechanistic link for the association of long, term academic stress and poor sleep and negative health behaviors.

Hormonal and psychological disorders have been identified as additional sleep problems for female university students. Nasouri (2016) examined the prevalence of premenstrual dysphoria (PMDD) and the impact on sleep. The findings indicated that a large portion of female students presented with sleep issues, daytime dysfunction, and poor sleep quality and subsequently reinforce the importance of prioritized assessment and intervention for female students with hormonal, related mood pathologies and gender vulnerability in sleep health.

Methodology

Aim

To explore the association between academic stress and sleep quality among college students.

Objective

To investigate the relationship between academic stress and sleep quality among college students.

Hypothesis

There will be significant association between academic stress and sleep quality among college students.

Results

Table 4.1

Demographic Characteristics of the Participants (N = 200)

Variable	Category	N	%
Gender	Male	106	53.0
	Female	93	46.5
Education	UG	100	50.0
	PG	100	50.0

There were 200 people in the sample. Of them, 46.5% were women (n=93) and 53% (N=106) were men. In terms of educational background, half of the participants were postgraduate students and the other half were undergraduates.

Descriptive Statistics**Table 4.2**

Variable	N	Minimum	Maximum	Mean	SD	
Academic Stress Scale (ASS)	200	10.00	45.00	29.86	6.10	
Pittsburgh Sleep Quality Index (PSQI)	200	10.00	49.00	30.13	6.01	

The sample of 200 was then used to obtain descriptive information for the PSQI and the ASS. The average for the ASS on the sample ranged from 10 to 45, with the average being 29.86 (SD= 6.10), these scores vary between low to moderate levels of sleep disturbances. The sample on the PSQI ranged from 10 to 49, with the mean being 30.13 (SD= 6.01), ranging from poor to very poor sleep quality. The standard deviations indicate that the measurements range between moderate degrees for both of the samples, indicating that participants have varying degrees of sleep disturbance and sleep quality.

Table 4.3**Correlation**

Variable	1	2
Academic Stress Scale (ASS)	–	.69**
Pittsburgh Sleep Quality Index (PSQI)	.69**	–

$N = 200$. $p < .01$ (two-tailed). Values are Pearson correlation coefficients.

Correlation is significant at the 0.01 level (2 tailed)

The association between sleep disruptions (ASS) and sleep quality (PSQI) was investigated using Pearson's product-moment correlation analysis. The findings showed that ASS and PSQI scores had a significant positive connection ($r = .689$, $p < .01$). This suggests that poorer sleep quality is substantially correlated with higher levels of sleep disruptions. A significant and trustworthy association between the two variables was suggested by the statistically significant correlation at the two-tailed 0.01 level.

Table 4.4.**Linear Regression**

Model Fit Measures		
Model	R	R ²
1	0.692	0.479

Note. Models estimated using sample size of $N=200$

Model Coefficients – ASS				
Predictor	Estimate	SE	t	p
Intercept	8.573	1.6085	5.33	<.001
PSI	0.706	0.0523	13.49	<.001

To find out if sleep quality (PSQI) significantly predicted academic stress (ASS) in the subjects, a simple linear regression was conducted. The total model was fit and significant ($R = .692$, $R^2 = .479$) indicating that the model predicted an estimated 47.9% (0.479) of the variance of the dependent variable (ASS), and the actual variance of the variables. Poor sleep quality was predictive of more academic stress, as indicated by the significant PSQI coefficient (0.706) which was positive. The PSQI coefficient was also significant ($SE = .052$, $t = 13.49$, $p < .001$) in predicting the basis variables. The intercept was also significant ($B = 8.573$, $SE = 1.609$, $t = 5.33$, $p < .001$). These results indicated that, for the subjects in the sample ($N = 200$), academic stress can be significantly and strongly predicted by sleep quality.

Discussion

The aim of this study was to investigate the connection between sleep quality and academic stress. The descriptive statistics demonstrated a mean score of 29.86 (SD 6.10) on the ASS by the sample which again indicates that the level of academic stress experienced by the sampled population is very high. Furthermore, the fact that the sample received a mean score of 30.13 (SD 6.01) on the PSQI (good sleep quality is indicated by a score of 5 or less) establishes that the sleep quality of the individuals of the sample is very poor. This rather similar spread of the responses for both the tests can be indicative of the fact that the responses from the sample were fairly representative. As has been established from the correlational analysis that the academic stress and sleep disorder variables are very significantly ($p < .001$) and positively correlated ($r = .689$), it can be inferred that the high scores on the ASS can be directly correlated to poor sleep. The empirical hypothesis has been successfully established by this study through the seriousness and significance of the correlation. The findings above are consistent with the literature that shows the inordinate academic pressure and fear of failing a student can evoke excessive stress which in turn causes poor sleep quality owing to increased cognitive activity. Sleep disturbances can be a consequence of the high stress levels. There exists a bidirectional relationship between academic stress and sleep disturbance. The correlations established in the current study underscore why academic stress should be taken into account while researching sleep problems. Such research suggests that these academic stressors can have a detrimental impact not only on sleep quality but also on cognitive, affective and emotional functioning and well-being. Stress management, time management and hypnotic relaxation techniques can be used practically to help students who are affected by high academic stress. The findings for the current study show clearly and convincingly support the hypothesis that sleep and academic stress are negatively related. The current results show the need to design psychological and educative strategies that focus on decreasing academic stress in order to improve sleep and mental state.

