

THE SOCIAL CHANGE EFFECT ON INDIVIDUAL PERFORMANCE DUE TO INADEQUATE SLEEP: A CASE STUDY OF ADOLESCENT STUDENTS IN HYDERABAD CITY

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Abstract

Effects of sleep on productivity of individuals have been suggested by different social scientists but less work has done with reference to our society. Due to rapid use of technology, it is generally observed that people mostly remain awake till late night using internet and mobile phones, having chats with social groups, using face book, watching movies, playing games etc. Sleep plays a vital role not only in the psycho-physiological health but also on the work performance, decision making abilities and socialization of individuals. Youth is an important segment and future potential of society, also following this unhealthy life style. Which is affecting them badly in terms of their poor academics, improper attention and concentration during day time, inadequate decision making and inefficient working capacity beside having poor health. There is a need to understand and analyze their sleep pattern and its effects on their academics. Thus, this research was conducted to analyze the sleep pattern of young adolescent students at Hyderabad city. The data were collected from one hundred and twenty college students. The participants' age ranged from 16-18 years. Data were collected from high and low academic achievers. Both groups were analyzed on the sleep pattern inventory. Results indicated differences in the sleep pattern of both groups. High achievers were found to have more adequate sleep pattern than the low achievers. Low academic achievers take sleep of less than 4 hours. The implications of the study are important for the policy makers, education department and educationists who planned to improve the academic performance and skills of the young students. Results of the study pointed out the need to aware our youngsters about the importance of sleep for better cognitive functioning and good psycho-physiological health to play their role more effectively for the stable and bright future of country.

Keywords: *Adequate Sleep Pattern, Inadequate Sleep, High Achievers, Low Achievers & Psycho-Physiological Health.*

Introduction

Effects of sleep on productivity of society have been indicated by different social scientists. Sleep is an important activity which significantly affects the physiological functions as well as the socio--psychological and cognitive health of individuals (Science News, 2019). Reduced sleep influence work potentials, social interaction, and family relationships negatively. Findings of several health-related studies (Curcio, Ferrara & De Gennaro, 2006; Simpson & Dinges, 2007; Stick gold, 2005) had revealed that inadequate or less sleep during night is linked with different health problems including more body weight, diabetes, hypertension, cardiac problems, weak immunity, Alzheimer and stroke. On the other hand, adequate sleep is positively correlated with the work efficiency, memory, attention, effective learning and problem-solving skills of individuals (Lack, 1986; Stick gold, 2005).

Due to availability and increase in use of technology there observed a rapid diffusion of an unhealthy trend of late-night sleep and late wake-up, in our culture. Every individual's body from young teenagers to adults need a good sleep of six to eight hours for good health and efficient daytime working (Kim, Kim, Park, Kim & Choi, 2018; Randazzo, Muehlbach, Schweitzer & Walsh, 1998). Many individuals including youngsters give least importance to their sleep. Now a days, unfortunately the increased screen time which include use of mobiles, laptop, iPad, tv-watching, has become a significant issue and causing serious health problems from causing internet addiction to mental health issues among people of all ages including youngsters and children too (Carskadon, Harvey & Dement, 1981; Shao et al., 2018).

Youngsters are the pillars of hope of better and stable future not only for their family, but for the nation too. Their skills, potentials and health should not be wasted due to unhealthy habits or life style. The low academic achievement or failure in education, unemployment and increased pressure of social networking are some common key issues or problems of today's youth (European commission, 2012). Low level of academic performance is directly associated with problems in attaining good jobs, poor work performance, problems in socio-psychological adjustment, increased depression, anxiety and stress among youngsters. The efficient work performance whether in jobs or in academics, demand better mental health, for which proper adequate sleep is necessary. The health professionals have explained three main types of sleep patterns; long sleep (9 or more hours sleep), average sleep (6-8 hours) and inadequate or impaired

sleep (4 hours or less sleep). Generally, night sleep of six to eight hours has been suggested by the health professionals as important for good psycho-physiological health (Carskadon, Harvey & Dement, 1981; Heuer & Klein, 2003; Hackethal, 2013). Different studies (Harrison & Home, 2000; Heuer, et al., 1998; Kahn, Van de Merckt, & Rebuffat, 1989; Simpson & Dinges, 2007) had indicated that reduced or altered sleep patterns is positively associated with the excessive sleepiness during day time, impaired memory, poor recall, low academic performance and least or inefficient work performance.

