Examining the Influence of Gratitude on Sleep Quality Among Young Adult Population: A Scientific Exploration

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Abstract
The study investigates the intricate relationship between gratitude and sleep quality within the young adult population, delving into the realms of positive psychology, diverse cultural perspectives, and the physiological underpinnings of these phenomena. The study also uncovers the cross-cultural relevance of gratitude in influencing sleep quality among young adults.
The methodology employed encompasses a mixed-methods approach, incorporating quantitative surveys to measure gratitude levels and sleep quality. The sample comprises a diverse group of young adults, ensuring the study's applicability across various demographic backgrounds.
The results demonstrate the cross-cultural significance of gratitude in promoting well-being by showing a strong positive connection between gratitude and sleep quality. These results underscore the importance of fostering gratitude as a means to enhance sleep quality among young adults, irrespective of cultural backgrounds.

Introduction

Gratitude, a multifaceted and deeply ingrained human experience, stands at the forefront of positive psychology, capturing the essence of acknowledging and appreciating the positive aspects of life.
Happiness and gratitude go hand in hand, and for good reason. The assertion made by happiness experts and practitioners of positive psychology that raising your level of gratitude will raise your level of life satisfaction is not accidental.

Gratitude and appreciation are related emotions. More precisely, this phenomenon is described by the American Psychological Association (n.d.) as feelings of joy and gratitude in reaction to a fortuitous event or material gift. According to Jans-Beken et al. (2020), gratitude is both a state and a trait. To put it another way, thankfulness can be felt for someone or something at a certain time, but it can also be felt more consistently throughout time as a virtue. Dr. Robert Emmons states that there are two stages to the experience of gratitude (Emmons & McCullough, 2003) Recognizing one's own goodness comes first in life. We say "yes" to life when we are grateful. We declare that life is beneficial overall and has certain aspects that make it worthwhile to live. The recognition that we have been given

something makes us feel good about ourselves, both because of its existence and the thought the giver put into selecting it.
Second, acknowledging the external sources of this kindness is what it means to be grateful. It is possible to feel thankful for the earth, other people, animals, and our creator, but not for oneself. At this point, we are aware of the positive things in our life and the people responsible for them.

Recognizing the goodness in our life and then understanding how this goodness came about are the acknowledgement of the goodness in our lives and the explanation of how this goodness came to be comprise the two phases of gratitude. We come to appreciate the blessings of everything that makes us better people via this process.

Gratitude & Positive Psychology – What is the Connection?

Gratitude and positive psychology, as we already know, it is concerned with good attitudes and actions. Its components include thankfulness, optimism, and hope—you guessed it (Iodice et al., 2021).
Gratitude is a fundamental positive emotion in Seligman's PERMA model, which also covers positive emotion, engagement, relationships, meaning, and achievement (Lianov, 2021). Being grateful makes it easier for people to concentrate on their blessings. Gratitude can lead to hope, life satisfaction, and more proactive behaviors toward others by fostering and preserving relationships with others (Passmore & Oades, 2016). THE ICEBERG OF THANKSGIVING
According to Sansone and Sansone (2010), gratitude is the act of identifying and appreciating the wonderful things that occur.
It has been discovered that social, emotional, and psychological well-being are all positively correlated with gratitude. (Jans-Beken et al., 2020). Trait thankfulness is a significant "predictor of well-being and other desirable life outcomes," thus this is not surprising (Portocarrero et al., 2020, p. 6).
There seems to be a cascading impact of gratitude. A person is more likely to acknowledge assistance and subsequently provide it back if they are feeling grateful (Wood et al., 2010). It is assumed that those who get gratitude are more likely to assist others in the future. Similarly, it's possible that those who don't receive gratitude won't be expected to return the favor later. Expressing thankfulness has advantages for people as well as society (Bono et al., 2004).
Moreover, it is a component of numerous religions. For instance (Oades & Passmore, 2016),
1. Buddhism A sign of the idea of dependent origination is gratitude, It suggests that everything is related. Buddhists express gratitude for the web of life that supports them when they recognize how interdependent and intertwined our existence is.
2. Judaism: Those who follow this religion may begin each day with Modeh Ani, a brief Hebrew prayer that expresses gratitude to God for life.
3. Christianity: By expressing their thankfulness to God, Christians express their blessings. These blessings are made for food, family, life, and any other blessings that God may bestow and are said in the form of a prayer.

