



Exploring Students' Sleeping Awareness and Possible Causes of Falling Asleep in Class

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Abstract

The purpose of this survey was to identify whether students of Taktse Central School get adequate sleep or not, which has a direct impact on the academic achievement of the students. Further, it also explored some of the possible causes of students falling asleep in class. A two-part survey questionnaire consisted of student's demographic details viz. gender, age, and grade level. The second part has 13 objective questions. Questions 2 to 7 were a four-point Likert scale that drew students' sleeping awareness, and the other remaining questions 2, 8, 9, 10, 11, and 12 asked some of the possible causes of dozing off in class. Data were collected anonymously by sharing the link through online Google forms. Descriptive statistics were used to analyze the data. There were 336 participants consisting of 49.1% female and 50.9% male, with ages ranging from 15 to 22. The results indicated that students of Taktse Central Students rarely get adequate sleep, and some of the main causes of sleeping in class include having to wake up early in the morning, having a busy schedule, and prolonged periods of teaching. Inadequate sleep may contribute to adolescents' health problems, increase social issues and have a negative impact on academics. A solution to sleep deprivation among students could include making changes in the school timing, such as delaying the early morning studies, deferring school start time and also shortening teaching periods.

Subject Areas

Medical Education, Nursing

Keywords

Sleeping Awareness, Causes of Sleep Deprivation, Sleep in Class

1. Introduction

The natural condition of sleep is characterized by decreased body movement, a

limited ability to respond to outside stimuli, and loss of consciousness (Dhammika, n.d.) [1]. The main function of sleep is to rejuvenate the body and mind. Further, sleep serves a variety of functions such as repair and growth, learning and memory consolidation and restorative processes through an active, repetitive, and reversible action (Orzeł-Gryglewska, 2010) [2]. However, if sleep is deprived, or if there are any irregular sleeping patterns, they may affect one's physical, psychological, and social well-being. The enlightened one has once told to his disciples that sleeping during the day and being up all night would negatively impact their lives (Dhammika, n.d.) [1].

Further, enough sleep is found to be an important factor to fulfill academic outcomes. The sleep-wake cycle, one of our biological rhythms, is driven by a circadian timing system which is influenced by some factors such as physiological function, school and work schedules, and many others (Lima, Medeiros, & Araujo, 2002) [3]. The inability to maintain an adequate level of wakefulness is found to be a harmful factor for students' learning ability (Johns & Hocking, 1997) [4]. Hence, this survey reports on whether students at Taktse Central School get enough sleep and on some possible causes of dozing off during class. These components incorporate the applicable criteria that follow.

1.1. Aims of the Study

The main aim of the study is to find out if students in the school are deprived of any sleep and what would be the possible causes of them to nod off in class.

1.2. Situational Analysis

Taktse Central School is a governmental school located in the central part of Bhutan. It was opened in the year 2004. The school has boarding facilities, and enrolls students from grade IX to XII. Students from various parts of the country study in the school under a government scholarship. All students stay as a boarder except a few. Taktse's curriculum includes programs that are spiritually bound, culturally derived values and language through the subjects of Buddhist philosophy, history, dzongkhag (national language), painting, music, grammar, information technology and English. The school is like a semi-monastic institute with a jam-packed schedule. The sole purpose of the plan is to keep students engaged. For example, student's rising bell starts at 5:00 am in the morning (however, the students have to wake up earlier than this to get water and toilet), followed by washing and morning prayer at 5:20 am, and then the morning study. The day activities end at 6:10 pm, followed by evening prayer, dinner, and night study until 9 pm. Students hardly get any breaks or recreational activities for themselves in a day. Even short breaks like intervals, lunch and evening tea breaks are being used for academic follow-up.

Hence, it is questionable whether students in the school get enough sleep considering the impacts of sleep deprivation, in terms of health, social, and academic performance. Thus, pioneering the conduction of a survey regarding students

sleeping awareness, and the possible causes of sleep during class hours was found to be imperative.

