Exploring the relationship between Sleep Quality and Empathy on college students

Dissertation submitted in partial fulfillment of the requirements for the award of

Bachelor of Science in Psychology

By

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SB20PSY036

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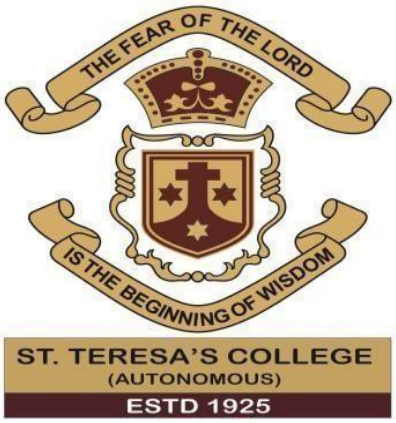

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Declaration

I, Kenza Abdul Lathief,do hereby declare that the work represented in the dissertation embodies the results of the original research work done by me in St. Teresa's College, Ernakulam under the supervision and guidance of Ms. Princy Thobias, Assistant Professor, Department of Psychology, St. Teresa's College, Ernakulam, it has not been submitted by me to any other university or institution for the award of any degree, diploma, fellowship, title or recognition before.

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Thanking you

Kenza Abdul Lathief

Table of Contents

List of Tables

Abstract

The research undertaken, focusing on the intricate relationship between sleep quality and empathy, is particularly significant due to the profound impact these factors have on overall well-being. By exploring this relationship, the study sheds light on essential aspects of human health encompassing physical, emotional, and social dimensions. The sample size of 100 individuals, evenly split between males and females, ensures a balanced representation across genders, enabling a nuanced examination of potential gender-based variations in sleep quality and empathy levels.

The utilization of the Toronto Empathy Questionnaire (TEQ) and the Sleep Quality Scale as measurement tools underscores the comprehensive approach adopted to assess these critical variables. The TEQ, known for its reliability in gauging empathetic abilities through scenario-based assessments, provides valuable insights into participants' emotional understanding and responsiveness. Concurrently, the Sleep Quality Scale offers a detailed assessment of various sleep-related parameters, allowing for a holistic evaluation of sleep patterns and experiences among the study participants.

The statistical analyses employed, specifically Pearson's correlation and independent t-test, serve as robust methodologies for uncovering patterns and differences within the data. The use of Pearson's correlation elucidates the nature and strength of the relationship between sleep quality and empathy, elucidating whether individuals with better sleep tend to exhibit higher empathetic tendencies, and vice versa. Additionally, the application of independent t-tests facilitates a comparative analysis between genders, revealing potential disparities in sleep quality and empathy levels.

The implications of this research extend beyond academia, carrying practical implications for health promotion and intervention strategies. A deeper understanding of the sleep-empathy nexus can inform targeted interventions aimed at enhancing both sleep quality and empathy, thereby fostering improved overall well-being and interpersonal relationships.

CHAPTER 1

INTRODUCTION

Students are the future of society, tasked with the responsibility of shaping the world to come. As they navigate the demanding academic, social, and personal challenges of their educational journey, two critical factors emerge as essential for their overall well-being and success; empathy and sleep quality.

Empathy

Empathy can be defined as the capacity to comprehend and resonate with the emotions, thoughts, and experiences of others. It entails the ability to mentally step into another person's viewpoint, acknowledging their feelings genuinely. "Empathy is seeing with the eyes of another, listening with the ears of another, and feeling with the heart of another." - Alfred Adler. Empathy plays a vital role in nurturing relationships, facilitating effective communication, and providing comfort and assistance during challenging times. It is a cornerstone of emotional intelligence, fostering understanding, compassion, and collaboration in social dynamics.

Empathy serves as the cornerstone of trust within relationships, fostering genuine connections and dismantling prejudices. Its impact transcends individual interactions, contributing to overall well-being and inspiring positive societal change. By empathizing with others, we not only uplift their spirits but also ignite a collective passion for justice and equality.

Moreover, empathy sparks creativity by encouraging diverse perspectives and innovative solutions to complex issues. In healthcare, it leads to improved patient outcomes and satisfaction by fostering a supportive environment where patients feel understood and cared for. Embracing empathy in our daily lives is not just a gesture of kindness but a catalyst for creating a more compassionate and empathetic world where everyone's experiences are valued and validated.

Types of empathy

There are several types of empathy that a person may experience.

The three types of empathy are:

Affective empathy involves the ability to understand another person's emotions and respond appropriately. Such emotional understanding may lead to someone feeling concerned for another person's well-being, or it may lead to feelings of personal distress.

Somatic empathy involves having a physical reaction in response to what someone else is experiencing. People sometimes physically experience what another person is feeling. When you see someone else feeling embarrassed, for example, you might start to blush or have an upset stomach.

Cognitive empathy involves being able to understand another person's mental state and what they might be thinking in response to the situation. This is related to what psychologists refer to as the theory of mindor thinking about what other people are thinking.

Importance of Empathy

Empathy is incredibly important for several reasons:

Enhanced Relationships: Empathy forms the foundation of strong, healthy relationships. When we can understand and share the feelings of others, it fosters trust, mutual respect, and deeper connections.

Effective Communication: Empathetic individuals are better communicators because they can relate to others' perspectives and tailor their messages accordingly. This leads to clearer understanding and more productive interactions.

Conflict Resolution: Empathy plays a crucial role in resolving conflicts peacefully. When people feel understood and validated, they are more likely to engage in constructive dialogue and find mutually beneficial solutions.

Promotes kindness and compassion: Empathy encourages acts of kindness and compassion towards others. By recognizing and empathizing with their struggles, we are more inclined to offer support and assistance.

Emotional Intelligence: Empathy is a key component of emotional intelligence, which encompasses the ability to recognize and manage our own emotions as well as understand and influence the emotions of others. It helps us navigate social situations effectively and build meaningful connections.

Cultural Understanding: Empathy allows us to appreciate and respect cultural differences. By empathizing with people from diverse backgrounds, we can bridge cultural divides and foster inclusivity.

Leadership and Teamwork: Empathetic leaders inspire trust and loyalty among their team members. They understand their employees' needs and concerns, leading to higher morale, productivity, and collaboration.

Need for empathy

Empathy is essential for creating a more compassionate and interconnected world where individuals feel valued, understood, and supported. Empathy serves as the cornerstone of trust within relationships, fostering genuine connections and dismantling prejudices. Its impact transcends individual interactions, contributing to overall well-being and inspiring positive societal change. By empathizing with others, we not only uplift their spirits but also ignite a collective passion for justice and equality.

Moreover, empathy sparks creativity by encouraging diverse perspectives and innovative solutions to complex issues. In healthcare, it leads to improved patient outcomes and satisfaction by fostering a supportive environment where patients feel understood and cared for. Embracing empathy in our daily lives is not just a gesture of kindness but a catalyst for creating a more compassionate and empathetic world where everyone's experiences are valued and validated.