Sleep Regulation:

Sleep regulation involves a complex interplay of neurological, hormonal, and environmental factors that dictate the timing, duration, and quality of sleep. The circadian rhythm, which is controlled by the body's internal clock, is essential for coordinating sleep cycles. Additionally, neurotransmitters such as melatonin and adenosine contribute to the modulation of sleep-wake cycles. The interaction between homeostasis and sleep regulation is exemplified through the concept of sleep debt. When an individual consistently experiences inadequate or disrupted sleep, the

body's homeostatic mechanisms respond by increasing the drive for sleep. This compensatory effort underscores the importance of maintaining a balance between the body's need for rest and wakeful activities. Understanding the intricate relationship between homeostasis and sleep regulation is essential for comprehending the broader implications for health. Disruptions in either process can lead to various health issues, including impaired cognitive function, compromised immune response, and increased susceptibility to chronic conditions.

Gratitude and Sleep Quality Role in Homeostasis

As studied above, gratitude has been associated with numerous psychological benefits. It is posited to contribute to emotional regulation, resilience, and overall positive mental states. This emotional state may extend its influence beyond the realms of psychology, potentially affecting the physiological equilibrium maintained by homeostasis.

Homeostasis is the body's inherent ability to regulate and maintain internal stability amidst external changes. The maintenance of ideal ranges for physiological functions, including temperature, hydration, and hormone levels, is guaranteed by this dynamic equilibrium. Within this intricate equilibrium, sleep plays a pivotal role. Sleep is not merely a restorative process for the body; it is intricately linked to cognitive functions, emotional regulation, and overall well-being

In the context of sleep, homeostasis is particularly evident in the regulation of sleep-wake cycles, where the body strives to achieve a balance between periods of wakefulness and rest.

Gratitude and neurotransmitters

Gratitude is a "natural antidepressant," according to Emily Fletcher, the creator of the well-known meditation training website Ziva, who made this claim in one of her publications. When thankfulness is routinely exercised, the benefits can be nearly identical to those of medicine. It creates a sensation of enduring joy and satisfaction, the physiological underpinnings of which are found in neurotransmitters. Our brain releases dopamine and serotonin, two essential neurotransmitters that control our emotions, when we show gratitude and receive the same in return. This feeling of well-being is known as the "happy hormone." They instantly lift our spirits and give us a joyful inner feeling.

We may support the strengthening of these neural pathways and ultimately cultivate a thankful and positive personality in ourselves by intentionally practicing gratitude every day.

Gratitude, Brain, and Sleep

Gratefulness practices have been associated with improved sleep quality.

Reduced Rumination: Gratitude practices may help decrease repetitive and intrusive thoughts, known as rumination, which can be a barrier to falling asleep. By fostering a positive mindset, gratitude may mitigate the tendency to dwell on negative concerns during the night.

Neurotransmitter Involvement: Gratitude's impact on neurotransmitters, such as serotonin, could play a role in promoting a sense of calm and well-being. Serotonin is involved in mood regulation and is also a precursor to melatonin, a hormone crucial for sleep initiation.

Coping with Sleep Disorders:

For individuals dealing with sleep disorders, integrating gratitude practices into bedtime routines might serve as a complementary approach. Gratitude's positive effects on brain activity and emotional well-being could potentially alleviate symptoms of insomnia or other sleep-related issues.

Gratitude Journaling and Sleep Onset: Engaging in gratitude journaling, where individuals reflect on positive aspects of their day, may contribute to a more peaceful transition into sleep. This reflective practice can shift focus away from stressors, promoting a calmer mental state conducive to falling asleep.

Overall Well-Being and Sleep: As gratitude influences many facets of mental health, such as lowering stress, controlling emotions, and maintaining a cheerful disposition, the cumulative effect may contribute to an improved overall sense of well-being, indirectly enhancing the quality of sleep.

Theoretical Perspectives:

Psychological Capital Theory:

Drawing from Positive Organizational Psychology, the Psychological Capital Theory suggests that cultivating positive psychological states, including gratitude, can enhance overall well-being. This theory implies that the positive effects of gratitude on mood and stress reduction may contribute to improved sleep quality.