2. Literature Review

“Sleep is a naturally recurring state of mind and body, characterized by altered consciousness, relatively inhibited sensory activity, reduced muscle activity and inhibition of nearly all voluntary muscles during rapid eye movement, and reduced interactions with surroundings” (Hasan, Heyat, Siddiqui, Azad, & Akhtar, 2015: p. 4) [5]. When humans sleep, our bodies go into a temporary state of rest and our metabolism slows down, allowing the body to produce less heat (Johnson, 2021) [6]. Therefore, it is necessary to acquire enough sleep for health and the wellbeing of people of all ages. According to Gamsky (2016) [7], getting good sleep will improve the student’s mental and emotional wellbeing. It further improves their immune system, balances hormones, boosts metabolism, and improves brain function. Lack of sleep has tremendous negative effects on physical performance and it is also detrimental for the health of the people (Knowles *et al.*, 2018) [8]. In addition, insufficient sleep leads to reduction of maximal muscle strength in compound movements. People cannot stay for fifteen days without sleeping but they can stay for fifteen days without food. When the patient cannot sleep during his illness, it gives more worries to the doctor. So, the doctor first lets the patient sleep to regain the energy required to heal (OSHO, 2001) [9].

Numerous studies such as Curcio, Ferrara, and De Gennaro (2006) [10] have seriously stressed the strong connection between sleep and the student learning ability and academic performance. Several studies have shown correlative findings, where sleep time was closely associated with academic achievement. Some of the strong findings as cited in Curcio *et al.* (2006) [10] suggested that the differences in performance level of the students in education is due to persistent sleep deprivation resulting day time drowsiness. Further, Mehta (2022) [11] revealed that the academic accomplishment and intelligible functions are drastically affected by sleep and emotional state of mind.

Sleep is paramount for children from a young age. El-Sheikh, Buckhalt, Mark Cummings, Keller, and Psychiatry (2007) [12] have found that the lack of enough sleep has lots of negative consequences such as disruptions in marital conflict, emotional security, and social adjustment. The above-mentioned disruptions were closely related to a child’s social problems. According to Dorrian, Centofanti, Smith, and McDermott (2019) [13], the social behavior of children is negatively impacted by lack of sleep which comprises behavioral and emotional control. Moreover, Gordon, Mendes, and Prather (2017) [14] suggested that sleep plays an important role in social interactions.

It has been noticed that the students in our school have not received enough sleep. It is evident from the fact that many students were found sleeping during the early hours of the day, even during short recess like interval and lunch break. This issue has been raised by the majority of the teachers in the school proving

that students may not be getting enough sleep. It is also proved through the loss of concentration in class and low academic performance. In addition, children were found inactive and couldn't contribute much in class activities.

The possible causes for the problems addressed above might be due to the tight schedules in the school. Students are fully engaged from morning 5 am till 9 pm, the only recreational time they enjoy is evening tea break/games period just for 20 minutes after the 6th period or it could be because of subject nature. As our school is a pure Rigzhung school, the majority of subjects are taught in Choekey, the Tibetan language, which compels teachers to use more of a lecture-based teaching method. Lectures are usually dull, and there is nothing for the children to do but sit and listen passively, ultimately forcing them to sleep. Prolonged teaching period of one hour could be another possible cause for children to fall asleep in class. In addition, getting up early in the morning, disturbing friends in the hostel and crowded classrooms could be some of the reasons for making children lethargic.

Research has shown that the proper sleep time for infants is between 12 and 15 hours (Patel, Reddy, & Araujo, 2022) [15]. The researchers further assert that 9 - 11 hours of adequate sleep is required for school-aged children. Similarly, Patel *et al.* (2022) [15] stated that for teenagers, 8 to 10 hours of sleep is considered appropriate. The young adult needs 7 to 9 hours whereas for older adults 7 to 8 hours of proper sleep is essential (Patel, Reddy, & Araujo, 2022) [15]. However, it is questionable whether the students of Taktse Central School are sleep deprived or get adequate sleep. Moreover, not even single research related to sleeping awareness has been carried out either in all the levels of Bhutanese schools or in the monastic institutions across the country.

3. Research Methodology

This current study employs cross sectional survey research design. This approach allows the researchers to collect data at one point in time and also the design helps to collect current attitude and practices of the participants over a short period of time (Creswell, 2012) [16]. Further, this design measures community's needs of educational services related to school programs, courses, school facilities and projects (Creswell, 2012) [16].