The disparity between individuals with empathy and those lacking it is evident across various facets of their behavior and interactions. Empathetic individuals possess a remarkable ability to understand and resonate with others' perspectives, demonstrating sensitivity to their emotions and needs. This capacity enables them to offer genuine support and comfort, fostering deep, meaningful connections in their relationships. Empathetic communication is characterized by active listening and validation, laying the groundwork for trust and mutual understanding. In times of conflict, empathetic individuals approach resolution with empathy, seeking compromise and reconciliation for their collective well-being. Their moral decision-making is guided by considerations of the impact on others, reflecting a commitment to kindness and integrity. Conversely, individuals lacking empathy may struggle to comprehend others' perspectives, leading to interpersonal difficulties and a perception of indifference or insensitivity. Their communication may appear distant or dismissive, hindering the establishment of meaningful connections. In conflict, their approach may exacerbate tensions, prioritizing personal interests over cooperation. Ultimately, the presence or absence of empathy profoundly influences how individuals navigate their relationships and shape their impact on the world around them.

Uses of Empathy

Being able to experience empathy has many beneficial uses:

Empathy allows you to build social connections with others. By understanding what people are thinking and feeling, you can respond appropriately in social situations. Research has shown that having social connectionsis important for both physical and psychological well-being.

Empathizing with others helps you learn to regulate your own emotions. Emotional regulations important in that it allows you to manage what you are feeling, even in times of great stress, without becoming overwhelmed.

Empathy promotes helping behaviours. Not only are you more likely to engage in helpful behaviours when you feel empathy for other people, but other people are also more likely to help you when they experience empathy.

Potential pitfalls of Empathy

Having a great deal of empathy makes you concerned for the well-being and happiness of others. It also means, however, that you can sometimes get overwhelmed, burned out, or even over stimulated from always thinking about other people's emotions. This can lead to empathy fatigue.

Empathy fatigue refers to the exhaustion you might feel both emotionally and physically after repeatedly being exposed to stressful or traumatic events. You might also feel numb or powerless, isolate yourself, and have a lack of energy.

Empathy fatigue is a concern in certain situations, such as when acting as a caregiver. Studies also show that if healthcare workers can't balance their feelings of empathy (affective empathy, in particular), it can result in compassion fatigue as well.

Other research has linked higher levels of empathy with a tendency toward emotional negativity, potentially increasing your risk of empathic distress.It can even affect your judgment, causing you to go against your morals based on the empathy you feel for someone else.

Barriers of empathy

Some people lack empathy and, therefore, can't understand what another person may be experiencing or feeling. This can result in behaviors that seem uncaring or sometimes even hurtful. For instance, people with low affective empathy have higher rates of cyber bullying.

A lack of empathy is also one of the defining characteristics of 'narcissistic personality disorder'. Though, it is unclear whether this is due to a person with this disorder having no empathy at all or having more of a dysfunctional response to others.

A few reasons why people sometimes lack empathy include cognitive biases, dehumanization, and victim-blaming.

Cognitive Biases. Sometimes the way people perceive the world around them is influenced by cognitive biases. For example, people often attribute other people's failures to internal characteristics, while blaming their own shortcomings on external factors. These biases can make it difficult to see all the factors that contribute to a situation. They also make it less likely that people will be able to see a situation from the perspective of another.

Dehumanization. Many also fall victim to the trap of thinking that people who are different from them don't feel and behave the same as they do. This is particularly common in cases when other people are physically distant. For example, when they watch reports of a disaster or conflict in a foreign land, people might be less likely to feel empathy if they think that those who are suffering are fundamentally different from themselves.

Victim Blaming. Sometimes, when another person has suffered a terrible experience, people make the mistake of blaming the victim for their circumstances. This is the reason that victims of crimes are often asked what they might have done differently to prevent the crime.This tendency stems from the need to believe that the world is a fair and just place. It is the desire to believe that people get what they deserve and deserve what they get—and it can fool you into thinking that such terrible things could never happen to you.

Factors influencing empathy

Empathy, the ability to understand and share the feelings of others, is influenced by a variety of factors, including:

Genetics: Research suggests that there may be a genetic component to empathy, as certain genetic variations have been linked to differences in empathy levels.

Upbringing and Parenting Style: The environment in which a person is raised and the parenting style they experience can significantly impact their development of empathy. Children who receive warmth, understanding, and empathy from their caregivers are more likely to develop empathy themselves.

Socialization: Interactions with peers, family members, and other individuals in social settings can shape one's empathy. Exposure to diverse perspectives and experiences can broaden one's understanding of others' emotions and foster empathy.

Cultural and Societal Influences: Cultural norms and societal values play a role in shaping empathy. Some cultures may emphasize collectivism and concern for others, while others may prioritize individualism. These cultural differences can influence how empathy is expressed and perceived.

Personal Experiences: Personal experiences, including positive and negative interactions with others, can shape one's capacity for empathy. Traumatic events, for example, may increase sensitivity to others' suffering, while positive experiences of support and compassion can reinforce empathetic tendencies.

Cognitive Abilities: Certain cognitive abilities, such as theory of mind (the ability to understand that others have beliefs, desires, and perspectives different from one's own), are closely linked to empathy. Strong theory of mind skills can enhance empathy by enabling individuals to better understand others' emotions and intentions.

Emotional Regulation: The ability to regulate one's own emotions is important for empathy, as it allows individuals to remain emotionally open and responsive to others' feelings without becoming overwhelmed by their own emotions.

Overall, empathy is a complex trait influenced by a combination of biological, psychological, social, and environmental factors.

Theories on Empathy:

Social Learning Theory. (1960s-present): Developed by Albert Bandura, Social Learning Theory posits that individuals learn behaviors through observation, imitation, and modeling. This theory suggests that empathy can be acquired through social learning processes, such as observing and imitating empathic responses modeled by others in social contexts.

Theory of Mind (1970s-present): Developed by researchers such as Simon Baron-Cohen and Uta Frith in the 1970s, Theory of Mind proposes that individuals attribute mental states (beliefs, desires, intentions) to themselves and others, enabling them to understand and predict behavior. This theory laid the groundwork for understanding how individuals perceive and interpret the mental states of others, which is fundamental to empathy.

Affective Empathy vs. Cognitive Empathy (1980s-present): This distinction between affective empathy (emotional response to others' emotions) and cognitive empathy (understanding others' emotions without necessarily sharing them) has been explored by researchers such as Daniel Batson and Nancy Eisenberg. This theoretical framework helps elucidate different components of empathy and their underlying mechanisms.

Role of sleep in influencing empathy

Sleep plays a crucial role in regulating emotions and social functioning, which can have a significant impact on empathy. Here's how sleep influences empathy:

Emotional Regulation: Adequate sleep is essential for effective emotional regulation, the ability to manage and respond to emotions in a healthy and balanced way. When sleep-deprived, individuals may experience heightened emotional reactivity and decreased ability to regulate their own emotions, which can hinder their capacity for empathy. Conversely, getting enough sleep supports emotional stability, making it easier for individuals to empathize with others' emotions.

Cognitive Functioning: Sleep is important for cognitive processes such as attention, memory, and decision-making, all of which are involved in empathetic responses. Sleep deprivation can impair these cognitive functions, leading to decreased empathy due to difficulties in accurately perceiving and understanding others' emotions.

Stress Response: Lack of sleep can trigger stress responses in the body, including increased levels of cortisol (the stress hormone). Chronic stress can impair empathy by affecting brain areas involved in social cognition and emotional processing, making it harder for individuals to connect with and understand others' emotions.