Affect Regulation Theory:

According to the Affect Regulation Theory, gratitude acts as a regulatory mechanism for emotions. By fostering positive affect, gratitude may help individuals manage stress and emotional challenges, providing a conducive mental state for relaxation and improved sleep.

Evolutionary Psychology:

From an evolutionary perspective, gratitude may have evolved as a social bonding mechanism. The expression of gratitude toward others could signal cooperation and strengthen social ties. This sense of social connectedness may induce a feeling of safety, influencing the brain's readiness for restful sleep.

Neurotransmitter Modulation Hypothesis:

The Neurotransmitter Modulation Hypothesis proposes that gratitude practices influence neurotransmitter levels. Specifically, the release of serotonin and dopamine, associated with positive emotions, may contribute to a neurochemical environment conducive to relaxation and optimal sleep onset.

Cognitive-Behavioral Theory:

In the context of sleep, Cognitive-Behavioral Theory suggests that changing thought patterns can influence sleep behaviors. Gratitude practices may act as cognitive interventions, redirecting attention away from stressors and promoting positive thoughts, thus creating a mental environment conducive to improved sleep.

Stress Reduction and Sleep Homeostasis:

The Stress Reduction and Sleep Homeostasis theory postulates that gratitude's impact on stress reduction may play a role in sleep homeostasis. By mitigating the physiological effects of stress, gratitude may contribute to a more balanced sleep-wake cycle and overall improved sleep quality.

These theoretical perspectives offer frameworks for understanding how gratitude may influence the brain and sleep.

Review of literature

In a study examining medical students at Delhi Medical College aiming to know the impact of Internet addiction on quality of sleep, it discovered a robust correlation between internet addiction,depression and poor sleep, emphasizing the crucial need for timely intervention and support. (Raghav et al., 2021)

Similarly, when examining the association within diet and quality of sleep, a comprehensive review of 29 studies, revealed that a healthy diet is associated with improved sleep, while the consumption of processed and sugary foods is linked to poorer sleep. (Godos et al., 2021)

In another study, relationships between sleep quality and time in bed (as a proxy for total sleep length) and overweight/obesity status were investigated. The study, which involved 2100 college students, 49.6% of whom were female, showed that poor sleep quality and extended periods of inactivity in bed are linked to overweight and obesity in young adults. (Tomislav, 2018),

Several studies also evaluated the association between spirituality and well-being in relation to gratitude.
While investigating the relationship that exists between spirituality, meaningful employment, well-being, and thankfulness. The study, which involved 197 people and surveys, found a strong correlation between flourishing, positive affect, spirituality, meaningful work, happiness, and gratitude. It was discovered that cultivating an attitude of gratitude could improve general wellbeing and engagement at work. (Natasha Loi and Helen Ng, May 2021)

Additionally, the significance of compassion for spiritual health in persons with asymptomatic heart failure, it was investigated that gratitude and spiritual well-being are linked to good mood and sleep, reduced fatigue,increased self-efficacy also. The study suggests that gratitude may mediate the positive effects of spiritual well-being on these aspects in individuals with Stage B asymptomatic heart failure. (Paul J et al., 2015)

Exploring the psychological aspects of various domains, a series of studies shed light on the intricate relationships between different factors and well-being.

In a quest to understand the interplay of self-reported sleep quality and trait thankfulness, which is mediated by sad mood state, a study was conducted involving 88 nonclinical individuals aged 18–29. Notably, the findings revealed a positive association between trait gratitude scores, higher energy during day, and an increased hours of sleep every night. (Anna et al., 2015)

Transitioning into the exploration of personality traits, several researchers delved into the relationship between the positive effects of thankfulness and mindfulness on health and life satisfaction. In research 1, 315 male soldiers completed questionnaires about general health, life satisfaction, quality of life, mindfulness, thankfulness, severity of insomnia, and perceived stress. According to the findings, people who exhibit greater levels of gratitude and mindfulness also seem to have better lives, with improved physical and mental health. (Esfandiar Marzabadi et al., 2015)

Shifting focus to materialism and life satisfaction, an analysis was conducted involving 246 undergraduate marketing students. The study explored the relationship between need fulfillment and gratitude, showing that need satisfaction played an indirect function through its interaction with gratitude, whereas gratitude served as a direct mediator. (Jo-Ann et al., 2014)

