



AN OBSERVATIONAL PILOT STUDY TO FIND IMPACT OF SLEEP ON STRESS COPING CAPACITY

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ABSTRACT

Sleep plays a vital role in good health and well-being throughout your life. Good sleep is necessary for good physical and mental health and a good quality of life. Insufficient sleep is a pervasive and prominent problem in the modern 24-hr society. Sleep is a powerful stress-reliever, A lack of sleep not only reduces mental clarity but our ability to cope with stressful situations.

So, the study was estimated to find the Impact of Sleep on Stress Coping Capacity.

In this study, 20 volunteers were selected as per inclusion criteria and were assessed with the Sleep Scale and Stress Coping Capacity Scale. The data collected was compared to look for relationship between them.

It was found that Volunteers with Higher Overall Stress Coping Capacity had significant correlation with Epworth Sleepiness Score. Sleep is a powerful stress reducer. Good Quality sleep routine calms and restores the body, improves concentration, regulates mood, and sharpens judgment, decision-making, better problem solving capacity and able to cope with stress.

Key words – Sleep, Stress Coping Capacity, Sleepiness, Stress

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INTRODUCTION

The right amount and quality of sleep improves attention, behaviour, memory, and overall mental and physical health. Multiple factors can cause or contribute to sleep deprivation, including poor sleep hygiene, lifestyle choices, work obligations, sleep disorders, and other medical conditions.

Sleep is a powerful stress-reliever. It improves concentration, regulates mood, and sharpens judgment and decision-making^[1]. A lack of sleep not only reduces mental clarity but our ability to cope with stressful situations. This is due, to the impact of chronically high levels of cortisol.

Typically, cortisol levels fall in the evening hours, as one element of the body's natural preparation for sleep. When we put off sleep, cortisol levels remain high and interfere with the release of melatonin, a hormone that is essential for the regulation of sleep-wake cycles^[2].

Too little sleep impacts on the rapid eye movement stage of sleep (REM) which governs our processing of emotions and memories. Losing out on the restorative benefits of REM sleep directly impacts our mood, making us more irritable and more stressed out leading to less stress coping capacity.

NEED OF STUDY

People today are very busy and are involved in a wide range of rushed activities and consequently creating stress leading to lack of sleep. Lack of sleep can cause the body to react as if it's in distress, making individuals unable to cope with it by releasing more of the stress hormone^[3]. Frequently being in a heightened state of alertness delay the onset of sleep and cause rapid, anxious thoughts to occur at night. Lack of sleep cause mood changes and decrease your ability to deal with stress.^[4]

So, the study was designated to highlight the Impact of Sleep on Stress Coping Capacity.

RESEARCH QUESTION

Is there any Impact of Sleep on Stress Coping Capacity good quality of sleep

HYPOTHESIS

H₀ - There is impact of Sleep on Stress Coping Capacity

H₁ - There is no any impact of Sleep on Stress Coping Capacity

AIM

To observe the Impact of Sleep Deprivation on Stress Coping Capacity

OBJECTIVE

To assess Sleep with the help of ESS (Epworth Sleepiness Scale)

To assess the Stress Coping Capacity of the individuals with help of SCRI (Standard Stress Coping Resource Inventory Scale)

To assess relation between Sleep and Stress Coping Capacity.

MATERIALS AND METHOD

Literature Review

Previous work done suggest lack of sleep lead to higher levels of stress, frustration, depression and anxiety. Sleep deprivation also lower thinking and problem-solving skills, attention span, memory, patience, ability to connect with friends and family, and even physical health. Research suggests that people with poor sleep quality and sleep deprivation are thought to influence stress-related parameters including cortisol levels and systemic inflammation. Fragmented sleep or long-term sleep deprivation appear to contribute to higher cortisol levels. As far as body is able to cope with it, a stress act as a

normal stimulus required for our physical and social well-being, stress becomes “**distress**” when the individual is unable to cope with it.

Review on Stress Coping Resource Inventory Scale

The Scale measures how people handle stress, conceived in five basic ways which correspond to the measure’s scales. The five SCRI scales are Cognitive (COG), Social (SOC), Emotional (EMO), Spiritual/Philosophical (S/P), and Physical (PHY). People differ remarkably in their responses to potentially stressful events. For instance, about one in ten hostages comes out of captivity a mentally healthier person than when entering, while the others may face extreme emotional difficulty. The questions relate to factors most closely associated with the capacity to cope successfully with stress^[7].