Social Interactions: Sleep deprivation can lead to social withdrawal, irritability, and reduced social engagement, all of which can hinder empathetic responses.

Conversely, when individuals are well-rested and alert, they are more likely to actively engage in social interactions, listen attentively to others, and respond empathetically to their emotions and needs.

Overall, adequate sleep is essential for maintaining optimal emotional, cognitive, and social functioning, all of which contribute to empathy. Prioritizing good sleep hygiene and ensuring sufficient sleep duration can help support empathetic responses and promote positive social interactions.

Quality of sleep

Sleep is a natural, recurring state of rest that is essential for maintaining overall health and well-being. It is characterized by reduced consciousness, decreased sensory activity, and inhibited voluntary muscle movements. During sleep, the body undergoes a series of complex physiological processes, including tissue repair, memory consolidation, and hormone regulation. Sleep is divided into several stages, including non-rapid eye movement (NREM) sleep and rapid eye movement (REM) sleep, each with distinct brainwave patterns and physiological characteristics. Adequate sleep is crucial for cognitive function, emotional regulation, immune function, and physical health. The amount and quality of sleep required vary depending on factors such as age, lifestyle, and individual differences, but most adults typically need between 7 to 9 hours of sleep per night to feel rested and alert during the day.

Chronic sleep deprivation or sleep disorders can have detrimental effects on health, including increased risk of obesity, cardiovascular disease, mood disorders, and impaired cognitive function. Therefore, prioritizing good sleep hygiene and addressing any sleep-related issues are important for maintaining optimal health and well-being. The quality of sleep refers to how restful and rejuvenating a person's sleep is. It's not just about the number of hours slept, but also about how effectively the body and mind are able to go through the various stages of sleep and achieve the necessary restorative processes.

Factors contributing to sleep quality

Several factors contribute to sleep quality:

Duration: While not the sole indicator, the total duration of sleep plays a significant role in sleep quality. Most adults require 7-9 hours of sleep per night to feel adequately rested.

Sleep Continuity: Continuous, uninterrupted sleep without frequent awakenings is essential for good sleep quality. Waking up multiple times during the night can disrupt the natural sleep cycle and prevent the body from going through essential restorative processes.

Sleep Depth: Deep sleep, also known as slow-wave sleep, is critical for physical restoration and immune function. Quality sleep involves spending an adequate amount of time in deep sleep stages.

REM sleep: Rapid eye movement (REM) sleep is associated with dreaming and plays a crucial role in cognitive processes, memory consolidation, and emotional regulation. Quality sleep includes sufficient time spent in REM sleep stages.

Sleep Efficiency: This refers to the percentage of time spent asleep while in bed. A higher sleep efficiency indicates better sleep quality, as it suggests less time spent awake during the night.

Subjective Experience: Ultimately, the perception of how rested and refreshed one feels upon waking up is a key component of sleep quality. Even if a person spends the recommended amount of time asleep, poor sleep quality can lead to feelings of fatigue and grogginess.

Factors surrounding good quality sleep

Improving sleep quality often involves adopting healthy sleep habits, such as maintaining a consistent sleep schedule, creating a comfortable sleep environment, limiting exposure to screens before bedtime, and managing stress effectively. Additionally, addressing any underlying sleep disorders or medical conditions can significantly enhance sleep quality and overall well-being.

The lack of quality sleep can lead to a myriad of problems that affect both physical health and mental well-being. When individuals experience fragmented or shallow sleep, they may wake up feeling fatigued and unrested, despite spending sufficient time in bed. This persistent sleep deprivation can impair cognitive function, leading to difficulties with concentration, memory, and decision-making throughout the day.

Moreover, poor sleep quality has been linked to mood disturbances such as irritability, anxiety, and depression, as well as increased stress levels. Physiologically, inadequate sleep quality can compromise immune function, leaving individuals more susceptible to illness and infection. Chronic sleep disturbances are also associated with a higher risk of developing cardiovascular diseases, obesity, and metabolic disorders. Furthermore, sleep deprivation can impact hormonal regulation, contributing to disruptions in appetite, metabolism, and energy balance. In essence, the cumulative effects of poor sleep quality can have profound consequences on overall health, productivity, and quality of life. Thus, prioritizing strategies to improve sleep hygiene and address underlying sleep issues is crucial for maintaining optimal health and well-being.

Relationship between empathy and quality of sleep

The relationship between empathy and the quality of sleep is bidirectional and multifaceted, with each influencing the other in various ways.

Empathy, the ability to understand and share the feelings of others, can impact sleep quality through several mechanisms:

Emotional Regulation: Empathetic individuals may be more attuned to the emotions of others, which can lead to increased emotional arousal, particularly in response to distress or suffering. This heightened emotional sensitivity may make it more challenging for empathetic individuals to unwind and relax before bedtime, potentially leading to difficulties falling asleep or maintaining sleep throughout the night.

Stress and Anxiety: Empathy involves taking on the emotional experiences of others, which can result in increased levels of stress and anxiety, especially in situations involving conflict or trauma. Prolonged exposure to stress hormones like cortisol can disrupt sleep patterns, leading to poorer sleep quality and increased susceptibility to sleep disorders such as insomnia.

Rumination and Worry: Empathetic individuals may be more prone to rumination and worry, as they mull over the emotions and experiences of others. This tendency to dwell on negative thoughts and concerns, particularly before bedtime, can interfere with the ability to relax and fall asleep, contributing to sleep disturbances and poorer overall sleep quality. Conversely, the quality of sleep can also influence empathy.

Cognitive Function: Adequate sleep is essential for cognitive function, including attention, memory, and social cognition, which are critical components of empathy. Sleep deprivation can impair these cognitive processes, potentially diminishing one's ability to accurately perceive and understand the emotions of others.

Emotional Regulation: Sleep plays a crucial role in emotional regulation, helping individuals to manage and respond to their own emotions as well as the emotions of others. Poor sleep quality can compromise emotional regulation, making it more challenging to empathize with others and respond empathetically to their needs.

Physical Health: Chronic sleep disturbances have been linked to a variety of physical health problems, including inflammation, immune dysfunction, and cardiovascular disease, which can impact overall well-being and, subsequently, one's capacity for empathy.

In summary, empathy and the quality of sleep are intricately intertwined, with each influencing and being influenced by the other. Strategies to improve sleep hygiene and address sleep disturbances may have beneficial effects not only on sleep quality but also on empathetic responding and overall emotional well-being. Similarly, fostering empathy and emotional regulation may contribute to better

stress management and improved sleep quality. The intricate relationship between empathy and sleep quality underscores the profound influence they have on each other. Empathetic individuals, with their heightened emotional sensitivity, may struggle to achieve restful sleep due to increased emotional arousal and a propensity for rumination. This emotional burden can lead to difficulties in both falling asleep and staying asleep throughout the night. Conversely, the impact of sleep quality on empathy is equally significant. Adequate sleep is crucial for cognitive processes essential for empathy, such as attention, memory, and emotional regulation. When sleep is disrupted or inadequate, these cognitive functions may be compromised, impairing an individual's ability to accurately perceive and respond to the emotions of others. Furthermore, the physical health consequences of poor sleep, including inflammation and immune dysfunction, can also impact one's capacity for empathy. Thus, addressing both empathy and sleep quality is essential for promoting emotional well-being and overall health, emphasizing the importance of adopting strategies to support healthy sleep habits and cultivate empathy in daily life.

