



Effect of Sleep Deprivation on Mental and Physical Health of Young Adults

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Abstract

As opposed to the affiliations of insomnia with mental health, its affiliation to physical health until relatively recent times, remained essentially uncharted. Our cognitive performance, physical and mental health are challenged by the loss of sleep. Adequate sleep is necessary for the optimal psychological and cognitive functioning of an individual. The effect of sleep deprivation is not only a threat to academic progress but also to an individual's overall well-being. Young Adults are known for their erratic circadian rhythms. Such schedules, coupled with behaviors like drinking alcohol and caffeine are linked to poor sleep hygiene. Focus here is drawn to the myriad of detrimental consequences that an inadequate amount of sleep has on young adults, like depression, anxiety, obesity, fatigue, and poor academic performance. The aim of the current research is to study the effect of Sleep Deprivation on the mental and physical health of young adults. Standardized scales were used to measure the variables. A total of 69 young adults falling in the age category 18-26 years were taken. The data were recorded with the help of standardized scales and the questionnaires were circulated through the help of google forms. The results showed psychological distress is significantly negatively correlated with general health. The findings add to extant knowledge regarding the graveness of sleep deprivation to reduce the risk of young adults developing mental health problems.

Keywords: Sleep deprivation, mental health, well-being, physical health, young adults

Introduction

“Sleep deprivation is an illegal torture method outlawed by the Geneva Convention and international courts, but most of us do it to ourselves.” — Ryan Hurd

Mental health and sleep are intimately related. Our mental health and psychological state are impacted by the lack of sleep. Furthermore, individuals who battle mental health issues are more vulnerable to insomnia and other sleep disorders. Insufficient sleep has been found to significantly raise negative emotional reactions to stress factors whilst also significantly reducing positive emotions. Sleep deprivation not only affects our mental health but also does considerable damage to our bodies. It depletes our brain power and gravely jeopardizes our physical health.

Sleep deprivation has quite a negative impact on our cognitive abilities in addition to our psychological state. An individual could become increasingly agitated or particularly susceptible to changes in mood. It can also jeopardize decision-making and creative thinking. If an individual isn't getting enough bedtime, he/she could perhaps start to experience hallucinations, seeing or hearing things that aren't there. Poor sleep quality dangerously affects our memory. Throughout sleep, our brain constructs links that assist in the processing and retention of fresh information. Lack of sleep may have an impact on both long- and short-term memory.

Poor sleep has been scientifically linked to a diverse range of health complications, including immune system degradation, trouble with thinking and concentration, high blood pressure, risk of diabetes, lowered sex drive, risk of heart disease, and increased weight. Poor sleep is associated with increased fatigue, psychological distress, risk of suicide (Taylor et al., 2003), and decreased immune functioning (Savard et al, 2003), higher medical costs, increased disability, and greater limitations of activity (Simon & VonKorff, 1997).

Psychological Distress

As defined by APA (2020), “Psychological distress is a set of painful mental and physical symptoms that are associated with normal fluctuations of mood in most people. In some cases, however, psychological distress may indicate the beginning of major depressive disorder, anxiety disorder, schizophrenia, somatization disorder, or a variety of other clinical conditions. It is thought to be what is assessed by many putative self-report measures of depression and anxiety”. Psychological distress is a general term for stress, anxiety, and depression symptoms. High levels of psychological distress can be a sign of common mental illnesses like depression and anxiety disorders and are a sign of poor mental health (Viertiö et al., 2021).

Psychological distress is rarely acknowledged as an independent concept; instead, it is quite often talked about in the context of strain, stress, and distress (Ridner, 2004). Poor mental health because of psychological distress may have an effect on an individual's physiological well-being.

Psychological distress is expansively described as an emotional state characterized by indicators of depression (e.g., loss of interest; sadness; hopelessness) and anxiety (e.g., restlessness; starting to feel tense) (Mirowsky & Ross, 2002). These symptoms may be affiliated with somatic complaints (e.g., insomnia; headaches; lack of energy) that differ across cultures (Kleinman & Kleinman, 1991). Additional indicators for identifying psychological distress have been suggested, however, there is no accord on these.