Review on Epworth Sleepiness Scale

The ESS is an 8-item questionnaire that assesses subjective daytime sleepiness. The ESS assesses the likelihood of dozing in different common situations using a 4-point Likert response format (scored from 0 to 3 with higher scores indicate more severe sleepiness). Item responses are summed to obtain a total score ranging from 0 to 24, with a score greater than 10 indicating excessive daytime sleepiness. The ESS is routinely used in research and clinical practice to evaluate the presence and severity of excessive daytime sleepiness in older adults^[6].

Dr Johns first developed the ESS for adults in 1990 and subsequently modified it slightly in 1997. He developed it so he could assess the ‘daytime sleepiness’ of the patients in his own private practice of Sleep Medicine. He named the questionnaire Epworth Hospital in Melbourne, where he established the Epworth Sleep Centre in 1988. The ESS is a self-administered questionnaire with 8 questions. Respondents are asked to rate, on a 4-point scale (0-3), their usual chances of dozing or falling asleep while engaged in eight different activities. Most people engage in those activities at least occasionally, although not necessarily every day. The ESS score (the sum of 8 item scores, 0-3) can range from 0 to 24. The higher the ESS score, the higher that person’s average sleep propensity in daily life (ASP), or their ‘daytime sleepiness’. The questionnaire takes no more than 2 or 3 minutes to answer. It is available in many different languages^[5].

INCLUSION CRITERIA

- Apparently Healthy Volunteers irrespective of Gender, Caste and Religion
- Age 18 – 30 years.
- Student studying in Parul University.

EXCLUSION CRITERIA

- Individuals having Systemic Disorders
- Individuals with Psychosomatic Disorders
- Individuals who practice Yoga, Meditation, Pranayama in their daily routine
- Pregnant and Lactating Women.

TYPE OF STUDY – An Observational Survey Study

PLACE OF STUDY – Parul Institute of Ayurved, Parul University, Vadodara Gujarat

SAMPLE SIZE–20 Subjects

OBSERVATION AND RESULT

		Frequency	Percent
Table 1 – Distribution of Age Group	18-24	5	25.0
	25-28	14	70.0
	29-35	1	5.0
	Total	20	100.0

Among 20 volunteers it was observed that 5 volunteers were between age group of 18-24 years 14 volunteers were between age group of 25-28 years and 1 volunteer between age group of 29-35 years.

Among 20 observed volunteers 17 were Females and 3 Males

		Frequency	Percent
Table 3 – Distribution Sleep Hours	8 to 10	10	50.0
	5 to 7	5	25.0
	4 to 5	5	25.0
	Total	20	100.0

Among 20 volunteers it was observed that 17 volunteers had sleep for 8 to 10 hours and 3 volunteers had sleep for 5 to 7 hours.

		Frequency	Percent
Table 4 – Distribution of Wellness Score	1.85	1	5.0
	2.00	1	5.0
	2.42	1	5.0
	2.85	1	5.0
	3.00	2	10.0
	3.14	5	25.0
	3.28	3	15.0
	3.41	1	5.0
	3.42	3	15.0

	3.71	1	5.0
	3.85	1	5.0
	Total	20	100.0

Among 20 volunteers, 5 volunteers (25%) scored 3.14 and only 1 (5%) Volunteer had highest Score of 3.85.

		Frequency	Percent
Table 5 – Distribution of Thought Control Score	2.00	1	5.0
	2.13	1	5.0
	2.17	1	5.0
	2.33	3	15.0
	2.50	2	10.0
	2.66	5	25.0
	2.83	1	5.0
	3.00	3	15.0
	3.10	1	5.0
	3.16	1	5.0
	3.33	1	5.0
	Total	20	100.0

Among 20 volunteers, 5 volunteers (25%) scored 2.66 and only 1 (5%) Volunteer had highest Score of 3.33.

		Frequency	Percent
Table 6 – Distribution of Active Coping Score	2.00	2	10.0
	2.42	2	10.0
	2.57	4	20.0
	2.71	3	15.0
	2.85	4	20.0
	3.00	5	25.0
	Total	20	100.0

Among 20 volunteers, 4 volunteers (20%) scored 2.57, 2.85 each, 3 volunteers (15%) scored 2.71 2 (10%) Volunteers Scored 2.00, 2.42 each and 5 volunteers (25%) scored had highest score of 3.00.