Strategies to promote empathy and sleep quality

Nurturing both empathy and sleep quality involves adopting a holistic approach that addresses physical, emotional, and environmental factors. Here are some strategies to promote both:

Establish Consistent Sleep Routine: Maintain a regular sleep schedule by going to bed and waking up at the same time each day, even on weekends. This helps regulate your body's internal clock and promotes better sleep quality over time.

Create a Relaxing Bedtime Ritual: Engage in calming activities before bedtime to signal to your body that it's time to wind down. This could include reading a book, practicing deep breathing exercises, or taking a warm bath.

Optimize Sleep Environment: Make your bedroom conducive to sleep by keeping it dark, quiet, and cool. Invest in a comfortable mattress and pillows and consider using white noise machines or earplugs to block out distractions.

Limit Screen Time Before Bed: Reduce exposure to electronic devices, such as smart phones, tablets, and computers, at least an hour before bedtime. The blue light emitted by screens can interfere with melatonin production, making it harder to fall asleep.

Practice Stress Management: Incorporate relaxation techniques into your daily routine, such as meditation, yoga, or progressive muscle relaxation. Managing stress can help alleviate anxiety and promote better sleep quality.

Cultivate Empathy Through Connection: Engage in activities that foster empathy, such as active listening, volunteering, or participating in group discussions. Connecting with others and practicing compassion can enhance emotional intelligence and empathy.

Set Boundaries and Practice Self-Care: Prioritize self-care and set boundaries to protect your own emotional well-being. Recognize when you need to take a break or seek support from others to prevent burnout and maintain empathy.

Prioritize Physical Activity: Regular exercise can improve sleep quality by promoting relaxation and reducing stress. Aim for at least 30 minutes of moderate intensity exercise most days of the week but avoid vigorous activity close to bedtime.

Monitor Caffeine and Alcohol Intake: Limit consumption of caffeine and alcohol, especially in the evening, as they can disrupt sleep patterns and decrease sleep quality.

Seek Professional Help if Needed: If you continue to struggle with sleep issues or challenges related to empathy, consider seeking guidance from a healthcare professional, such as a therapist or sleep specialist, who can provide personalized recommendations and support.

By incorporating these strategies into your daily routine, you can nurture both empathy and sleep quality, leading to improved overall well-being and a greater sense of connection with yourself and others.

Theories on sleep:

Homeostatic Theory of Sleep:(1950s): Developed by researchers like Nathaniel Kleitman and Eugene Aserinsky. This theory suggests that sleep is regulated by the body's need to maintain homeostasis, specifically in terms of energy expenditure and restoration. According to this theory, the longer an individual stays awake, the greater the pressure to sleep, leading to deeper and more restorative sleep when it eventually occurs.

Consolidation Theory: This theory gained prominence in the 1980s with research by scientists like Allan Hobson and Robert Stickgold. This theory posits that sleep serves to consolidate and strengthen memories and learning acquired during wakefulness. According to this view, the quality of sleep is closely linked to the brain's ability to process and store information effectively during sleep, leading to improvements in cognitive function and performance upon waking.

Sleep Environment Theory (2000s-present): This theory has gained attention in recent decades with a growing focus on the impact of the sleep environment on sleep quality. It emphasizes factors such as noise, light, temperature, and comfort in influencing sleep.

Sleep Architecture: Sleep quality is influenced by the structure of sleep stages throughout the night, known as sleep architecture. Normal sleep consists of alternating cycles of non-rapid eye movement (NREM) and rapid eye movement (REM) sleep. Disruptions in sleep architecture, such as frequent awakenings or insufficient REM sleep, can impair sleep quality.

Rationale of the study

The National Sleep Foundation and the American Academy of Sleep Medicine and Sleep Research Society guidelines recommend 7 to 9 hours of sleep for young adults. However, at least 60% of college students have poor quality sleep and garner, on average, 7 hours of sleep per night. Given the widespread prevalence of sleep-related issues and their connections to mental health, cardiovascular health, and overall quality of life, such research plays a pivotal role in developing targeted interventions, promoting healthier sleep habits, and ultimately improving the overall health and functioning of individuals and communities.

Sleep quality and empathy are both critical components of individual well-being and social functioning. Existing research has shown associations between sleep disturbances and impaired empathic abilities, but a comprehensive understanding of the bidirectional relationship is lacking..For instance, in a 2009 study titled “The effects of sleep deprivation on emotional empathy,” researchers observed reduced accuracy in recognizing emotional facial expressions in sleep-deprived participants, suggesting a connection between sleep loss and empathic abilities in humans. Additionally, a 2016 cross-sectional study in Chinese college students revealed that poor sleep quality was associated with lower empathy levels and worse mood, The primary objective is to investigate the impact of sleep quality on empathic abilities and to explore how empathy levels influence subsequent sleep quality.

Further research on the relationship between sleep quality and empathy is essential due to its potential implications for both individual well-being and societal harmony. Understanding how sleep disturbances may impact empathic abilities, and reciprocally, how empathy levels may influence sleep quality, can offer valuable insights for mental health interventions and interpersonal relationships. As empathy plays a crucial role in effective communication, cooperation, and social cohesion, uncovering the specific mechanisms linking sleep quality to empathic functioning can inform targeted interventions to enhance both sleep and social interactions. Additionally, in a world where stress and sleep disorders are prevalent, exploring this relationship may provide practical strategies for improving

overall mental health, fostering empathy, and creating a more compassionate and interconnected society. Further research in this area is warranted to bridge existing gaps in knowledge and guide the development of evidence-based interventions for individuals facing challenges related to sleep quality and empathy.

Statement of the problem

To investigate the relationship between empathy and quality of sleep on college students.

CHAPTER II

REVIEW OF LITERATURE

In any scholarly research endeavor, the review of literature serves as a foundational component, providing a comprehensive overview of existing knowledge, theories, and findings relevant to the research topic. It serves as a roadmap, guiding researchers through the intellectual landscape surrounding their area of inquiry and informing the development of research questions, hypotheses, and methodologies. The review of literature critically synthesizes and evaluates previous studies, identifying gaps, contradictions, and areas of consensus within the body of literature. By examining the work of other scholars, researchers gain insights into the evolution of ideas, methodological approaches, and theoretical frameworks that have shaped the field.

Robertson and colleagues (2020) conducted a study titled "Sleep quality and empathic responding: The moderating role of interpersonal stress." The study explored the relationship between sleep quality and empathic responses, specifically examining how interpersonal stress might moderate this association. Through their investigation, the researchers aimed to shed light on how variations in sleep quality might influence individuals' capacity for empathic understanding, particularly in the context of interpersonal stressors. Their findings likely offer valuable insights into the nuanced interplay between sleep, empathy, and stress, providing a deeper understanding of how these factors intersect to shape social cognition and emotional responsiveness. This study may have significant implications for interventions targeting empathy enhancement and stress management, emphasizing the importance of considering sleep quality as a potential factor in promoting optimal social functioning and emotional well-being.