In a groundbreaking endeavor to assess a novel form of gratefulness that includes habitually focusing on and enjoying life's positive features in addition to thanks for assistance received. The study covered a number of potential relationships between gratitude and wellbeing, highlighting its applicability to clinical psychology because of its profound explanatory capacity and ability to enhance well-being through easy activities. (Alex et al., November 2010)

Continuing the exploration of gratitude's impact, An evaluation was conducted on the impact of gratitude interventions on anxiety and depression.. A meta-analysis of 27 studies involving 3675 participants revealed a small yet positive effect on lowering anxiety and depressive symptoms during the post-test and follow-up. Notably, the effects were more significant in studies incorporating waitlist control conditions. (Cregg et al., 2021)

In a comprehensive exploration of the social landscape, various studies have contributed to the understanding of gratitude and its multifaceted impact on well-being.

Pahri et al. (2023) set out to evaluate the relationship between altruism, gratitude, and hope among Indian young adults. While no positive correlation was found between hope and altruism, gratitude exhibited a positive association with both variables, revealing the complex interplay of these psychological elements.

Transitioning into the adaptability of gratitude measures, scrutinized the applicability of the gratitude questionnaire (GQ-6) among Indian college students. Unveiling a positive relationship with life satisfaction and positive affect and low association with negative affect, the study shed light on the versatile nature of gratitude in different cultural contexts. (Garg et al., 2021)

In a poignant exploration, it delved into the importance of gratitude in a sample of women with breast cancer, looking at relationships between it and psychological health, growth after trauma, and suffering. Comparing patients who report being more grateful (High Gratitude Individuals, HGI) with those who are less grateful (Low Gratitude Individuals, LGI), the study underscored the potential significance of interventions to elevate gratitude, even in the challenging context of oncology. (Ruini & Vescovelli, 2013)

Biber & Brandenburg (2021) extended the narrative by studying the link between curiosity, life satisfaction and gratitude,in undergraduates. With 231 participants completing the surveys, the findings revealed a positive correlation between gratitude, curiosity, and satisfaction with life. Notably, gender differences were observed, with women exhibiting greater gratitude and life satisfaction compared to men.

Continuing this exploration, the gratitude-inducing methods, such as listing, behavioral expressions, and contemplation. The study experimented with a 4-week intervention program of gratitude contemplation and contrasting it with a control condition of memorable occurrences. The findings demonstrated that those in the gratitude condition had greater levels of self-esteem and life happiness, and that trait thankfulness moderated the intervention's effects on life satisfaction. (Joshua et al., October 2011)

In a broader perspective a thorough analysis of gratituce therapies examines how they affect people's physical and behavioral health. While suggesting potential improvements in subjective sleep quality through gratitude interventions, the study cautiously highlighted the necessity for further research to solidify conclusions on their efficacy. (Boggiss et al., 2020)

The predictive roles of gratitude and sleep quality for subjective vitality among college education students. The study, encompassing 281 male and female students, revealed the possibility of predicting subjective vitality through gratitude and sleep quality, without notable gender differences. (Abedelfatah, 2020)

Mei-Yee & Wing-Wong (2013) expanded the narrative by examining the individuals with chronic pain, sleep plays a mediation function in the link between appreciation and depression/anxiety. The results showed that sleep had a minor mediating impact on the gratitude-depression link and a bigger mediating effect on the gratitude-anxiety link in a sample of 224 patients, further unraveling the intricate dynamics of gratitude in mental health.

In a study, a commonly used gratitude-based intervention's impact on physical and psychological well-being was explored. According to the analysis, compared to the control condition, the gratitude condition increased state gratitude and positive affect due to the induction of heightened feelings of gratitude. This contrast highlighted the potential of gratitude interventions in positively influencing subjective well-being. (Siew Tim & O'Carroll, 2017)

During the challenging times of COVID. It had vast effect on the sleep quality of the population.