3.1. Research Questions

Are students in Taktse Central School getting enough sleep? What are some of the possible causes that make students sleep during class hours?

3.2. Participants

The participants consisted of 49.1% Female and 50.9% Male (N = 336), age ranging from 15 to 22 as shown in **Table 1** and **Table 2**. Majority of the participants were aged between 17 - 18 with 27.1% followed by participants' age between 18 - 19 with 26.5%. The respondents were from grade nine to twelve. The

entire students at the school participated for the research. All participants completed a survey concerning sleeping awareness. The convenience sample was used because it is possible to use naturally formed groups (e.g., a classroom, an organization, a family unit) or volunteers (Creswell, 2009) [17].

Table 1. Gender of the participants.

	Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	165	49.1	49.1	49.1
	Male	171	50.9	50.9	100.0
	Total	336	100.0	100.0	

Table 2. Age of the participants.

	Age	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	15 - 16	11	3.3	3.3	3.3
	16 - 17	52	15.5	15.5	18.8
	17 - 18	91	27.1	27.1	45.8
	18 - 19	89	26.5	26.5	72.3
	19 - 20	62	18.5	18.5	90.8
	20 - 21	20	6.0	6.0	96.7
	21 - 22	11	3.3	3.3	100.0
	Total	336	100.0	100.0	

3.3. Research Instrument

The sleeping awareness questionnaire was adapted from Student Health and Wellness Services (2018) [18]. The link was shared to the participants to fill up the forms. The survey approximately required 10 minutes to complete and consisted of 2 sections. The first part collected student's demographic details viz. gender, age, and grade level. The second part has 13 objective questions. Questions 2 to 7 were a four-point Likert scale (always, rarely, sometimes, never) that drew students sleeping awareness, and the other remaining Questions 8, 9, 10, 11, and 12 asked some of the possible causes of dozing off in class. Question 1 asked how many hours students get in a day. Question 2 asked if they find difficulty in waking up in the morning, and question 3 asked if they find it difficulty in sleeping. Question 4 asked if they fall asleep easily during active hours of the day, and Question 5 asked if they find it difficult being productive, and to complete task. Question 6 asked if they have any serious relationship problems with their friends in the hostel. Question 7 asked if they feel any irritability in the morning. These were to know if they are sleep deprived. Question 8 asked how many days in a week do they get enough sleep so that they feel rested in the morning. Questions 9 and 10 asked for possible causes of feeling sleepy in class

of them and their friends. Question 11 asked students' choice of flexibility in time and period in the school that they may not fall asleep in class. The possible responses were, reduce morning and evening study, reduce teaching period, extend leisure time, and shorten evening prayer. Question 12 asked students' choice for teaching methods, strategies, and skills in class. Finally, Question 13 asked about classroom setting so that they would not fall asleep in class.

3.4. Research Procedure

The participants were well informed about the aims of the study before sending the questionnaire. A pilot test of the questionnaire was implemented before administering the actual test. Any problem on the survey, such as poorly worded questions, senseless responses, and the amount of time to complete the instrument was considered. The online questionnaire (Google Form) was shared through Google Classroom. The participants responded the questionnaire voluntarily and anonymously.

3.5. Data Analysis

For the analysis of the four-point Likert scale data, SPSS program was used to generate descriptive statistics for the responses of the participants. The emphasis of the calculation was based on the frequencies of the respondents' responses. The result section consists of two parts. The first section shares the result of student's responses on whether they get enough sleep or not. The second part analyzes some of the possible causes of the students falling asleep in class.

4. Results

The research's findings showed that while the majority of students receive enough sleep, there are some who do not, and this cannot be ignored, because many students fall asleep in the classroom. The results also evidenced that waking up early, lecture method teaching, and prolonged teaching periods were the major contributing factors that caused dozing off in class.

The detailed quantitative data from the questionnaire were divided into two sections as shown below.

- 1) Are students in Taktse Central School getting enough sleep?
- 2) What are some of the possible causes that make students sleep during class hours?