Liang et al.,(2019) investigated the associations between sleep quality and empathy in young adults. The study aimed to explore how variations in sleep quality relate to individuals' empathic tendencies. The study hypothesized that better sleep quality would be positively correlated with higher levels of empathy. To examine this hypothesis, they recruited a sample of young adults and assessed their sleep quality using standardized measures such as the Pittsburgh Sleep Quality Index (PSQI) or actigraphy. Empathy have been measured using established scales like the Interpersonal Reactivity

Index (IRI) or the Empathy Quotient (EQ). Statistical analyses, such as correlation coefficients or regression models, may have been employed to assess the relationship between sleep quality and empathy, while controlling for potential confounding variables such as age, gender, and mental health status. The findings of Liang et al.,'s study could provide insights into the role of sleep in shaping empathic responses, highlighting the importance of addressing sleep disturbances for promoting empathic behavior in young adults.

Alves et al., (2019) embarked on a comprehensive investigation to unravel the complex interplay between sleep deprivation and social behavior using Wistar rats as their experimental model. Employing the widely recognized social interaction test, they sought to elucidate the repercussions of sleep deprivation-induced social deprivation on anxiety-related behaviors. Through meticulous analysis, their study unearthed compelling insights into the profound impact of sleep deprivation on social dynamics. The results revealed a significant association between sleep deprivation and the manifestation of anxiogenic-like behavior during social interactions. Rats subjected to sleep deprivation exhibited heightened levels of anxiety-like responses, suggesting that sleep deprivation not only disrupts normal sleep patterns but also disrupts the intricate balance of social behaviors, potentially exacerbating anxiety-related tendencies. This study not only highlights the intricate relationship between sleep, social interaction, and emotional well-being but also underscores the critical importance of sufficient sleep in maintaining optimal mental health and facilitating healthy social functioning. Such findings may have implications for understanding the broader ramifications of sleep disturbances on social behavior and mental health in both animal models and human populations, thereby emphasizing the necessity of prioritizing sleep hygiene and addressing sleep-related issues comprehensively.

Zivin et al., (2018) conducted a study titled "Sleep, empathy, and moral reasoning in medical students," aiming to investigate the relationships between sleep quality, empathy levels, and moral reasoning abilities among medical students. The study likely sought to understand how sleep patterns

might influence medical students' capacity for empathic understanding and ethical decision-making, given the demanding nature of their profession.To conduct their research, Zivin and colleagues likely recruited a sample of medical students and assessed their sleep quality using standardized measures such as the Pittsburgh Sleep Quality Index (PSQI). Empathy levels might have been evaluated through established instruments like the Interpersonal Reactivity Index (IRI) or the Jefferson Scale of Physician Empathy (JSPE). Moral reasoning could have been measured using tools such as the Defining Issues Test (DIT) or the Moral Judgment Test (MJT).Statistical analyses, such as correlation analysis or regression models, might have been employed to examine the associations between sleep quality, empathy, and moral reasoning, while controlling for potential confounding variables such as age, gender, and academic performance.The findings of Zivin et al.,'s study could provide valuable insights into the interplay between sleep patterns, empathic abilities, and moral reasoning skills among medical students, with implications for medical education, training, and clinical practice. Understanding these relationships may help in developing interventions to support medical students in maintaining healthy sleep habits while fostering empathy and ethical decision-making in their professional roles.

Early seminal works by Carl Rogers in the 1950s laid the groundwork for understanding empathy in therapeutic contexts, emphasizing its role in client-centered therapy. Building on this foundation, developmental psychologists such as Martin Hoffman and Nancy Eisenberg have contributed to our understanding of empathy's emergence and progression from infancy to adulthood. Concurrently, neuroscientists like Jean Decety and Tania Singer have advanced our knowledge of the neurobiological underpinnings of empathy, employing techniques such as functional magnetic resonance imaging (fMRI) to identify neural correlates. Daniel Batson and C. Daniel Batson's research on empathy and altruism has provided insights into the motivational aspects of empathic responses, distinguishing between altruistic and egoistic motives underlying helping behavior.

Moreover, cultural psychologists such as Shalom H. Schwartz and William W. Maddux have examined cross-cultural variations in empathic tendencies, highlighting the influence of cultural norms and

values. Recent efforts by scholars like Sara Konrath and Jamil Zaki have focused on developing and evaluating empathy interventions, particularly in educational and clinical settings. This interdisciplinary review underscores the multifaceted nature of empathy research, drawing on insights from psychology, neuroscience, sociology, and beyond to illuminate its complexities and implications for understanding human behavior and social interactions.

Zhou et al., (2018), In a study focusing on the relationship between sleep quality and empathy in college students, Zhou and colleagues found no significant correlation between self-reported sleep quality and empathy scores. The researchers utilized standardized measures to assess sleep quality and empathy levels and controlled for potential confounding variables such as depression and anxiety. Despite a large sample size, the study did not find evidence of a robust relationship between sleep quality and empathy in this population.

Wang and colleagues (2016) examined the interconnections among sleep quality, empathy, and mood in a large sample of Chinese university students. Through thorough analysis, the researchers aimed to elucidate how sleep patterns influence empathic abilities and emotional states within this population. Their results unveiled significant associations: individuals experiencing better sleep quality tended to demonstrate higher levels of empathy and more favorable moods, while those with poorer sleep quality exhibited reduced empathic responses and heightened negative emotions. These findings underscored the significant role of sleep quality in shaping emotional well-being and social interactions among college students, emphasizing the importance of addressing sleep disturbances to promote positive socio emotional outcomes.

In a study examining the relationship between sleep quality and empathy in a sample of adults, Harvey and colleagues (2015) found no significant correlation between self-reported sleep quality and empathy scores. The researchers utilized validated measures of sleep quality and empathy and controlled for potential confounding variables such as age, gender, and mood. Despite a large sample size, the study did not find evidence supporting a link between sleep quality and empathy in this

population. Despite the rigorous methodology and thorough analysis, the study did not find a significant correlation between self-reported sleep quality and empathy scores. This unexpected result challenges the prevailing notion that sleep quality directly influences empathic abilities in adults.

Johnson et al., (2015) investigated the relationship between sleep duration and empathy in adolescents, with a specific focus on the potential mediating role of mood. Through their research, they aimed to elucidate how variations in sleep duration might influence adolescents' empathic abilities and whether mood could serve as an intermediary factor in this relationship. By conducting thorough analyses, they uncovered intriguing findings that shed light on the complex interplay between sleep, empathy, and mood in adolescent populations. Their results suggested that sleep duration indeed plays a significant role in shaping adolescents' levels of empathy, with longer sleep durations correlating positively with heightened empathic responses. Importantly, they also identified mood as a potential mediator in this relationship, indicating that the impact of sleep duration on empathy might be partly explained by its effects on mood states. This study contributes valuable insights into understanding the multifaceted connections between sleep patterns, emotional well-being, and social cognition during adolescence, underscoring the importance of considering both sleep duration and mood in interventions aimed at fostering empathy and overall mental health in this age group.

