

Effect of sleep quality on perceived academic performance



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Purpose: The purpose of this paper is to study the impact of the quality of sleep of student of premier MBA institutes on their perceived academic performance. This study also aims to establish whether the burnout faced by students behaves as a mediator in the relationship between the sleep quality and the perceived academic performance. Finally, keeping “ work experience” as a moderator, we also aim to study whether students with more than 12 months of work experience show any difference in the results when compared to those with less than 12 months’ experience.

Design/methodology/approach: A questionnaire was designed using 3 pre-existing scales to measure Sleep Quality, Burnout and Perceived Academic Performance. This questionnaire was floated in the electronic format to students of XLRI Jamshedpur and other schools of business in India. A total of 163 students responded with completely filled in surveys.

Findings: The study concluded that the Sleep Quality does not have a direct impact on the Perceived Academic Performance in the case of students without work-experience. However, the indirect effect is significant, and Sleep Quality affects Burnout, which in turn has an impact on Perceived Academic Performance.

Research limitations/implications: One of the major limitations of the study was that majority of the respondents were from only one Business-school, viz. XLRI Jamshedpur. In order to generalize the result across all B-school students of India, more participants from other B-schools need to be contacted. Also, while the Academic Confidence Scale, used to measure perceived academic performance, is better than using only grades, a better

scale needs to be developed to thoroughly measure the performance of students not only in examinations but also in class through learning capacity, etc.

Originality/value: Previous studies have identified that there is certainly an impact of duration and quality of sleep on the academic performance of high-school (and younger) students, as well as on the organisational performance of professionals. However, no study has previously been conducted for students of MBA courses.

Keywords: Sleep Quality, Perceived Academic Performance, Burnout, Exhaustion

Paper Type: Research

Introduction

As the corporate world begins to get more competitive, greater demands are made by organisations from employees and even more from those in managerial capacities. These demands are met by working professionals who modify their lifestyles in order to dedicate more time and effort towards achieving the high standards set by a demanding corporate world. This includes habits such as skipping breakfast and sleeping less. Such characteristics are observed also among B-school students who live on or near campus. Apart from low duration of sleep, many students also have irregular sleeping patterns and their quality of sleep is often not very high due to disturbances and other reasons. This irregular sleep pattern and low quality of sleep result in a drop in perceived academic performance of students.

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The high levels of academic rigour encouraged by the premier B-schools of India result in a high requirement of hard work and a very large number of hours per week to be put into coursework. A continued high level of demand can result in students feeling a sense of burning out-which is defined by a drop in motivation levels to work, mental exhaustion and sometimes also leads to students questioning their courses and their own abilities. Irregular and poor quality sleep is likely to result in a quicker onset of burnout among students. It is to be expected that once students start burning out, their performance in class and their confidence in their academic capabilities begin to suffer.

Prior studies have observed and established the effect of sleep quality on students of high-school and of younger ages. Some studies have also been carried out on students of under-graduate courses. However, our study is primarily aimed at observing these effects on students of Business schools only. We are also aiming to establish whether or not the burnout level of a student is a significant mediator on the effect of sleep quality on perceived academic performance.

Research background and hypotheses

Sleep Quality

Sleep is a complex phenomenon to measure. Sleep quantity is considered universally as a good measure to evaluate this phenomenon but results indicate that for studies, researchers should use sleep quality than sleep quantity which includes many other factors other than just the duration of sleep (Vail-Smith et al, 2009). In some studies, sleep quality was measured

by factors such as sleep environment, noise disturbances, other sleep accessories (Triangle Business Journal, 2010). Many other studies measured sleep by collecting information regarding not just the number of hours of sleep but also time awake in the middle of the night, time taken to fall asleep & related factors (Business Wire, 2009)

To suit our requirement for measuring sleep quality, Pittsburgh Sleep Quality Index (Sleep Medicine Index, 2010) was used. This index includes not only the number of hours of sleep but also any disturbances in sleep, sleeping & waking up time, and the subsequent effects of the sleep pattern on the subsequent day's functioning.