Subjective short sleep duration is a common clinical complaint amongst people with mental disorders and a component of several diagnoses. Self-reported short sleep has been associated with psychological distress in cross-sectional studies in general adult populations (Dobrosielski et al., 2017)

Sleep disturbance is a key symptom in mental disorders such as depression (Rohde et al., 2007)

The independent effect of short sleep duration upon persistent distress may also suggest that sleep disturbance is a marker for severity or that it reflects a comorbid condition that diminishes the chance of the distress resolving. Finally, it raises the possibility that the increase in levels of distress reported by young adults over the past decade may reflect temporal changes in young people's sleep patterns (Glozier et al., 2010).

Sleep quality

Sleep quality is defined as an individual's self-satisfaction with all aspects of the sleep experience. Sleep quality is known to be linked to physical and psychological health, in addition to life satisfaction. Sleep deprivation is associated with depression and anxiety. Sleep quality has four attributes: sleep efficiency, sleep latency, sleep duration, and wake after sleep onset. Sleep of sufficient duration and quality is essential for optimum cognitive and psychological functioning (Waters & Bucks, 2011).

Sleep is characterized by a series of stages associated with autonomic nervous system operations. Sleep is a component of the circadian cycle. It is an intricate physiological process unique to every person and typically lasts for around one-third of the lifespan. Major bodily systems like the circulatory, respiratory, musculoskeletal, and central neurological systems wear out daily and are repaired while you sleep (Schulz et al., 2012).

Research suggests that timing of sleep as well as its quality & quantity are linked with students' learning abilities & academic achievements and that students are chronically sleep deprived (Curcio et al., 2006). In other research, poor sleep quality has been related to depressive symptoms & anxiety in females (Eller et al., 2006)

General Health

As defined by the World Health Organisation (2006) "Health is a state of complete physical, mental, and social well-being and merely the absence of disease or infirmity".

Health is the "harmonious functioning of the organs" as defined by Pindar (5th century BC).

All modern definitions of health recognize health as the absence of disease, implying a maximum capacity of the individual for self-realization and self-fulfillment. The holistic concept of health is contained in the expression of wholeness. Health is a relative state in which one is able to function well physically, mentally, socially, and spiritually to express the full range of one's unique potential within the environment in which one lives. How did the widespread belief that lack of sleep is harmful to one's health emerge? Anxiety about the effects of poor sleep or total lack of sleep may have an origin in experiments conducted near the turn of the century and reported by Pieron (1913) 232. They revealed bodily harm and perhaps even death in animals subjected to complete sleep deprivation.

As scientists begin to use cross-disciplinary tools to examine the effects of insufficient sleep, the health-related costs of sleep deprivation are slowly emerging. For a long time, the immune system was thought to be a vulnerable target for the negative impacts of sleep deprivation. It is commonly believed that humans necessitate 7-8 hours of sleep per night and that sleep exists to serve a reparative function. Some people believe that missing this period of both mental and physical restoration may have direct consequences on an individual's health and that chronic sleep deprivation may reduce life expectancy and increase the risk of complications. When humans remain awake throughout the night, our bodies miss out on the surge of energy. Human growth hormone (hGH) is a putatively reparative hormone that occurs during nocturnal sleep and obtains an excess of stressor substance, "Norepinephrine and corticosteroids are two examples.

In addition to direct physiologic effects of stress, stress impacts health through changes in health behaviors (substance use, eating, sleep, exercise) that can both mitigate and enhance stress' physiological impacts. There is considerable evidence that individuals use health-impacting behaviors in an attempt to self-regulate mood (blunt negative mood, produce positive mood), and may use some typically inhibited behaviors to escape paying attention to stressors or problems (Salovey et al., 2000)

Hypothesis

- There will be a positive correlation between psychological distress and sleep deprivation
- There will be a negative correlation between general health and sleep deprivation

Method

Sample

A total of 69 people participated from across Lucknow city. The age of the subjects ranges from 18-26 years.