Conclusion

The comparison of the three main variables of the present study showed that students had poor quality of sleep as well as moderate academic stress. By means of descriptive analysis the existence of the high level of disturbances and the poor quality of sleep was confirmed and the presence of academic stress in some students was demonstrated. In addition to that, the findings of the correlation analysis revealed the significant positive correlation between academic stress and the disturbances in sleep stating that students with high academic stress tend to have disturbed sleep. Also high academic stress can lead to latency and sleep problems that can further improve the students' psychological and academic success. The results of the present study largely contributed to the empirical and original studies on the destructive effect of stress on sleep. The significant positive correlation between academic stress and sleep disturbance demonstrated the necessity of addressing this factor in relation to health and education context. Prolonged sleep discomfort can lead to exhaustion, concentration problems, mood changes and increase the risk of mental disorders. The conclusion of the study accentuates on the importance of stress management activities for improving sleep and health. The stress reduction practices, sleep hygiene programs and stress reduction strategies oriented at academic and psychological field can serve as effective preventing measures. The results of the present study highlight the need for prevention and intervention work with students.

References

- Pezo-Fasanando, T. S. (2026). Academic stress factors and associated symptoms in nursing students. *SAP Health and Policy*, 5, 375-375.
- Medina, M. A. (2026). Development of the Academic Stress Scale for Adolescents and Examination of Perceived Academic Stress Among Chinese Adolescents. *Psychology in the Schools*.
- Priyanto, E. (2026). Identifying Key Psychological, Academic, and Environmental Determinants of Student Stress Using Regression-Based Machine Learning. *International Journal of Informatics and Information Systems*, 9(1), 257-269.
- Xu, S. (2026). Relationship between artificial intelligence tool usage experience and academic stress among college students: Mediating role of loneliness and moderating role of academic self-efficacy. *Acta psychologica*, 263, 106220.
- Kaphle, M. (2026). Perceived Academic Stress and Its Correlates Among Secondary School Adolescents in Kathmandu, Nepal. *Public health challenges*, 5(1), e70186.
- Wuthrich, V. M. (2025). Academic Stress Interventions in High Schools: A Systematic Literature Review. *Child psychiatry and human development*, 56(6), 1836–1869.
- Rosenkranz, S. K. (2025). The association of overall dietary quality on stress, anxiety, depression, and academic performance in college students: a systematic review. *Journal of American college health : J of ACH*, 73(3), 977–988.
- Kangarban, M. A. K. (2025). Self-compassion, academic stress, and academic self-efficacy among undergraduate nursing students: a cross-sectional, multi-center study. *BMC medical education*, 25(1), 506.

Hindes, Y. (2025). Relationships Between First-Year Student Resilience and Academic Stress. *Behavioral sciences (Basel, Switzerland)*, 15(6), 772.

Alarcon-Ruiz, C. A. (2025). Academic stress associated with probable eating disorder in medical students during their externship: post-pandemic cross-sectional study. *BMC psychiatry*, 26(1), 37.

Kumar, S. (2024). Bibliometric Analysis of Research Papers on Academic Stress (1989-2023). *Cureus*, 16(3), e55536.

Ly, V. (2024). Academic stress, mindfulness-related skills and mental health in international university students. *Journal of American college health : J of ACH*, 72(3), 787–795.

Gao, H. (2024). Chronic academic stress improves attentional control: Behavioral and electrophysiological evidence. *International journal of clinical and health psychology : IJCHP*, 24(3), 100484.

Ramakrishnan, B. (2024). Assessment of self-Esteem and academic stress among nursing students. *Bioinformation*, 20(12), 1886–1889.

Zavala, W. (2024). Academic stress in college students: descriptive analyses and scoring of the SISCO-II inventory. *PeerJ*, 12, e16980.

Gao X. (2023). Academic stress and academic burnout in adolescents: a moderated mediating model. *Frontiers in psychology*, 14, 1133706.

Danielsen, A. G. (2023). Academic Stress, Academic Self-efficacy, and Psychological Distress: A Moderated Mediation of Within-person Effects. *Journal of youth and adolescence*, 52(7), 1512–1529.

Parvin, S. M. R. (2023). Perceived academic stress during a pandemic: Mediating role of coping strategies. *Heliyon*, 9(6), e16594.

Rocamora-Pérez, P. (2023). Academic Stress in University Students: The Role of Physical Exercise and Nutrition. *Healthcare (Basel, Switzerland)*, 11(17), 2401.

Fan, X. (2023). Academic Stress and Sleep Quality among Chinese Adolescents: Chain Mediating Effects of Anxiety and School Burnout. *International journal of environmental research and public health*, 20(3), 2219.

Ming, X. (2022). Academic Stress and Mental Well-Being in College Students: Correlations, Affected Groups, and COVID-19. *Frontiers in psychology*, 13, 886344.