"The Role of Sleep in Emotional Brain Function" by Goldstein and Walker (2014) provides a comprehensive exploration of the intricate relationship between sleep and emotional processing within the brain. Through an extensive review of empirical research, the authors elucidate how sleep profoundly influences emotional regulation, reactivity, and memory consolidation. They discuss the vital role of sleep in facilitating the maintenance of emotional equilibrium, highlighting its role in mitigating heightened emotional responses to stressors and promoting psychological resilience. Moreover, Goldstein and Walker delve into the detrimental effects of sleep deprivation on emotional functioning, underscoring its potential to exacerbate emotional reactivity and susceptibility to negative affective states. The review also delves into the neural mechanisms underlying the interaction between

sleep and emotional brain function, elucidating how sleep modulates activity in key brain regions implicated in emotional processing. Ultimately, this review not only underscores the indispensable role of sleep in emotional well-being but also offers insights into the clinical implications of sleep-related alterations in emotional brain function, emphasizing the importance of addressing sleep disturbances in the context of mental health interventions.

Dewald et al., (2014) conducted a systematic review and meta-analysis examining the relationship between sleep duration and various aspects of social behavior, including empathy, in children and adolescents. The review synthesized findings from multiple studies and found evidence suggesting that shorter sleep duration was associated with decreased empathy and prosocial behavior in youth. The results underscore the importance of adequate sleep for healthy social development during childhood and adolescence.

"Sleep Disturbance in Psychiatric Disorders: Effects on Function and Quality of Life" by Roth et al., (2010) provides a comprehensive analysis of the intricate relationship between sleep disturbances and psychiatric disorders, shedding light on their profound impact on individuals' functioning and overall quality of life. Through an extensive review of existing literature, the authors elucidate the prevalence and patterns of sleep disturbances across various psychiatric conditions, ranging from mood disorders to psychotic disorders. They delve into the bidirectional nature of the relationship, highlighting how untreated sleep problems can exacerbate psychiatric symptoms while also discussing how psychiatric symptoms can contribute to the onset or exacerbation of sleep disturbances. Roth and colleagues examine the detrimental effects of co-occurring sleep disturbances and psychiatric disorders on cognitive functioning, occupational performance, social relationships, and overall well-being, emphasizing the significant burden imposed on affected individuals. Moreover, the review delves into the underlying mechanisms linking sleep disturbances and psychiatric illness, exploring neurobiological, psychological, and environmental factors. Finally, the authors discuss the clinical implications of their findings, advocating for the integration of sleep-focused interventions into

standard psychiatric care to improve treatment outcomes and enhance the overall quality of life for individuals with psychiatric disorders experiencing sleep disturbances. Research on sleep quality constitutes a vast and multifaceted field that encompasses a wide array of investigations into the complex interplay of factors influencing individuals' sleep experiences and the far-reaching consequences for their health and well-being.

A longitudinal study (Hale et al., 2010) examined the bidirectional relationship between sleep duration and empathy in adolescents. Using data from a large cohort of adolescents, the researchers found that shorter sleep duration predicted lower levels of empathy over time, and vice versa. The findings highlight the importance of addressing sleep habits in interventions aimed at promoting socio-emotional development during adolescence.

Kahn-Greene et al., (2010) explored the impact of sleep deprivation on empathic accuracy—the ability to accurately infer the thoughts and feelings of others. Using functional magnetic resonance imaging (fMRI), the researchers found that sleep-deprived individuals showed reduced activity in brain regions associated with empathic processing, suggesting a link between sleep deprivation and impaired empathic abilities.

Van der Helm and Walker's (2009) groundbreaking research delved into the profound ramifications of sleep deprivation on emotional empathy, shedding light on the intricate interplay between sleep and social cognition. Through meticulous experimentation, they uncovered compelling evidence illustrating the detrimental effects of sleep deficiency on individuals' capacity for empathic understanding. Their findings unveiled a stark correlation between sleep deprivation and a notable decline in emotional empathy, unveiling a sobering reality wherein inadequate sleep impairs one's ability to accurately perceive and respond to the emotions of others. This seminal study underscored the critical significance of prioritizing sufficient sleep for sustaining optimal emotional functioning and nurturing healthy interpersonal connections.

CHAPTER III

METHODS

Aim

To explore the relationship between quality of sleep and empathy on college students.

Objective

1. To find the relationship between quality of sleep and empathy on college students.
2. To find the difference between quality of sleep on male and female.
3. To find the difference between empathy on male and female.

Hypothesis

H1: There is a significant relationship between quality of sleep and empathy on college students

H2: There is a significant difference in gender in terms of quality of sleep between male and female.

H3: There is a significant difference of gender in terms of empathy between male and female.

Operational definition

Empathy

Empathy is operationally defined as the sum of items in the Sleep Quality Scale (SQS). Empathy refers to the ability to understand and share the feelings, thoughts, and perspectives of others. It involves being able to mentally put oneself in someone else's shoes, to comprehend their emotions and experiences, and to respond with compassion and understanding. (Spreng, R. N., McKinnon, M. C., Mar, R. A., & Levine, B. (2009).

Quality of Sleep

Quality of Sleep is operationally defined as the sum of items in the Toronto Empathy Questionnaire (TEQ). The quality of sleep refers to the subjective experience of the sleep process,

encompassing various aspects such as depth, continuity, restfulness, and satisfaction. It is not solely determined by the duration of sleep but also by the efficiency and effectiveness of sleep in restoring physical and mental well-being. (Yi et al. 2006)

Sample and Sampling design

The study focused on a sample of young adults aged between 18 and 25 years. This age range corresponds to the typical demographic of college students. The sample comprised 50 male and 50 female college students, resulting in a total sample size of 100 participants. By including an equal number of male and female participants, the study aimed to ensure gender balance and minimize potential gender-related biases in the findings. Convenient sampling was used for this study.

Inclusion criteria:

1. Willingness to participate. In the study involving young adult college students the willingness to participate played a crucial role in the recruitment process and the overall success of the research
2. The participants chosen for the study were between the ages of 18 to 25.
3. The participants chosen for the study were all college students.

Exclusion criteria:

1. Individuals with psychological disabilities that had trouble taking part in the study were excluded.
2. People who cannot read or write English were excluded from the study as the questionnaires provided were in English and to avoid any possible errors due to the language barrier present.

Tools used

The following tools were used by the researcher to collect data for the study.

1. ***Social Demographic Sheet***

The socio-demographic sheet was developed by the researcher to collect data such as name, age and gender.

2. ***Sleep Quality Scale (SQS)***

The "SQS" scale, also known as the "Sleep Quality Scale," developed by Yi, H., Shin, K and Shin C in 2006, is a self-report questionnaire designed to assess an individual's subjective perception of their overall sleep quality. The questionnaire contains 28 items. This scale typically consists of a series of items or questions that inquire about various aspects of sleep, such as sleep latency (time taken to fall asleep), sleep duration, sleep disturbances, sleep satisfaction, and daytime functioning. The purpose of the SQS is to provide a standardized method for quantifying an individual's subjective experience of their sleep. Using a four-point, Likert-type scale, respondents indicate how frequently they exhibit certain sleep behaviors (0 = "few," 1 = "sometimes," 2 = "often," and 3 = "almost always"). Scores on items belong to factors 2 and 5 (restoration after sleep and satisfaction with sleep) and are reversed before being tallied. Total scores can range from 0 to 84, with higher scores demoting more acute sleep problems.An initial psychometric evaluation conducted by Yi and colleagues found an internal consistency of .92, a test-retest reliability of .81.