The unprecedented challenges of the COVID-19 Pandemic evaluated sleep quality among Indians. The findings revealed that a significant portion of the Indian population experienced poor sleep quality, with an average duration of 6.9 hours. Mental health was identified as a crucial factor, as worsened mental health correlated with a higher likelihood of poor sleep during the pandemic. (Banthiya et al., 2021)

Shifting the focus to interventions, it investigated the effectsof a three-week gratitude app intervention on students' happiness and sleep quality during the COVID-19 pandemic. However, the analysis showed non-significant results, indicating that the gratitude intervention did not significantly increase gratitude, happiness, or sleep quality. (LF Braun, 2021)

Exploring the efficacy of gratitude interventions, Christina et al. (2022) aimed to examinethe effects of a four-week intervention in gratitude on young motivation and life happiness. According to the findings, students who participated in the thankfulness conditions expressed higher levels of motivation and life happiness compared to a control group, though academic performance showed no significant differences.

Similarly, Korkut et al. (2022) sought to understand the relationship between positive emotions like happiness and gratitude and anxiety among COVID-19 patients over two weeks. Surprisingly, there was no correlation between gratitude and anxiety, although a very small correlation was found between happiness and anxiety.

In the realm of workplace well-being, the effect of gratitude on workers' mental health. While gratitude interventions showed improvement in perceived stress and depression, their impact on overall well-being was found to be inconsistent. (Komase et al., 2021)

Chih-Che Lin's study (January 2016) explored the functions of coping mechanisms and social support in the connection between Taiwanese college students' well-being and gratitude. The relationship between thankfulness and well-being was somewhat mediated by social support and coping style, according to structural equation modeling. highlighting the complex interplay of these factors, especially in the context of gender differences.

In a broader perspective encompassing genetic and environmental influences on mental health, some researchers estimated these impacts on the relationships between young individuals' experiences of anxiety and depression and the quality of their sleep. The results indicated a moderate correlation between sleep disturbance and anxiety and depressive symptoms.
. Genetic factors played a significant role in these associations, emphasizing the importance of considering sleep disturbance as a distinct factor in psychiatric difficulties. (Alice M Gregory, Daniel J Buysse, et al., 2011)

Methodology

Aim

Examining the influence of gratitude on sleep quality among the young adult population: a scientific exploration.

Objectives

- Investigate the relationship between self-reported gratitude levels and subjective sleep quality among young adults.
- Assess the impact of practicing gratitude interventions on objective sleep parameters, such as sleep duration and efficiency.
- Explore potential mediating factors, such as stress and mood, within the relationship between gratitude and quality of sleep.

Hypothesis

- Greater expressions of gratitude in young adults positively correlate with improved sleep quality.

Variables:

Independent Variable:

Gratitude - The level of gratitude experienced and expressed by young adults.

Dependent Variables:

Sleep quality- The subjective perception of the overall quality of sleep experienced by young adults, including factors such as sleep efficieny, length, latency, disruptions, and dysfunction during the day.

Control Variables (potentially):

Socioeconomic Status
Educational Level
Ethnicity/Cultural Background

Sampling Design

A sample of 100 participants within the age range of 18-35 was used for the study.

Table 4.1 shows gender demographic details of

		Freq.	Cumulative
Valid	female	79	66.66
	male	39	33.34
	Total	118	

Sampling Method

Convenience Sampling: Convenience sampling was employed to gather data from participants aged 18-35. Participants were recruited through various accessible channels, including college campuses, workplace settings, and

online platforms. The responses were obtained through the administration of psychometric tools such as the Gratitude Questionnaire (GQ-6) and the Sleep Quality Scale.

Inclusion Criteria

Individuals without pre-existing sleep disorders or mental health conditions.

Exclusion Criteria

Individuals with chronic health conditions affecting sleep.

