A Sleep Intervention to Benefit the Students of Metropolitan State University of Denver

BACKGROUND INFORMATION

The negative impacts of sleep deprivation are unfortunately all too-common for college students, with the students at Metropolitan State University of Denver (MSUD) being no exception. It's important to uncover exactly what the adverse effects of a lack of sleep are in order to properly implement an intervention to assist students, meaning the following information is detrimental to forming any effective proposition of change.

Prevalence of Sleep Deprivation Among College Students

Considering the pressure associated with balancing school, work, personal relationships, and extracurricular activities, it's no surprise that many college students suffer from the negative effects of sleep deprivation (Gruber, 2013; Cifre et al., 2020). In fact, Cifre and colleagues (2020) found that the prevalence of clinical insomnia among students was around 8%, while an astounding 60% of students reported that they suffer from acute sleep disturbances that disrupt the duration and quality of their rest. Further compounding the issue is the fact that an estimated 50% of college students experience excessive daytime sleepiness, which not only negatively impacts a student's academic success, but also their overall well-being (Cifre et al., 2020).

Proposed Causes for Sleep Deprivation in College Students

The prevalence of these issues is not solely due to hectic schedules, but also to the biological aspects at play in the typical college student. The average age of college students is between 18-25 years, meaning the associated brain chemistry of that demographic predisposes them to being more alert and awake during the night hours (Cifre et al., 2020). This chronotype is not supported in the broader society that functions around the timetable set by those whose

biochemistry allows for them to naturally go to sleep and wake earlier, and it is due to this pressure to fit within societal norms that leads to sleep debt in college students (Cifre et al., 2020; Gruber, 2013).

Further exacerbating the prevalence of sleep deprivation among college students is the association of sleeplessness with accomplishment (Gaultney & Collins-McNeil, 2009). Despite sleep being a vital part of healthy human functioning, many people celebrate those who choose productivity over rest (Gaultney & Collins-McNeil, 2009); this is not an uncommon phenomenon among college students who can often be observed bragging about how little sleep they have gotten or about how they pulled an "all-nighter" to complete work. *Co-occurring Conditions Associated with Sleep Deprivation*

Sleep is a natural and necessary function of the human body that can be detrimental to both physiological and psychological health (Cifre et al., 2020; Gaultney & Collins-McNeil, 2009; Gruber, 2013; Talbot et al., 2010). In their compiled research regarding the effects of sleep on an individual's mental and physical health, Gaultney & Collins-McNeil (2009) listed decreased cortisol, cardiovascular disease, and changes in immune functioning as just a few physiological side-effects of sleep deprivation. As for psychological impacts, Gaultney & Collins-McNeil (2009) discussed the following (among others): decreased academic performance; an increase in Attention Deficit Hyperactivity Disorder (ADHD) symptoms; inflated learning and memory deficits; an increase in symptoms associated with depression, anxiety, and panic disorders; and a rise in suicide rates.

Gruber (2013) also observed that sleep deprivation is a cause of learning and memory impairment, which is a major issue for college students who rely upon these neurological processes for their academic success. Gruber (2013) furthers the discussion by relaying the following findings: not only does sleep deprivation negatively impact neurobehavioral functioning related to memory, but also to other important abilities such as attention and/or response inhibition, problem solving capabilities, creativity in regards to verbal communication, along with more general cognitive functions that are important to students.

Impact of Sleep Deprivation on Subjective Well-Being

A majority of the aforementioned co-occurring conditions have a major impact on an individual's subjective well-being (SWB). Cross et al. (2018) have found that SWB has an impact on an individual's physical health, and vice versa. Physical health is defined "as the systems of the body carrying out physiological functions properly, with 'good' physical health frequently indicated in research by the lack of illness or disease" (Cross et al., 2018, p.1). Taking into account this definition along with its connection with SWB, it makes sense, then, that the adverse physiological responses resulting from sleep deprivation can negatively impact one's overall well-being (Cifre et al., 2020; Gruber, 2013; Miller et al., 2017). What makes this relationship between sleep and physical health even more critical is the fact that it is bidirectional, meaning sleep deprivation jeopardizes wellness and bad health can be the cause of disrupted sleep, leading to a vicious circle that can seem impossible to escape and thus lead to a severely damaged quality of hife (Gaultney & Collins-McNeil, 2009).

The adverse physiological effects of sleep deprivation on SWB aren't the only factors to consider - it's also important to take into account the psychological aspects at play. Talbot and colleagues (2010) found that a lack of sleep can negatively impact one's general affect, making it even more challenging to process negative (and positive) emotions and thus lead to a generally poor attitude and SWB according to the definition produced by Cross et al. (2018). Not only can one's mood be negatively impacted by a lack of sleep, but their general mental health is also in

jeopardy when the brain is not given proper time to rest (Gruber, 2013; Talbot et al., 2010). It has been found that sleep deprivation can lead to an increased risk of an individual developing an anxiety disorder, which then leaves them susceptible to the negative consequence of diminishing cognitive functions (Talbot et al., 2010).

Finally, the valuable quality of future-mindedness can also be influenced by one's sleep. Miller and colleagues (2017) established that when one obtains an adequate amount of sleep, their likelihood to plan ahead and contemplate potential consequences for actions are increased. It follows, then, that those who don't get enough rest will be more likely to exhibit impulsive tendencies, meaning they might find it challenging to prevent themselves from engaging in dysfunctional behaviors that could negatively impact them in the long run (Cifre et al., 2020). *Aspects Shown to Alleviate Negative Consequences of Sleep Deprivation in Previous Studies*

One of the most successful approaches to alleviating the negative effects resulting from sleep deprivation has been to focus on lifestyle choices and/or changes (Gruber, 2013). In order to get quality sleep, one must restructure their life around a new, firmly applied timetable that allows for enough sleep, while also subscribing to a structured system that applies consistent bedtimes and rising times (Gaultney & Collins-McNeil, 2009). This concept has been termed as "sleep health" (Miller et al., 2017) or as "sleep hygiene" (Cifre et al., 2020; Gruber, 2013); however, they refer to the same basic concept that it's important to get into a schedule in order to attain quality sleep on a consistent basis in order to improve one's overall well-being.

The findings from the application of this approach to students are quite imperative to the intervention that will be discussed in the following section. Richardson and colleagues (2012) emphasized the importance of consistency in students' academic success, postulating that their performance relies heavily upon the ability to self-regulate, which includes having enough

willpower to stick to a routine. One study found that college students that attended a sleep hygiene presentation saw continued improvement in their rest for up to 6 weeks after the lecture (Cifre et al., 2020). Along these same lines, findings suggest that by taking the time to inform college students about how sleep deprivation can impact their academic success, universities are increasing the likelihood that their students will improve their sleep quality and thus boost their GPAs (Cifre et al., 2020).

Gruber's (2013) findings expand upon this concept, highlighting the idea that even a modest extension to one's sleep time resulted in better functioning in a school setting. It was also found that one of the most effective ways to teach individuals about the importance of sleep hygiene was to integrate the interventions into pre-existing services already offered to the population in question to make the information even more accessible to a broader audience (Gruber, 2013).

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