Mostly youngsters remain awake till late night, not only for studies but for leisure activities in terms of use of face book, you-tube, Instagram, chatting on cell phones, playing video games (Ekinici, Celie, Savas, & Toro, 2014; Kim, et al., 2018). One major cause of sleep deprivation for many people including youngsters is excessive use of internet and mobiles because of lowest rate packages during night hours for net on cell phones. Some students try to meet the deadlines of completing assignments and other academic work by compromising their sleep which is also not a healthy attitude. Lack of night sleep or less sleep alters the attention capacity, learning skills and decision making of individuals (Drummond & McKenna, 2009; Wolfson & Carskadon, 2003). In poor sleepers (4 or <4 hrs. sleep), risk of failing in work and academics is double than the normal sleepers (7-8 hrs. sleep). Results of a study by Pilcher and Huffcut (1996), suggested that long-term and short-term sleep deprivation is positively related with the attention difficulties and interest level of young students. While partial sleep deprivation has significant association with the mood swings of individuals. Different studies have indicated clearly that adequate sleep pattern (6-8 hours sleep) is important for the consolidation of memory which has important implication for the academic success of students. Findings of a longitudinal study to assess the effects of sleep loss on youngsters by Fredriksen and associates (2004) indicated a direct association of sleep loss with high stress, poor self-esteem, and below average performance in studies.

This research conducted to measure the sleep pattern of young students and its effects on their academic achievement and learning skills. The findings will be useful to make effective strategies to promote healthy life style and good mental functioning among youngsters. Adequate sleep is an important factor to increase work performance whether in academics or at job place, which is taken least seriously by the young adolescents as well as their parents and teachers as adults.

Rationale of the study

Sleep is significantly important for the concentration, good memory, attention and efficient working during day time. Mostly young generation does not give

importance to their sleep and they usually used to awake late night. This unhealthy life style affects their social relations, studies, learning abilities and academic skills negatively. Thus, it is the need of the hour to explore the sleep pattern (hours of sleep taken by an individual) of young adolescents and its relationship with their academic achievement. Findings of the study would be beneficial for the parents and teachers to guide the students about importance of taking sleep during night and its relation with the good academic performance. It would be informative for the students to understand the relationship of the sleep pattern with the increased work performance.

Objectives

The research objectives were:

1. To explore the differences in the sleep pattern of high and low academic achievers
2. To measure the gender differences in the sleep pattern of the high and low academic achievers.

Hypotheses

Following hypotheses were formulated;

- H 1:** There would be significant differences in the sleep pattern of the high and low academic achievers.
- H 2:** High academic achievers would have more adequate sleep pattern.
- H 3:** There would be non-significant gender differences in the sleep pattern of high and low academic achievers.

Methodology

Participants

The sample (N=120) consist of college students. The participants' age ranged from 17-19 years with mean age 18.23 years. The sample was recruited through purposive sampling technique from four different colleges of Hyderabad city. Data were collected through purposive sampling technique to collect the sample of high and low academic achievers. The students with less than fifty five percent marks ($< 55\%$) in the first-year class were low achievers, whereas those who had secured more than seventy percent marks ($> 70\%$) in the first year were high achievers. Academic achievement was assessed from the result sheets of first year issued by the Board of Intermediate and Secondary Education, Hyderabad (BISE, Hyd.) for the authentication of the results. Mark sheets of the participants were collected before the administration of the questionnaire. There were sixty (n=60;

male participants=30, female participants=30) high achiever participants and sixty (n=60, male participants=30, female participants=30) low academic achievers. The sample size (n=120; high achievers =60, low achievers = 60) is relatively small in terms of gender (Male high achievers/low achievers=30, Female high achievers/low achievers= 30), but the main focus was to explore the sleep pattern style of the young adolescent and to measure the differences in the sleep pattern of the high and low achievers.