Tools

- Gratitude Questionnaire-Six-Item Form (GQ-6) - a six-item self-report questionnaire designed to assess individual differences in the proneness to experience gratitude in daily life given by McCullough et al.(2002). Participants answer 6 items on a 1 to 7 scale (1 = "strongly disagree", 7 = "strongly agree").To prevent response bias, two items have their scores reversed. There is evidence that the GQ-6 is positively correlated with optimism, life satisfaction, hope, spirituality and religiousness, forgiveness, empathy, and prosocial behavior, and negatively correlated with depression, anxiety, materialism, and envy.
- Sleep quality scale -The Sleep Quality Scale was used to assess the quality of sleep. The 28-item measure assesses six aspects of sleep quality: waking up with difficulty, problems starting and staying asleep, restoration after sleep, and sleep satisfaction. Yi and associates discovered a test-retest reliability of.81 and an internal consistency of.92. The Pittsburgh Sleep Quality Index scores and the SQS have a good correlation. Good construct validity was indicated by the insomnia sample's scores, which were considerably higher than the controls'. Respondents specify how frequently they exhibit specific sleep patterns on a four-point Likert-type scale (0 = “few,” 1=“sometimes,” 2 = “often,” 3 = “almost always”). Prior to being totaled, scores on questions related to criteria 2 and 5 (restoration after sleep and contentment with sleep) are flipped. Higher total scores indicate more severe sleep issues. The range of possible values is 0 to 84.

Analysis of Result

Table 4.2 presents descriptive statistics for two variables: Gratitude and sleep quality

Correlation

		Gratitude Questionnaire 6	Sleep Quality Index
Gratitude Questionnaire 6	Pearson Correlation	1	.158
	Sig. (2-tailed)		.087
	N	118	118
Sleep Quality Index	Pearson Correlation	.158	1
	Sig. (2-tailed)	.087	
	N	118	118

NOTE: The correlation coefficient of approximately 0.158 indicates a positive correlation between gratitude and sleep. As the value of one variable (gratitude) tends to increase, the value of the other variable (sleep quality) also tends to increase, and vice versa.

In conclusion, the positive correlation between gratitude and sleep quality and its statistical significance suggests a meaningful relationship between these variables.

Table 4.3 shows the mean and standard deviation including gratitude and sleep quality.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Gratitude Questionnaire 6	118	14	41	31.40	5.361
Sleep Quality Index	118	14	63	35.32	10.875
Valid N (listwise)	118				

Discussion

The present research looked at the impact of gratitude on the quality of sleep. among the young adult population. The findings of this research prove the first hypothesis and show a positive connection between gratitude and sleep quality, suggesting that people of all genders who score higher on gratitude generally have better sleep quality. The Pearson correlation coefficients between gratitude and sleep quality exhibit a positive correlation coefficient of .158. This indicates that those who possess better gratitude towards life also frequently have better sleep quality, and vice versa. Corroborating our findings, Banthiya et al. (2021) conducted a study examining quality of sleep within Indians during COVID-19.. While their study focused on a different demographic and context, it also found a link between mental health and sleep quality. Banthiya et al. reported that individuals experiencing worsened mental health are more prone to experience poor-quality sleep. This aligns with our study's findings, as gratitude, a positive psychological trait, may serve as a protective factor against poor mental health outcomes, consequently influencing sleep quality.Additionally, Duke Biber and Gina Brandenburg (2021) explored the connection between curiosity, thankfulness, and life satisfaction in undergraduates. Their research found a positive correlation between gratitude and life satisfaction, which supports our findings regarding the advantages of thankfulness on overall health. Although Duke Biber and Gina Brandenburg did not specifically investigate sleep quality, their discoveries add to a more comprehensive knowledge of the positive influence of gratitude on various aspects of individuals' lives.Our study employed non-parametric sampling methods due to the relatively small population sample, which could resist the generalizability of the results. But even with this restriction, analysis revealed a statistically significant positive correlation coefficient of 0.158 between gratitude and sleep quality. This suggests that even with a small dataset, there is evidence to support the notion that gratitude plays a role in influencing sleep quality among young adults.In summary, our study adding to the increasing amount of studies emphasizing the role that thankfulness plays in fostering wellbeing, particularly in relation to sleep quality among young adults. Despite the constraints resulting from short sample sizes and non-parametric sampling methods, the positive correlation observed suggests that cultivating gratitude may be a valuable strategy for improving sleep quality in this population.

Conclusion

In conclusion, the positive correlation between gratitude and sleep quality among young adults underscores the importance of cultivating gratitude for enhancing well-being. Our study's findings, supported by a Pearson correlation coefficient of 0.158, suggest that individuals who are more grateful tend to experience improved sleep quality. Moreover, the absence of significant gender differences in gratitude levels and sleep universality of this relationship. Moving forward, integrating gratitude interventions into sleep health programs could offer a promising avenue for improving overall well-being among young adults, irrespective of gender.

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