Table 3 presents the descriptive statistics (frequency) of the responses for question 1 that asked the respondents number of sleeping hours per night. There were 290 (80.3%) participants who sleep less than 7 hours, and only 63 (18.8%) participants sleep more than 7 hours. This data shows that students in Taktse Central School rarely gets enough sleep as the average adolescent may require at least 9 hours or more sleep per night (Noland, Price, Dake, & Telljohann, 2009 [19]); (Wheaton, Chapman, & Croft, 2016 [20]). Moreover, the data is further supported by the waking hours from the school timetable where students of the

school just have 7 to 8 hours of sleep per night. The results suggest the school to make necessary changes in timetable in order to make students get enough sleep.

Table 3. Number of sleeping hours per night.

	Sleeping Hours	Frequency	Percent	Valid Percent	Cumulative Percent
	More than 9 hours	3	0.9	0.9	0.9
	5 - 5.9 hours	78	23.2	23.2	24.1
Valid	6 - 6.9 hours	155	46.1	46.1	70.2
	7 - 9 hours	63	18.8	18.8	89.0
	Less than 5 hours	37	11.0	11.0	100.0
	Total	336	100.0	100.0	

Additionally, **Table 4** displays how many days a week students feel completely rested. The majority of the participants 61.3% (n = 206) feel totally relaxed just for a day in a week which is supposedly the weekend Sunday. However, there are some 11.3% (n = 38) of students who feels that they are absolutely sleep deprived.

Table 4. Days per week of feeling completely rested.

	Days	Frequency	Percent	Valid Percent	Cumulative Percent
	0 day	38	11.3	11.3	11.3
	1 day	206	61.3	61.3	72.6
	2 days	33	9.8	9.8	82.4
Valid	3 days	12	3.6	3.6	86.0
	4 days	8	2.4	2.4	88.4
	5 days	13	3.9	3.9	92.3
	6 days	7	2.1	2.1	94.3
	7 days	18	5.4	5.4	99.7
	Total	336	100.0	100.0	Majority of the participants

4.1. Sleeping Awareness

Table 5 shows the students responses to the questions that asked if they are sleep deprived or not. The majority of respondents 36% (n = 121) always faced difficulty getting up early in the morning, and many others 46.4% (n = 156) sometimes faced difficulty in waking up in the morning. A total of 210 (62.5%) participants sometimes had a feeling of restless during sleep, and 14.9% (n = 50) respondents always had a feeling of restlessness during sleep. About more than half of the respondents 59.8% (n = 201) sometimes fell asleep during the day, and one sixth of the students always fell asleep. The majority (67.3%) of the res-

pondents sometimes faced difficulty in concentrating, being productive, and completing task, while others 11.6% (n = 39) always faced difficulty to complete task. Almost all the participants 48.2% (n = 162) sometimes felt irritated in the morning, and 14.9% (n = 50) always felt angry in the morning. However, most of the respondents 40.5% (n = 136) never had a serious relationship problem at home and hostel with friends and relatives.

Table 5. Frequency distribution and percentage of respondents on sleeping awareness.

Questions	Always		Sometimes		Rarely		Never	
	frequency	percent	frequency	percent	frequency	percent	frequency	percent
1) Do you have difficulty getting up in the morning?	121	36.0	156	46.4	40	11.9	19	5.7
2) Are you restless during sleep, tossing and turning from one side to another?	50	14.9	210	62.5	54	16.1	20	6.0
3) Do you fall asleep during the day?	53	15.8	201	59.8	64	19.0	17	5.1
4) Do you have difficulty concentrating, being productive, and completing tasks at school?	39	11.6	226	67.3	50	14.9	20	6.0
5) Do you have serious relationship problems at home, hostel with friend and relatives?	8	2.4	96	28.6	96	28.6	136	40.5
6) Are you irritable and angry, especially first thing in the morning?	50	14.9	162	48.2	76	22.6	48	14.3

4.2. Possible Causes of Falling Asleep in Class

The majority of the students, 80.3% (n = 269), indicated that getting up early in the morning, a busy schedule 26.9% (n = 90), and then a long teaching period 20.3% (n = 68) were likely factors that contributed to their sleepiness. Moreover, a lack of cooling facilities 14.3% (n = 48), and lecture method teaching 14.3% (n = 48) showed another possible cause for drowsiness. Finally, excessive use of projectors in class 11% (n = 3.3%) and a lack of interactive classroom activities 6% (n = 20) were some of the causes of sleepiness in class (Figure 1).