Measures

Two instruments used; (a) Sleep pattern scale and (b) Personal information form.

(a) Sleep pattern inventory (SPI)

Sleep pattern scale was used to measure the sleep pattern of the participants. It is comprised of fourteen items with five-point Likert-like response scale. The score of five was assigned to "almost always" almost never". High score on the inventory shows the adequate sleep pattern (7-8 hours sleep), and low score indicates poor or inadequate sleep pattern (less than 4 hours sleep). The reliability coefficient $r = 0.78$ indicates that it is a reliable instrument to measure the sleep pattern of young adolescents.

(b) Personal information form

To gather the demographic information of the sample related to age, gender, education, having personal cell phones, laptop, social status, grade or marks in first year, education of father and mother etc. demographic schedule was used.

Procedure

At first permission was taken from the principals of the colleges to collect the data. The rapport was developed, purpose of the research was explained and informed consent was taken from the participants. The academic record of the participants was gathered from the administration office of the college. Before the administration of the scale, clear instructions were given to the participants that they have to answer every statement. They give response as they do or feel. Personal information questionnaire was filled up before sleep pattern inventory. The research subjects were ensured about the confidentiality of the results and these will only use for the research purpose. They were further informed that they can ask any question at any time about the statements.

Analysis of Results

For hypotheses testing measure of mean differences was used for analysis.

H1: There will be significant differences in the sleep pattern of the high and low achievers.

H2: High academic achievers would have more adequate sleep pattern.

Table-t

t-value, mean and standard deviation of the scores of the participants on the sleep pattern inventory

Scale	High-Achvrs (n=60)		Low-Achvrs (n=60)		t-value	Cohen's d
	Mean	SD	Mean	SD		
Adequate sleep	33.57	7.36	13.18	4.25	5.46***	3.39
inadequate sleep	12.70	8.42	35.44	9.31	4.12***	2.54

d.f=118, *** $p < .001$

Table -1 is indicating significant mean differences in the sleep pattern of the high and low achievers. Results are indicating that high academic achievers have adequate sleep pattern as compared to low achievers. The mean value (Mean=33.57, SD=13.36) of the high achiever participants is greater as compared to the mean value of the low achievers (Mean=13.18, SD= 14.25) on adequate sleep pattern which indicates that high achievers take adequate sleep than the low achievers. Low academic achievers had inadequate sleep pattern. Thus, hypotheses one and two are confirmed.

Following tables 2 and 3 are presenting analysis of gender differences for hypothesis3.

H 3: There would be significant gender differences in the sleep pattern of the high and low academic achievers.

Table-2

t-values of the scores of the male (n= 30) and female (n= 30) high academic achiever participants on the sleep pattern inventory

Scale	Male H. Achvrs		Female H. Achvrs		t-value	Cohend
	Mean	SD	Mean	SD		
Adequate Sleep	28.11	9.21	31.24	9.80	1.02	0.34
inadequate sleep	13.27	7.51	8.26	10.16	0.07	0.42

df=58

Table-3

t-values of the scores of male (n= 30) and female (n= 30) low academic achiever participants on the sleep pattern inventory

Scale	Male low Achvrs		Female low Achvrs		t-value	Cohen'sd
	Mean	SO	Mean	SO		
Adequate sleep	16.82	4.50	14.05	8.79	1.61	0.39
Inadequate sleep	22.15	10.26	25.13	9.02	0.96	0.30

df=58

Analysis of results in table 2 and 3 are indicating non-significant gender differences in the sleep pattern of high and low achievers. Thus, hypothesis three is not verified. Results indicated that, whether boy or girl high achievers, they take proper sleep and low achievers whether male or female have inadequate sleep pattern.