The Pittsburgh Sleep Quality Index (PSQI) (Buysse et al. 1989a) helps to discriminate between good and poor sleepers. The different dimensions covered by this index are Subjective Sleep Quality, Sleep Latency, Sleep Duration, Habitual Sleep Efficiency, Sleep Disturbances, Use of Sleep Medications, and Daytime Dysfunction. It is comprises of 19 self-rated questions & 5 questions that are by a roommate. In the end it generates seven scores by summing up the component scores of the seven components.

For our research purpose, we have taken only the 19 self-rated questions only since in the B-School context many students stay in single rooms in hostels. Hence, including the other 5 questions will not aid in the research.

For the scale items, see Appendix 1.

Burnout

No doubt the sleep quality affects the perceived academic performance but it alone will keep the research restricted. Hence, a mediating variable is used to explain the whole effect. So burnout is used as a mediator here.

Burnout is a concept that is used mainly in the work related context. It is defined as a syndrome of emotional exhaustion, cynicism or depersonalization, and reduced personal efficacy. Common symptoms of burnout are stress, exhaustion, fatigue, lack of concentration etc. As stated above, usually burnout is used in work related context especially for executives, CEOs etc (Anonymous, 2002); however, we have extended its usage for B-School students as well. Since a B-School environment demands meeting deadlines, toiling hard & working for long hours- all of which are reasons that can cause burnout.

To measure Burnout, School Burnout Inventory (SBI) is used. This inventory comprises of three dimensions- exhaustion, cynicism towards meaning of school & sense of inadequacy. Out of these, only first two namely, exhaustion & cynicism are used in our research; inadequacy is not measured since it is not applicable for our sample students.

For the scale items, see Appendix 2.

Perceived Academic Performance

Instead of taking the academic Grade point as a measure of the academic performance of a student, we took the perceived academic performance as an effective construct to measure the capability of a student. Since academic

performance means understanding, assimilating & reproducing the teachings & not getting good grades alone. This has been cited as the militation in many studies before. According to researchers, learning & satisfaction from the course sheds more light on the topic of academic performance. (Garger et al, 2010)

To measure the perceived Academic Performance for the B-School student, Academic Confidence Scale (ACS) is used. This scale has six factors namely, studying, understanding, verbalizing, clarifying, attendance & grades. Out of these, verbalizing & clarifying are not very relevant variables in a B-School context since these are basic skills which are expected from all students of B-schools.

For the scale items, see Appendix 3.

Work Experience as Moderator

Research has been done linking sleep deprivation with burnout in corporate environment. The continuous stress that people in jobs feel is more especially at the higher levels in the organization (Anonymous, 2002). This continuous exposure to the high levels of stress gives students with more than 12 months of work experience more ability to handle low quality sleep and therefore, it should not affect their performance.

Sleep Quality & Burnout

Burnout has a variety of causes and symptoms that erode the mental, emotional and spiritual quality of life. (Francis, 2006) Among other symptoms, sleep quality is considered as one of the major symptoms of

burnout in humans. During sleep our body releases hormones etc which are used to repair damaged cells etc. Lack of sleep stops this process and hence leads to irritation, frustration, fatigue-all symptoms of burnout (Francis, 2006). Human body has a natural way of relieving stress through sleep (Spencer, 1987). Research has been done linking sleep deprivation with burnout in medical students (Dyrbye et al, 2006) & corporate (Anonymous, 2002) but no such study has been done in B-School students. This research gap has been identified & used in our model.

Burnout and Perceived Academic Performance

Students who feel energetic & feel the vigour to perform give good academic results compared to their counterparts (Schaufeli et al, 2002). Burnout levels of students indicated by stress, fatigue etc cause low performance by students in academics & this result is true not just for people of a particular nationality but has been proved for people of many countries (Schaufeli et al, 2002).

This result can be used here as well for linking the burnout to academic performance of B-School students. Since in a B-School environment, there is a high stress & work load which causes burnout to a large extend & hence can affect the academic performance of the students.

Sleep Quality and Perceived Academic Performance

In the past, extensive research has been done in the area of sleep affecting academic performance. Most of the students who complained about sleep difficulties showed a drop in the performance compared to the others.