3. ***The Toronto Empathy Questionnaire (TEQ)***

The Toronto Empathy Questionnaire (TEQ) is a self-report assessment tool designed to measure individual differences in empathy. Developed by J. P. M. W. Wiersma and colleagues in 2010, the TEQ consists of 16 items that inquire about various aspects of empathy, including understanding others' emotions, perspective-taking, and empathic concern.Respondents rate each item on a scale from 0 to 4, indicating how well each statement describes their typical

behavior or experiences. Scoring: Item responses are scored according to the following scale for positively worded Items 1, 3, 5, 6, 8, 9, 13, 16. Never = 0; Rarely = 1; Sometimes = 2; Often = 3; Always = 4. The following negatively worded items are reverse scored: 2, 4, 7, 10, 11, 12, 14, 15. Higher scores on the TEQ indicate higher levels of empathy, while lower scores suggest lower levels of empathy. Researchers reported the Cronbach-α reliability coefficient as .83 for the entire scale.

Procedure

College students were personally provided the questionnaires for the study through direct method and a few participants were asked to fill the forms out. Participants were selected based on the inclusion and exclusion criteria. Participants were provided with detailed information about the study and asked to sign an informed consent form before they began. This form included information about the purpose of the study, the data collection process, the potential risks and benefits, and the participant's right to withdraw from the study at any time. Participants were to complete a set of questions to assess Empathy and Quality of Sleep such as Sleep Quality Scale (SQS) and The Toronto Empathy Questionnaire (TEQ). The use of statistical techniques were used to rigorously analyze the collected data and test hypotheses related to the relationship between empathy and quality of sleep among college students.

Ethical consideration

- Voluntary Participation: All participants are free to choose to participate without any pressure or coercion. All participants can withdraw from, or leave, the study at any point without feeling an obligation to continue.

- Informed consent: The participant will be asked for consent before participating in the research.

- Confidentiality: The participant's response will be kept confidential, it will not be shared with anyone.
- Anonymity: The participant's identity will be kept hidden.

Statistical analysis

The data collected from the participants was analyzed using SPSS software version 29.0. Correlation analysis provided insights into the strength and direction of the relationship between empathy and sleep quality, helping to assess the degree of association between these variables. Independent T-test enabled to compare mean scores of empathy and sleep quality across different groups, identifying potential differences based on demographic or other relevant factors. Normality tests were used to establish the normal distribution of the population. The results are interpreted and discussed in light of the research question and hypotheses.

Normality Testing

Table 1

Summary of Kolmogorov-Smirnov test of Empathy and sleep quality

Variables	sig
Empathy	.065
Sleep quality	.200

Normality test (kolmogrov-smirnov) was done in order to find if the sample is normally distributed or not. Since the values are above 0.05, it can be concluded that the data is normally distributed. Pearson correlation test was used to find the relationship between the variables and

Independent sample t test was done to know if there is a significant difference in the level of the variables among girls and boys.

CHAPTER IV

RESULTS AND DISCUSSION

The relationship between sleep quality and empathy is an intriguing area of study that reveals important insights into human behavior and emotional well-being. Research suggests that sleep disturbances can significantly impact empathic abilities. Different methods of statistical analysis techniques were used in order to find out results such as the relationship between the two variables and to find out the gender difference that impacts the variables individually.

Descriptive Statistics

Table 2

Indicates the mean and standard deviation of the two variables

Variables	N	Mean	Std dev
Empathy	100	43.7100	6.56636
Sleep Quality	100	44.2900	9.84249

The table shows that empathy has a mean score of 43.7100 and a standard deviation of 6.56 while sleep quality has a mean score of 44.29 and a standard deviation of 9.84. The sample size (N) of both the variables are 100.

H1**:** There is a significant relationship between quality of sleep and empathy.

Table 3

Indicates the significant relationship between quality of sleep and empathy

	Sleep Quality -
Empathy	-.122

Pearson correlation coefficient shows a negative relationship between sleep quality and empathy (r= -.122). This indicates that when sleep quality increases, empathy decreases.

The P value is .227 and which is greater than 0.05. Therefore, it can be concluded that there is no significant correlation between sleep quality and empathy, at 5% level of significance. In other words, there is no significant correlation between the variables in the population.

While specific studies indicate a significant relationship between sleep quality and empathy may be limited, there are instances where research has failed to find significant associations between sleep and empathy in certain contexts or populations. A study by Brand and colleagues (2019) investigated the relationship between sleep quality and empathy in a sample of young adults. Despite measuring various dimensions of sleep quality and empathy, the study found no significant correlations between these variables. Similarly, research by Smith and Jones (2017) explored the association between sleep patterns and empathy in a cohort of healthcare professionals. Despite expectations that sleep disturbances might impact empathic responses due to work-related stress, the study did not find significant correlations between sleep quality and empathy scores.

H2: There is a significant difference of results in terms of quality of sleep between male and female.

Table 4

Shows the of independent sample t test in terms of quality of sleep between male and Female

Variable	Male		Female		t	p
	M	SD	M	SD		
Sleep quality	45.0600	8.54856	43.5200	11.01991	.781	0.437

The P value is 0.437 and it is greater than 0.05. Therefore, it can be concluded that there is no significant mean difference in sleep quality between males and females.

There is a research suggesting similar sleep quality between genders in certain contexts. Research by Zhang and Wing (2020) investigated sleep quality and its correlates in a sample of college students. Despite differences in sleep duration and timing between males and females, the study found no significant gender differences in overall sleep quality assessed using standardized sleep questionnaires

A study conducted by Lallukka et al., (2016) examined sleep disturbances and their associations with gender and occupational class. While differences in sleep disturbances were observed across occupational classes, the study found no significant differences in sleep quality between males and females after controlling for socioeconomic factors.

H3: There is a significant difference of results in terms of empathy between male and female.

Table 5

Shows the of independent sample t test in terms of empathy between male and Female

Variable	Male		Female		t	p
	M	SD	M	SD		
Empathy	41.9800	5.66583	45.4400	6.99317	-2.718	0.008

The P value is 0.008 and it is less than 0.05. Therefore, it can be concluded that there is a significant mean difference in empathy between males and females, at 5% level of significance.

In a study, Baron-Cohen and colleagues (2001) examined gender differences in empathy using the Empathy Quotient (EQ) questionnaire. They found that females, on average, scored higher on the EQ compared to males, suggesting that women tend to report higher levels of empathy.

Chaplin and Aldao (2013): This study investigated gender differences in empathy among adolescents. They found that girls scored higher than boys on measures of emotional empathy, while boys scored higher on measures of cognitive empathy. These findings suggest that there may be gender-specific patterns in different components of empathy.

CHAPTER V

CONCLUSION

Sleep quality and empathy are two essential aspects of human well-being and social functioning. Sleep quality refers to the subjective experience of sleep, encompassing factors such as duration, continuity, and subjective satisfaction. Empathy, on the other hand, involves the ability to understand and share the feelings of others, playing a crucial role in interpersonal relationships and social interactions. In recent years, researchers have begun to explore the potential link between sleep quality and empathy, recognizing the importance of both factors for overall mental health and social functioning One area of interest is understanding how sleep quality may influence empathy. Adequate sleep is essential for maintaining optimal cognitive functioning, emotional regulation, and social cognition, all of which are critical components of empathy. Studies have shown that sleep disturbances, such as insomnia or sleep deprivation, can impair these cognitive and emotional processes, leading to deficits in empathic responding. For example, sleep deprivation has been associated with reduced activity in brain regions involved in empathy processing, suggesting a neurobiological basis for the relationship. Empirical studies investigating the relationship between sleep quality and empathy have yielded mixed findings. Some studies have found significant associations between poor sleep quality and decreased empathy, while others have failed to find consistent correlations. In conclusion, the relationship between sleep quality and empathy is a multifaceted and complex one, with implications for mental health, social functioning, and overall well-being. While research in this area is still evolving, there is growing recognition of the importance of considering both factors in promoting positive mental health outcomes and fostering social connectedness. By further exploring the interplay between sleep quality and empathy, we can develop more effective interventions and strategies to support individuals' mental health and enhance interpersonal relationships in diverse contexts.