Almost all the respondents 66.5% (n = 222) depicted that reducing teaching period to 40 - 50 minutes would prevent them from falling asleep in class. Similarly, 28.7% (n = 96) indicates that reducing morning and evening prayer would stop them from nodding off in class. Another group of students 16.2% (n = 54) showed that extending recess, recreational or leisure time would curb participants drowsiness in class (Figure 2).

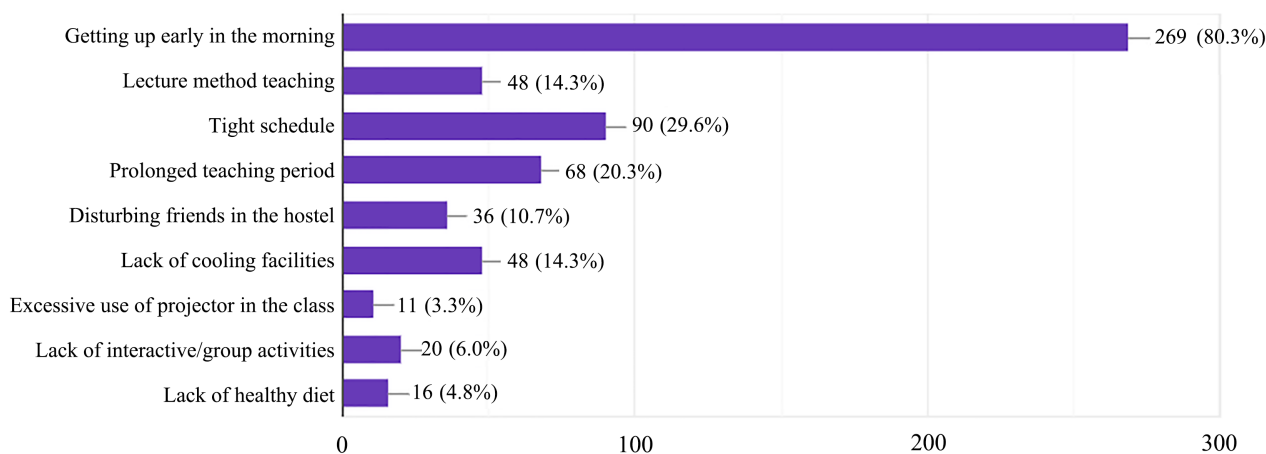


Figure 1. Possible causes of students' falling asleep in class.