(Anonymous, 2008). Regular & proper sleep patterns among others are

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healthy habits which affect the grades a student gets. (Paul et al, 2008). Especially in a college environment, the students who take enough sleep, tend to score better than the others who sleep less. (France. 2009). Sleep patterns of college students are unique since it is influenced by work-related stress, parties, “ communal living arrangements” etc. (Vail-Smith, 2009) This is an interesting observation as people’s attitude here are determined, to a large extent, by the group dynamics.

Methods

Sample

The targeted sample consisted of B-school students studying in a 2-year full-time Post-Graduate course in MBA. Most of the respondents were students of the first year who have spent approximately 9 months in the course.

However, some students of the second year have also been contacted to take their responses. The questionnaire, consisting of 33 items, was hosted online on Google Documents and the link to the form was sent personally to students via email and instant messages. The form contained no personal information that could be used to identify the respondents.

In total, 163 respondents filled in the questionnaire. Of these, it is estimated that 131 respondents are from among the first and second year students of XLRI Jamshedpur. The remaining 32 respondents are from other institutes across India.

Measures

Our model consists of 3 constructs and one moderator as given below. The constructs were measured using modified versions of pre-existing scales as indicated below.

Figure 1: Model

Sleep Quality

Work Experience

Burnout

Academic Confidence

Sleep Quality

Sleep Quality was measured using the Pittsburgh Sleep Quality Index (PSQI), a 24-item scale that consists of various types of questions ranging from subjective questions to multiple-choice questions, as well as some questions based loosely on the Likert Scale. Of the 24 items present on the PSQI, we have modified the scale to exclude the last 6 items (refer Appendix 1), since these are not applicable to B-school students. These questions are to be answered if the respondent generally sleeps with a partner or room-mate, and if the room-mate has observed any irregular sleeping patterns.

Burnout

Burnout has been measured by the School Burnout Inventory, developed by Salmela-Aro et al (Salmela-Aro, K. et al, 2009). This inventory was developed to be used on higher secondary school students and contains 9 items that

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measure burnout on 3 dimensions-exhaustion due to coursework, cynicism towards school and inadequacy at performing well at school. Of these dimensions, we have chosen to study only exhaustion and cynicism, since inadequacy is not applicable to students of the age of MBA students.

Therefore, the scale has been modified to include only 7 questions in the final questionnaire (refer Appendix 2).

Perceived Academic Performance

The perceived academic performance is measured by using the Academic Confidence Scale (ACS) (Sander, P. & Sanders, L., 2003). This scale consists of 24 items based on 5-point Likert scale. The questions measure Academic Confidence in 6 dimensions-Studying, Understanding, Attendance, Grades, Verbalizing, Clarifying. Of these 6 dimensions, the last 2 are not applicable for students of B-schools, since it is assumed that these students would show an accomplished level of verbalizing and clarifying aptitude. Of the remaining questions, we have chosen 8 items (Appendix 3) that display the best coefficients for the remaining 4 dimensions.

Analysis

The analysis is carried out for both Moderator Analysis and Mediator Analysis. For types of analysis, we are using the four-step method developed by Baron and Kenny (Baron, R. M. & Kenny, D. A., 1986). For Moderator Analysis, we initially select all cases for which the student has work experience greater than 12 months and carry out the analysis. Similarly, the same is carried out for students having greater than 12 months of work experience. Finally, all cases are taken to carry out the Mediation Analysis. In

order to measure the significance of mediation analysis, the Sobel Test is carried out as well.

Results

Sleep Quality and Burnout

The regression analysis was carried out to find out the relationship between sleep quality & burnout. It was carried out for both the values of the bi-variate moderator.

Relationship

Significance

Unstandardised coefficient

Standardised coefficient

R Square

Work experience < 12m

0.000

0.453

0.405

0.164

Work experience > 12 m

0

0.428

0.444

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0. 197

Overall

0

0. 461

0. 442

0. 195

Table 1: Results for Sleep quality & Burnout

As we can see from the above table, the relation is significant in all the three cases & the impact is also almost the same. From the values of beta and B, we can interpret that for every B-School student a poor sleep quality leads to increase in burnout. This could be attributed to the fact that burnout is a physical & a mental condition which is same for the all the human beings. Every human being needs sleep to recover energy though the time duration of the requirement may be different. But a minimum amount of sleep is necessary for all.