		Frequency	Percent
Table 6 – Distribution of Social Ease Score	2.33	1	5.0
	2.50	1	5.0
	2.66	5	25.0
	2.83	4	20.0
	3.00	1	5.0
	3.16	4	20.0
	3.33	3	15.0
	3.50	1	5.0
	Total	20	100.0

Among 20 volunteers, 5 volunteers (25%) scored 2.66, 4 volunteers (20%) scored 2.83, 3.16 each, only 1 (5%) Volunteer scored 2.33, 2.50, 3.00 each and only 1 (5%) Volunteer had highest Score of 3.85.

		Frequency	Percent
Table 8 – Distribution of Tension Reduction Score	1.00	1	5.0
	1.50	1	5.0
	2.00	6	30.0
	2.50	4	20.0
	3.00	4	20.0
	3.50	4	20.0
	Total	20	100.0

Among 20 volunteers, 6 volunteers (30%) scored 2.00, 4 volunteers (20%) scored 2.50, 3.00 each and only 1 (5%) Volunteer scored 1.00, 1.50 and 4 volunteers (20%) had highest score of 3.50

		Frequency	Percent
Table 9 – Distribution of Spiritual Practice Score	1.00	1	5.0
	1.50	2	10.0
	2.50	4	20.0
	2.75	3	15.0
	3.00	4	20.0
	3.25	2	10.0
	3.75	2	10.0
	4.00	2	10.0
	Total	20	100.0

Among 20 volunteers, 4 volunteers (20%) scored 2.50, 3.00 each, 4 Volunteers (20%) scored 2.50 ,3.00 each, 2 volunteers (20%) scored 1.50, 3.25, 3.75 each only 1 (5%) Volunteer scored 1.00 And 2 volunteer (20%) had highest score of 4.00

		Frequency	Percent
Table 10 – Distribution of Interpretation of SCC	Above Average Stresscoper	17	85.0
	Average Stresscoper	3	15.0
	Total	20	100.0

Among 20 volunteers it was observed that 17 volunteers (85%) were Above Average Stresscoper and 3 volunteers (15%) were Average Stresscoper.

		Frequency	Percent
Table 11 – Distribution of ESS Score	0 – 7	2	10.0
	8 – 9	1	5.0

10 - 15	15	75.0
16 - 24	2	10.0
Total	20	100.0

Among 20 volunteers, 15 volunteers (75%) had Epworth Sleep Score ranging from 10 – 15, 2 volunteers (10%) had score ranging from 16 – 24, 0 – 7 each. And 1 volunteer (5%) had score ranging from 8 – 9.

Co-relation – Values of Pearson correlation coefficient with different Groups

	Test	Interpretation of SCC	Spiritual Practice Score	Active Coping Score
Sleep Hours	Pearson correlation coefficient	.608**	-	-
	Sig. (2-tailed)	0.004	0.012	0.037

Pearson correlation coefficient is significant (at the 0.01 level, 2-tailed) with Sleep Hours with Stress Coping Capacity is significant at 0.004, Spiritual Practice Score at 0.012, Active Coping Score at 0.037.

	Test	Active Coping Score	Tension Reduction Score	Overall SCC
Epworth Sleep Score	Pearson correlation coefficient	-.510	-.449	-.609**
	Sig. (2-tailed)	0.048	0.015	0.011

Pearson correlation coefficient is significant (at the 0.01 level, 2-tailed) with Epworth Sleep Score With Active Coping Score at 0.048, Tension Reduction Score at 0.015, Overall SCC at 0.011.

DISCUSSION

Sleep strongly influences our capacity to recover both mentally and physically^[8]. Adequate sleep makes us more resilient to everyday stress, better able to manage our emotions, and less likely to experience symptoms of anxiety and depression^[9]. It was observed that there was significant relation between Sleep Hours with Spiritual Practice and Active Coping Active coping accepts stress as an event to be experienced in the context of life, and Spirituality promote close family and friendship bonds and help people cope with physical or emotional pain and other life stressors. Stress And Sleep reinforces one another, Good Quality of Sleep improves better emotional regulation which improves ability to Cope with Stress^[4].

CONCLUSION

Volunteers with Higher Overall Stress Coping Capacity had correlation with Epworth Sleepiness Score (Correlation is significant at the 0.01 level). Hence volunteers with good quality of sleep had higher ability to cope with Stress, therefore there is Impact of Sleep on Stress Coping Capacity.

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