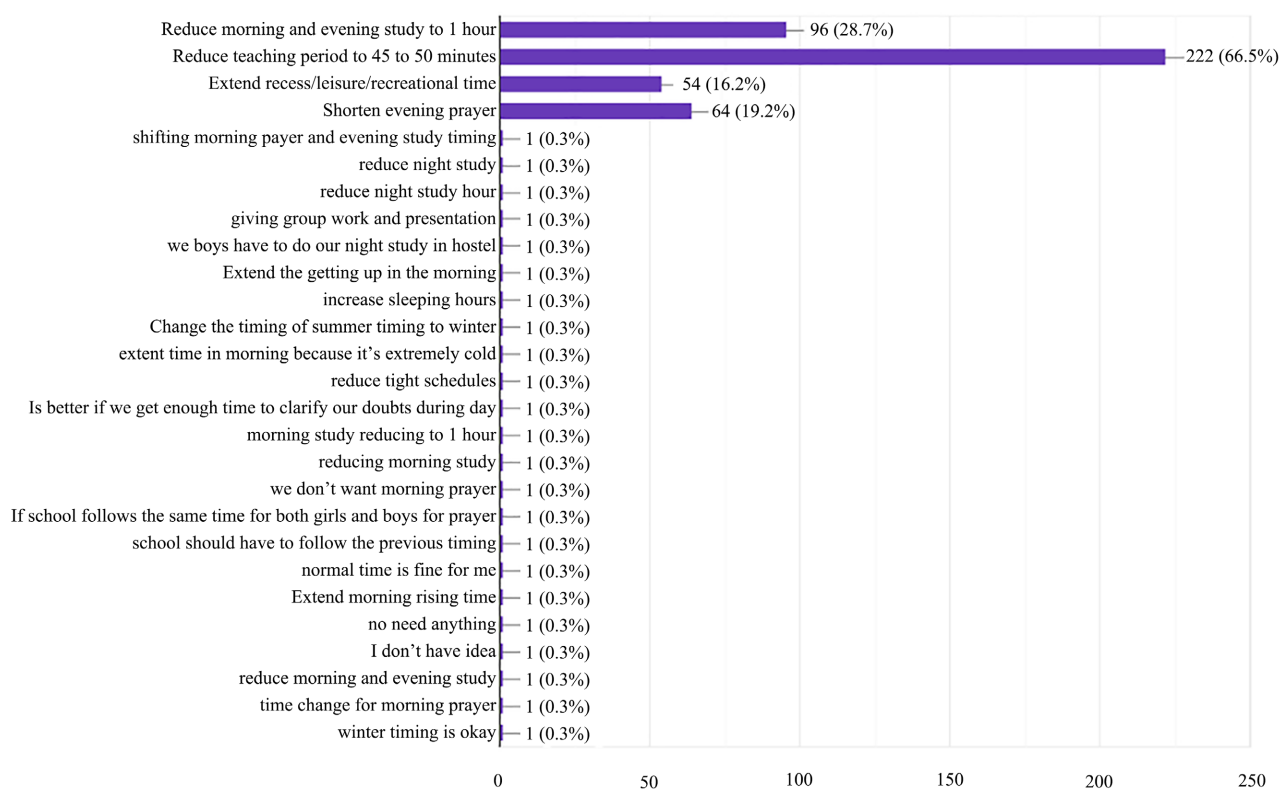


Figure 2. Best school timing to curb sleepiness in class.

5. Discussion

The first part of the research question asked if students of Taktse Central School get enough sleep. The recommended sleep required by adolescents is slightly more than 9 hours (Noland *et al.*, 2009) [19]. However, the results indicated that students in Taktse Central School do not get enough sleep as there were more than half of the participants depicting that they sleep less than 7 hours, too less than the recommended sleep required. There are many others who sleep less than 5 hours. Additionally, over fifty percent of the students faced difficulty

waking up in the morning, fall asleep easily during the day, find it hard to complete task during the day, and also feel irritable in the morning indicating sleep deprived because a person's "sleep debt" accumulates if they don't get enough sleep and keeps growing until enough sleep is obtained (Student Health and Wellness Services, 2018) [18].

The second part of the research question asked for possible causes of sleepiness in class. Almost all the respondents indicated that getting up early in the morning was the major cause of sleepiness in class, followed by tight schedule and prolonged teaching period. Such results are supported by Minges and Redeker (2016) [21] that promotes later school starts to help better sleep, and also support policy if any that support delayed school timing to improve sleep. Some other factors include lecture method teaching, lack of cooling facilities and disturbing friends in the hostel. Furthermore, the participants also suggested a best school timing to get adequate sleep. The majority of the participants mentioned to reduce prolonged teaching period, and also minimize early morning and evening prayers so that they would not fall asleep in class.

However, the results of this study cannot be generalized as the study did not examine the effects of lack of sleep on children's health, academic achievement, or social connections. Hence, in-depth qualitative investigation on similar issues should be explored in other contexts such as primary, secondary, higher and university level institutions to fully comprehend the challenges associated to sleep and those who are sleep deprived.

6. Conclusion

Students benefit from having adequate sleep, in terms of health and academic performance. Adequate sleep during the night would make students focus, and concentrate better during the day. Enough sleep would also reduce long-term sleep-deprived health issues. Although parental support is of utmost importance to monitor the sleeping pattern of their children, students in boarding schools lack that support. Therefore, teachers, warden and matron are the main individuals to check on students' sleeping patterns, and also make policies that support sufficient sleep for students. Adolescents also need to be made aware of the importance of adequate sleep, and time management to ease sleep. The school administration also needs to relook and consider the school timing such as early hours of prayer and study, prolonged teaching period, and also an extension of recreational time.

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Conflicts of Interest

The authors declare no conflicts of interest.

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