Discussion

Analysis of results indicated that those youngsters who take adequate night sleep of six to eight hours have better academic achievement levels as compared to those who have inadequate night sleep pattern of having less than two to four hours of sleep. Findings pointed out that reduced sleep hours at night affect the work performance during day time. These findings are in line with the previous study by Williams and Aderanti (2014). They conducted study on university students and found a positive relationship of academic performance with the adequate sleep.

Proper night sleep of eight hours is important for the active and alert mind for better work and learning performance in daytime. Mostly students delay their academic tasks and waste more time in leisure activities. They use to stay awake till late night and remain busy in social networking rather than studies or academic tasks. It disturbs their social interaction and cognitive functioning because daily disturbed or least hours of night sleep alters the mood, memory, attention and concentration abilities. Parents must observe the activities and sleep schedule of their children and guide them to follow an organized and healthy life style. It is beneficial for them in every walk of life at all ages. They have to play their role as an active productive member of the society. As if the habit of awakening till late night due to use internet or mobiles can affect them negatively in terms of poor work performance and inefficiency at work place. Some psychophysiological studies have reported an increase risk of the early onset of

Alzheimer disease due to least sleep at night. Additionally, the hazards of excessive technology using for any reason also have been indicated by several studies (Ekinici, Celie, Savas, & Toro, 2014). Therefore, it is significantly important for the students to follow a schedule and be organized to complete their academic tasks within proper time limit. They should not compromise on the night sleep to have proper mental functioning, which is important for consolidation of memory and complex learning activities. The unhealthy life style of late-night sleep and late wake-up on weekend among adolescents or children should be prohibited firmly by parents, teachers and other significant adults. And guidelines must be provided to their children about the effects of night sleep. The findings support the viewpoint that insufficient sleep patterns not only affect the mental and physical health of the students but their achievement level too.

The policy makers must take steps to set guidelines for different mobile companies about their lowest rate night packages. The excessive use of mobiles and internet is destroying the socio-moral fabric of the society too, beside damaging the capacity of efficient working potentials, psycho-physiological health, family and social interaction of individuals. It has become a cry of hour to address these issues seriously to prosper our human resource and potentials of our young generation, because they are the tomorrow of our country.

Conclusion

It is concluded, that increasing use of technology is affecting social behaviour of individuals; the habits of awakening till late night and wake-up lately is penetrating in our society rapidly. Adequate night sleep is essential for restoring cognitive potentials, better learning in terms of good academic achievement and efficient work performance during day-time. Proper night sleep significantly affects attention, memory, decision making ability and alertness of individuals. Generally, young students do not give importance to the night sleep. It is not beneficial for the individuals of any age group but young generation is affecting more in terms of low academic achievement as well as low work performance. Mostly habit pattern stays with individual and it reflects in their life style. If youngsters may follow same sleep pattern in future, it will cause decline in their work performance which is not the demand of social and professional life ahead. Proper sleep improves socio-psychological interaction, and cognitive functioning of the individuals. Thus, it is important for young adolescents to keep remember that proper sleep at night will make them healthy physically as well as socio-psychologically besides improving their potentials and success in their life ahead.

Recommendations

- Youth is a potential human resource and important segment of the society, so policies should be made for their betterment, especially in terms to limit the use of mobiles and internet during late night, through controlling the lowest rate night packages of using net and cell phones.
- Awareness seminars be arranged at all levels of education including schools, colleges, and universities by social and educational researchers to inform about the hazards of late-night sleep and its importance for socio-psychological health of individuals of all ages.
- Parents must guide their young children during studies about the impact of proper night sleep on their good physical and psychological health.
- Young students should be advised by teachers and parents consistently to follow an organized schedule for studying and completing academic tasks to take their sleep adequately at night.
- Parents should do efforts firmly that their children follow a healthy life style (early to bed and early to rise) which will not only be helpful to solve learning problems and academic but it will be a source to perform efficiently in future life.

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