Popp, J. (2022). Family and Academic Stress and Their Impact on Students' Depression Level and Academic Performance. *Frontiers in psychiatry*, 13, 869337.

Leyton, F. (2022). Perfeccionismo, estrés académico y ansiedad social en mujeres estudiantes de medicina y riesgo de padecer un trastorno alimentario: un modelo multivariado [Perfectionism, academic stress and social anxiety in female medical students and the risk for eating disorders]. *Revista medica de Chile*, 150(8), 1046–1053.

Onyishi, A. B. (2022). Academic stress and suicidal ideation: moderating roles of coping style and resilience. *BMC psychiatry*, 22(1), 546.

Yousef, B. A. (2022). Perceived Academic Stress, Causes, and Coping Strategies Among Undergraduate Pharmacy Students During the COVID-19 Pandemic. *Advances in medical education and practice*, 13, 189–197.

Woll, A. (2021). The Tridirectional Relationship among Physical Activity, Stress, and Academic Performance in University Students: A Systematic Review and Meta-Analysis. *International journal of environmental research and public health*, 18(2), 739.

Sabina, N. (2021). Academic-Related Stress Among Ghanaian Nursing Students. *Florence Nightingale journal of nursing*, 29(3), 263–270.

Arria, A. M. (2021). Stress and Burnout Among Graduate Students: Moderation by Sleep Duration and Quality. *International journal of behavioral medicine*, 28(1), 21–28.

Yu, F. (2021). Academic Stress, Physical Activity, Sleep, and Mental Health among Chinese Adolescents. *International journal of environmental research and public health*, 18(14), 7257.

Berg-Beckhoff, G. (2021). Academic stress in Danish medical and health science students during the COVID-19 lock-down. *Danish medical journal*, 68(7)

Bin Abdulrahman, K. A. (2020). The relationship between sleep quality, stress, and academic performance among medical students. *Journal of family & community medicine*, 27(1), 23–28.

Dawes, J. J. (2020). Stress in Academic and Athletic Performance in Collegiate Athletes: A Narrative Review of Sources and Monitoring Strategies. *Frontiers in sports and active living*, 2, 42.

Žatka, R. (2020). Academic Stress and Physical Activity in Adolescents. *BioMed research international*, 2020, 4696592.

Ma, L. (2020). Higher Academic Stress Was Associated with Increased Risk of Overweight and Obesity among College Students in China. *International journal of environmental research and public health*, 17(15), 5559.

López-Liria, R. (2020). The Influence of Teachers on Motivation and Academic Stress and Their Effect on the Learning Strategies of University Students. *International journal of environmental research and public health*, 17(23), 9089.

Castro-Sánchez, M. (2019). Relationship between Academic Stress, Physical Activity and Diet in University Students of Education. *Behavioral sciences (Basel, Switzerland)*, 9(6), 59.

Abdulrahman, M. (2019). Perceived Academic and Psychological Stress among Adolescents in United Arab Emirates: Role of gender, age, depression, and high expectation of parents. *Psychiatria Danubina*, 31(Suppl 3), 331–337.

Loerbroks, A. (2019). Medical students' perceptions of stress due to academic studies and its interrelationships with other domains of life: a qualitative study. *Medical education online*, 24(1), 1603526.

Davis, D. (2019). Investigating the Relationship Between Resilience, Stress-Coping Strategies, and Learning Approaches to Predict Academic Performance in Undergraduate Medical Students: Protocol for a Proof-of-Concept Study. *JMIR research protocols*, 8(9), e14677.

Saqui, N. (2019). A cross-sectional survey on sleep quality, mental health, and academic performance among medical students in Saudi Arabia. *BMC research notes*, 12(1), 665.

Tam, W. (2018). Subjective sleep quality, blood pressure, and hypertension: a meta-analysis. *Journal of clinical hypertension (Greenwich, Conn.)*, 20(3), 592–605.

O'Brien, L. M. (2018). The Impact of a Randomized Sleep Education Intervention for College Students. *Journal of clinical sleep medicine : JCSM : official publication of the American Academy of Sleep Medicine*, 14(3), 337–347.

Streiner, D. L. (2018). Dimensionality of the Pittsburgh Sleep Quality Index: a systematic review. *Health and quality of life outcomes*, 16(1), 89.

Alaqeel, M. K. (2017). The prevalence and association of stress with sleep quality among medical students. *Journal of epidemiology and global health*, 7(3), 169–174.

Oyanedel, J. C. (2017). Calidad de sueño y rendimiento académico en alumnos de educación secundaria [Quality of sleep and academic performance in high school students]. *Revista medica de Chile*, 145(9), 1106–1114.

Ochs-Balcom, H. M. (2017). Sleep quality, duration, and breast cancer aggressiveness. *Breast cancer research and treatment*, 164(1), 169–178.

Gozal, D. (2016). Role of sleep quality in the metabolic syndrome. Diabetes, metabolic syndrome and obesity : targets and therapy, 9, 281–310.

Nasouri, M. (2016). Sleep Quality in University Students with Premenstrual Dysphoric Disorder. *Shanghai archives of psychiatry*, 28(3), 131–138.