Burnout and Perceived Academic Performance

The regression analysis was carried out to find out the relationship between burnout and academic performance. It was carried out for both the values of the bi-variate moderator.

Relationship

Significance

Unstandardised coefficient

Standardised coefficient

R Square

Work experience < 12m

0.001

-0.53

-0.355

0.126

Work experience > 12 m

0.002

-0.541

-0.355

0.126

Overall

0

-0.527

-0.353

0. 125

Table 2: Results for Burnout & Perceived academic Performance

As we can see, here also burnout level increase leads to a decrease in the perceived academic performance of an individual. This shows that a person's perceived academic performance is affected by the burnout level. This in turn proves the hypothesis stated and reinforces the previous researches done on the same subject.

Sleep Quality and Perceived Academic Performance

The regression analysis was carried out to find out the relationship between sleep quality & perceived academic performance. It was carried out for both the values of the bi-variate moderator.

Relationship

Significance

Unstandardised coefficient

Standardised coefficient

R Square

Work experience < 12 m

0. 883

-0. 040

-0. 024

0. 001

Work experience > 12 m

0.009

-0.443

-0.302

0.091

Overall

0.081

-0.213

-0.137

0.019

Table 3: Results for Sleep quality & Perceived Academic Performance

As we can see that the significance level is within the confidence interval only for the values with work experience > 12 months. The likely reason for this can be that people with work experience are used to maintaining high pressures on the job. Working round the clock, meeting deadlines etc are a part of their lives and they don't feel much difference when they enter a B-School. In contrast to this, freshers (college graduates) are not accustomed to a hectic schedule.

The model with the results is shown below:

Figure 2: Model with the moderator values

Values on the left hand side are values for work experience less than 12 months;

Values on the right hand side are values for work experience more than 12 months

***symbolises that the result is significant**

Discussions and Implications

As we can see, that the total effect is significant but is attributed to the indirect effect only and not to the direct effect. Also, the net magnitude of the total effect is very less. The factors that can be attributed to these results can be as follows.

Over a period of time, human body adapts itself to any routine. Here the timing of our research plays an important role. Most of our respondents are 1st year MBA students who have spent almost nine months in a B-School. Nine months is a long enough time for the human body to adapt to such any change in routine. Had this research been conducted when the students entered the B-School, results might have been different

The age group of all the respondents is between 20 to 30 years. In this age group predominantly, the human body has the energy, stamina & the will to withstand any adversities in the external environment. If such a study is conducted in people of a different age group, their body might not have the vigour and will to withstand harsh environment circumstances

Also, as we saw that the direct relationship between sleep quality & perceived academic performance is significant only in the case of people

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having work experience more than 12 months. As we know, across B-Schools in India, number of students with prior work experience is less compared to the others. Hence, had the research been conducted for B-Schools overseas as well, the results might have been different with a significant direct effect as well.

This research highlights the relationship between poor sleep quality & burnout of students in B-Schools. This further leads to a dip in their perceived academic performance. To avoid this, B-school administration should consider preparing the schedule or curriculum of the academic year in such a way that the students don't need to compromise on their sleep quality. This will help them maintain attentiveness, concentration, etc. & this in turn will help them improve their perceived academic performance. Also, the hectic life-style in a B-school takes its toll on mental health of the students by making them cynical in their approach towards their courses/academics due to "burnout".

Limitations

Following are the limitations we encountered during this research study:

Sample size not large enough: Although, responses from 163 respondents were collected but, still larger number of respondents if covered would lend more accuracy to the research findings. Also, majority of the respondents (about 80%) are XLRI students, research findings could be much more accurate if we can collect more responses from other B-school students.

Timing of the survey: Since, after spending about 9-10 months in a B-school environment, students become habitual to this kind of a life style, so the <https://assignbuster.com/effect-of-sleep-quality-on-perceived-academic-performance/>

impact of sleep quality on burnout or their perceived academic performance subsides. Had this research been conducted when the students would have just entered the B-school, responses would have been more impactful.