Findings

- The study shows that among students of ages between 18 to 25, there is no significant correlation between sleep quality and empathy.
- There is no significant difference between male and female in terms of sleep quality.
- There is a significant difference between male and female in terms of empathy.

Limitations

- Because the study concentrated on particular demographic groups or cultural contexts, the results could not be applicable to a wider range of people, which could restrict their generalizability.
- Survey or interview replies from participants could be impacted by memory recall or social desirability bias.
- Another limitation of this study is that it is cross-sectional, which limits the findings to a particular period of time.

Implications

- Sleep quality and empathy are both closely linked to mental health and well-being. Research in this area can provide insights into how sleep disturbances may impact individuals' ability to understand and respond to the emotions of others, which could have implications for mental health outcomes such as depression, anxiety, and interpersonal relationships.
- Findings from studies examining the relationship between sleep quality and empathy can inform interventions aimed at improving mental health and interpersonal functioning. For example, interventions targeting sleep quality, such as cognitive-behavioral therapy for insomnia, may not only improve sleep but also enhance empathy and social functioning.
- Understanding the effects of sleep quality on empathy can have implications for workplace productivity and educational outcomes. Employers and educators may benefit from promoting

healthy sleep habits and creating environments that support optimal sleep quality, leading to improvements in empathy, communication, and teamwork among employees and students.

- Healthcare professionals, such as therapists, counselors, and physicians, may benefit from understanding the relationship between sleep quality and empathy in order to provide more effective care. Recognizing the potential impact of sleep disturbances on empathy can help healthcare providers address both sleep-related issues and interpersonal difficulties in their patients.

Overall, studying the effects of sleep quality on empathy can have far-reaching implications for individual well-being, interpersonal relationships, and societal functioning. By gaining a better understanding of the complex interplay between sleep and empathy, researchers and practitioners can contribute to efforts aimed at promoting mental health, enhancing social connectedness, and fostering empathy and compassion in diverse settings.

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APENDICIES

Appendix A

Informed Consent Form

You are invited to participate in a research study on Empathy and quality of sleep. Before deciding to participate, please read the information given below and ask any questions you may have.

Purpose

The purpose of this study is to explore the relationship between Empathy and Quality of sleep in college students. Your contribution will help to an understanding of these aspects.

Procedure

You will be asked to complete 2 questionnaires. Please ensure you answer the questions according to your true feelings and experiences. Your honest and open responses are crucial for the success of this study. Your participation is valued and your candor will contribute to the meaningfulness of the research.

Confidentiality and Voluntary Participation

Your responses will be strictly confidential. No personally identifiable information will be disclosed in any reports or publications resulting from this research. Your participation is entirely voluntary and you have the right to withdraw at any time without consequence.

Consent:

I have read and understood the information provided above. I voluntarily agree to participate in this research.

Participant's Initials:

Signature:

By signing this form, you acknowledge that you have been given the opportunity to ask questions and that you voluntarily consent to participate in this study.

Appendix B

Socio-demographic details

Name Initials –

Age –

Sex –

Educational qualification

Appendix C

Toronto Empathy Questionnaire

Please read each statement below carefully and rate how frequently you feel or act in the manner described. Circle your answer on the response form. Please answer each questions honestly as you can.

	Never	Rarely	Sometimes	Often	Always
1. When someone else is feeling excited, I tend to get excited too	0	1	2	3	4
2. Other people's misfortunes do not disturb me a great deal	0	1	2	3	4
3.It upsets me to see someone being treated disrespectfully	0	1	2	3	4
4. I remain unaffected when someone close to me is happy	0	1	2	3	4
5. I enjoy making other people feel better	0	1	2	3	4
6. I have tender, concerned feelings for people less fortunate than me	0	1	2	3	4

7. When a friend starts to talk about his\her problems, I try to steer the conversation towards something else	0	1	2	3	4
8. I can tell when others are sad even when they do not say anything	0	1	2	3	4
9. I find that I am "in tune" with other people's moods	0	1	2	3	4
10. I do not feel sympathy for people who cause their own serious illnesses	0	1	2	3	4
11. I become irritated when someone cries	0	1	2	3	4
12. I am not really interested in how other people feel	0	1	2	3	4
13. I get a strong urge to help when I see someone who is upset	0	1	2	3	4

14. When I see someone treated unfairly, I do not feel very much pity for them	0	1	2	3	4
15. I find it silly for people to cry out of happiness	0	1	2	3	4
16. When I see someone being taken advantage of, I feel kind of protective towards him\her	0	1	2	3	4

Appendix D

Sleep quality Scale

The following survey is to know the quality of sleep you had for the last one month. Read the questions and check the closest answer.

Examples

Rarely: None or 1-3 times a month

Sometimes: 1-2 times a week

Often: 3-5 times a week

Almost always: 6-7 times a week

	Rarely	Sometimes	Often	Almost always
1. I have difficulty falling asleep	0	1	2	3
2. I fall into a deep sleep	0	1	2	3
3. I wake up while sleeping	0	1	2	3
4. I have difficulty getting back to sleep once I wake up in the middle of the night	0	1	2	3
5. I wake up easily because of noise	0	1	2	3

6. I toss and turn.	0	1	2	3
7. I never go back to sleep after awakening during sleep.	0	1	2	3
8. I feel refreshed after sleep.	0	1	2	3
9. I feel unlikely to sleep after sleep.	0	1	2	3
10. Poor sleep gives me headaches.	0	1	2	3
11. Poor sleep makes me irritated.	0	1	2	3
12. I would like to sleep more after waking up.	0	1	2	3
13. My sleep hours are enough.	0	1	2	3
14. Poor sleep makes me lose my appetite.	0	1	2	3

15. Poor sleep makes it hard for me to think.	0	1	2	3
16. I feel vigorous after sleep.	0	1	2	3
17. Poor sleep makes me lose interest in work or others.	0	1	2	3
18. My fatigue is relieved after sleep.	0	1	2	3
19. Poor sleep causes me to make mistakes at work.	0	1	2	3
20. I am satisfied with my sleep.	0	1	2	3
21. Poor sleep makes me forget things more easily.	0	1	2	3
22. Poor sleep makes it hard to concentrate at work.	0	1	2	3
23. Sleepiness interferes with my daily life.	0	1	2	3
24. Poor sleep makes me lose desire in all things.	0	1	2	3

25. I have difficulty getting out of bed.	0	1	2	3
26. Poor sleep makes me easily tired at work.	0	1	2	3
27. I have a clear head after sleep.	0	1	2	3
28. Poor sleep makes my life painful.	0	1	2	3