Measures

Kessler Psychological Distress Scale (k10) : The Kessler Psychological Distress Scale (K10) was created by Kessler (2003). It is a ten-item scale which evaluates psychological stress at a five level likert scale. Each item on the scale is scored from 1 = 'none of the time', 2= 'A little of the time', 3= 'Some of the time', 4=Most of the time, 5 = 'all of the time'. Scores of the 10 items are then summed, yielding a minimum score of 10 and a maximum score of 50. Low scores indicate low levels of psychological distress and high scores indicate high levels of psychological distress.

Sleep Quality Scale (SQS) : The Sleep Quality Scale (SQS) was developed by Yi et. al.(2006) It consists of 28 items, scoring 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").) The Sleep quality scale (SQS) evaluates six domains of sleep quality: daytime symptoms, restoration after sleep, problems initiating and maintaining sleep, difficulty waking, and sleep satisfaction. The scale has been validated in individuals aged 18–59 years. Developers wished to create a scale that could be used as an all-inclusive assessment tool , a common, efficient measure suitable for evaluating sleep quality in copious patient and research populations.

General Health Questionnaire-12 (GQS12) : The GHQ was designed to assess psychological distress in population surveys and epidemiological studies and to screen for non-psychotic mental disorders in clinical settings (Goldberg & Williams, 1991) The GHQ-12 includes the following items: able to concentrate; lost sleep over worry; playing a useful part in society; capable of making decisions; constantly under strain; couldn't overcome difficulties; enjoy normal activities; face up to problems; unhappy and depressed; losing confidence in yourself; thinking of yourself as worthless; feeling reasonably happy. It is a four-point (0-1-2-3) likert scale.

Procedure

Standardized Psychological Tests were administered to the participants. All the participants were informed about the purpose of the research and the questionnaires were filled out through Google forms. To garner their honest responses without any fear or nervousness, the participants were given assurances of the confidentiality of the data.

Analysis of Data

Results

Table 1: N, Mean & ta Standard Deviation

	Psychological distress	Sleep quality	General Health
N	69	69	69
Mean	28.4	38.0	14.9
Standard deviation	9.48	11.5	6.59

Table 2:
Correlation

	Psychological distress	Sleep quality	General Health
Psychological distress	—		
Sleep quality	0.223	—	

General Health	-0.379	**	0.227	—
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Note. * $p < .05$, ** $p < .01$, *** $p < .001$

Discussion of Results

The study revealed that there is a significantly negative correlation between general health and psychological distress ($r = -0.379$, $p < .01$). However no other significant correlation was identified in the study between any other variables.

A study was done by Cano et al. (2003) to evaluate the relationship between psychological disorders and self-rated health, where a sample of 137 patients considered for the study at a primary care clinic in a Department of Veterans Affairs Medical Center, the participants were asked to fill questionnaire interpreting to that the result showed that the self-rated health was negatively associated with psychological disorders. Another study was conducted to examine the association between psychological distress and one's physical well-being, where the result indicated a significant correlation between the two variables, despite the variations in the undertaken population (Tessler & Mechanic, 1978).

Conclusion

Sleep deprivation as well as the issues it leads to are global concerns. Poor sleep has dire implications for one's health. The current study aims to find the effect of sleep deprivation on the mental and physical health of young adults, where a sample of 69 people participated from across the Lucknow city, ranging between the age of 18 years to 26 years. To collect the data standardized scales, Kessler Psychological Distress Scale, containing 10 items, to investigate the psychological distress, Sleep Quality Scale, containing 28 items, to evaluate one's sleep quality and General Health Questionnaire-12 containing 12 items, to identify the general health of the participant were used, the circulation of the questionnaires were done through the help of google forms. The results found that psychological distress is significantly negatively correlated with general health, however no other significant correlations were identified between, psychological distress and sleep quality and sleep quality and general health. Which further indicates that an individual's general health does get affected with psychological distress.

The lack of sleep has a detrimental effect on our mental health whereas it was found that sleep deprivation does not directly affect our physical health. This study holds implications for future research and for current application to the young adult population.

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