Age group of the respondents: Since, most of the students in a B-school are in the age group of 20 to 30 years, they have much more will power & their capabilities in terms of adapting to the needs of the environment are much more. Thus, they easily adopt to the lifestyle requirements of a B-school.

Homogeneous group: These responses are collected from the respondents belonging to the same race & culture, thus, the group is homogeneous.

Responses should also be collected from the students of foreign B-schools who belong to different race, culture, religion & ethnicity & then, the findings would be far more accurate & diverse.

Group Dynamics: Group Dynamics play a very important role in influencing the behaviour of B-school students. Since, almost everybody sleeps late in the night, so it becomes a norm & nobody feels that he/she is not getting enough sleep or he/she is being sleep deprived.

Future Scope

The scope of this research can be extended in future as follows:

Increase the sample size to include students from other B-schools also, not only students from top B-schools. Also, students from foreign B-schools can be included in the sample.

Similar research can be done for students who are not B-school students but, tend to follow similar life-style, like aspirants preparing for competitive entrance examinations.

As already stated above, this research should include the responses of the students studying in foreign B-schools. Probably, then we will be able to make general statements about the characteristics of all B-school students.

We need to measure the effect of Group dynamics also in our research study since group behaviour is known to influence the norms in the group.

The timing of the research study is very important. Research should be conducted at the start of the B-school session for new admits who have not become habitual to B-school lifestyle.

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Appendix 1

Pittsburgh Sleep Quality Index

INSTRUCTIONS:

The following questions relate to your usual sleep habits during the past month only. Your answers should indicate the most accurate reply for the majority of days and nights in the past month.

Please answer all questions.

1. During the past month, what time have you usually gone to bed at night?

BED TIME _____

2. During the past month, how long (in minutes) has it usually taken you to fall asleep each night?

NUMBER OF MINUTES _____

3. During the past month, what time have you usually gotten up in the morning?

GETTING UP TIME _____

4. During the past month, how many hours of actual sleep did you get at night? (This may be different than the number of hours you spent in bed.)

HOURS OF SLEEP PER NIGHT _____

For each of the remaining questions, check the one best response. Please answer all questions.

5. During the past month, how often have you had trouble sleeping because you . . .

a) Cannot get to sleep within 30 minutes

Not during the past one month _____

Less than once a week _____

Once or twice a week _____

Three or more times a week _____

b) Wake up in the middle of the night or early morning

Not during the past one month _____

Less than once a week _____

Once or twice a week _____

Three or more times a week _____

c) Have to get up to use the bathroom

Not during the past one month _____

Less than once a week _____

Once or twice a week _____

Three or more times a week _____

d) Cannot breathe comfortably

Not during the past one month _____

Less than once a week _____

Once or twice a week _____

Three or more times a week _____

e) Cough or snore loudly

Not during the past one month _____

Less than once a week _____

Once or twice a week _____

Three or more times a week _____

f) Feel too cold

Not during the past one month _____

Less than once a week _____

Once or twice a week _____

Three or more times a week _____

g) Feel too hot

Not during the past one month _____

Less than once a week _____

Once or twice a week _____

Three or more times a week _____

h) Had bad dreams

Not during the past one month _____

Less than once a week _____

Once or twice a week _____

Three or more times a week _____

i) Have pain

Not during the past one month _____

Less than once a week _____

Once or twice a week _____

Three or more times a week _____

j) Other reason(s), please describe _____

How often during the past month have you had trouble sleeping because of this?

Not during the past one month _____

Less than once a week _____

Once or twice a week _____

Three or more times a week _____

6. During the past month, how would you rate your sleep quality overall?

Very good _____

Fairly good _____

Fairly bad _____

Very bad _____

7. During the past month, how often have you taken medicine to help you sleep (prescribed or “over the counter”)?

Not during the past one month _____

Less than once a week _____

Once or twice a week _____

Three or more times a week _____

8. During the past month, how often have you had trouble staying awake while driving, eating meals, or engaging in social activity?

Not during the past one month _____

Less than once a week _____

Once or twice a week _____

Three or more times a week _____

9. During the past month, how much of a problem has it been for you to keep up enough enthusiasm to get things done?

No problem at all _____