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Sleep Deprivation and Academic Performance of Students in the Collage of Nursing at King Saud University

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Abstract: The aim of the present work was to explore the relationship between the sleep deprivation and academic performance of students in collage of nursing at King Saud University. An explanatory and exploratory cross sectional study was done. 114 students; 10 of them master students and 104 undergraduate students were included in the study representing all college levels expect the preparatory year. The researcher developed a tool that includes academic\ performance, technology use and sleep patterns and extracurricular activities. The study related that majority of the subjects included in the study use various habits that deprived them from sleep especially the night before exam.

Key words: Sleep Deprivation · Academic Performance · Nursing Students

INTRODUCTION

Individual quality of life can be disrupted due to many different reasons, one of the important causes for that is sleep loss. The phenomenon of sleep deprivation is common among students most especially when their examination is fast approaching. A lot of students especially when preparing for Certificate Examination "kill their sleep" through several actions and substances believed to cause insomnia with great intake of coffee, or taking bath, intake of caffeine, among others [1].

For students the sleep is important for cognitive restitution. It influences information processing, learning and memory consolidation [2].

Sleep is a recurring state of inactivity, with a loss of consciousness and a decrease in responsiveness to events in one's environment [3].

Anderson [1], Jerome and Okafor [4] and Oyerinde [5] described sleep as an enigma, theme of poets, physiologists, artists and scientists, anyone who engages in strenuous work or activities needs more of sleep than others in his group. In addition, Toohey [6] and Uti and Ojeme [7], opined that the amount of sleep needed to replenish and promote good health of individuals vary with individuals, age and environment. If you want efficient performance next day you must have good night rest and sound sleep [5-7]. Hence deprivation of sleep influence the development of cognition, language, attention and neurological functioning remains poorly understood [8].

Pilcher and Huffcutt [9] defined the partial sleep deprivation as getting less than 5 hours of sleep in a night. Sleep deprived persons feel tired, irritable and confused even though they are able to do well motivated tasks with their usual strength and skill. People who work with their minds need just as much sleep as manual workers [10]. To remain healthy, one must go to bed at regular hours because the good which sleep does depends upon keeping up a regular rhythm of sleep and wakefulness.

In tropical countries, it is best to rise at dawn after seven or eight hours of sleep. In this way, the cool hours before the sun is high can be enjoyed and used for working while the body is alert and the air is still cool and refreshing [11].

Sleep deprivation affects cognitive and motor processes as well as emotional stability [9]. In other words, Sleep deprivation impacts many aspects of cognitive and behavioral functioning in adults. Sleep time reduction showed that even small changes of sleep length could lead to cognitive and non-cognitive deficits for the student [12]. If the students are sound with body and

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mind, these qualities can be inherited among their next generation too. Sleep deprivation focus on the importance of sufficient sleep for proper outcome in all spheres of lives.

Exam anxiety leads the students toward negative thinking, depression and sleep deprivation. Researches should be developed to improve not only the quantity of sleep but also the quality [13].

Correlations between sleep patterns and academic performance have been reported by Singleton and Wolfsan [14] who found the difference between weekday and weekend nighttime sleeping hours, timing of sleep and the difference between weekday and weekend bedtimes to be directly correlated with general performance achievement (GPA). Thus, they have shown that student's compensate their academic performance by means of unhealthy sleep patterns [15].Conducted a survey with a random sample of college students between the ages of 18 and 41, asking questions about sleep patterns and future goals using the Consideration of Future Consequences scale (CFC).

Hence, they proved that a high scores on the CFC scale meant that the individual surveyed is very conscientious and makes smart decisions now in order to successfully obtain rewards later in life. They found that higher scores on their CFC scale were associated with both more regular sleep schedules and higher grade point averages. This showed that regular sleep schedules, thinking of future goals and higher general performance achievement (GPA) are all related to each other [16].

The purpose of this study was exploring the relationship between the sleep deprivation and academic performance of nursing students in collage of nursing at King Saud University.

MATERIALS AND METHODS

Hypothesis: There is a relationship between sleep deprivation and exam performances.

Sleep deprivation may decrease academic performance during exam.

Sleep deprivation has a negative impact on academic performance.

There is a relationship between general performance achievement (GPA) and sleep pattern habits.

Personal characteristics have impact on sleep patterns.

Design of the Study: The design of study was explanatory and exploratory cross sectional one.

Setting: Nursing collage of king Saud University in Saudi Arabia at Riyadh city (female section).

Subjects: Master and bachelorette students enrolled at nursing collage of King Saud University, the subjects comprised 114 students, 10 of them master students and 104 undergraduate students, these subjects represented all college levels expect the preparatory year.

Tools for Data Collection: Reviewing the literature, the researcher developed a tool that included the following items: socio demographic characteristic, sleep patterns, degree of academic performance, technology use and sleep patterns and extracurricular activities [17-20].

Methods:

- Tool validity and reliability was measured by Jury experts consistent of 9 members, also face and content validity was assessed by the experts in field of nursing and psychiatry.
- A pilot study was done on 10% of the proposed subjects in order to measure the visibility of the tool and study.
- Date time selected was at period from 1st Jan. 2013 to 23 Jan. 2013. This previous period was selected because it's the time of conduct final semester exam for bachelor and master students at King Saud University.
- Sheets were distributed for each student hand by hand in the researcher presence and ethical considerations were reported for each of the research participants.
- Filling the sheet consumed 15 minute for each student.

RESULTS

Table (1) shows the socio demographic characteristic of the subjects, 57.9% were with age range from 22-23 years old, near half (43.9 %) of their fathers had intermediate education and 59.6 % of the subject mothers were with intermediate education. Most of the subjects mothers were house wife's (83.3%) and the monthly income to 41.2% of them was 6000 SR/months. Also 90.4% were resident at Riyadh city.

Table (2) illustrates the academic characteristics of the study subjects; 8.8% were master students, 69.3% were rolled in class 7-8 among them, 36.8 obtained grade (A) and above and also few 14.9 % didn't share in the academic activities.

Table 1: Socio-demographic characteristics of students in the study sample (n=114)

Item	Frequency	Percent
Age (years):		
<22	30	26.3
22-23	66	57.9
24+	18	15.8
Father education:		
Primary	9	7.9
Intermediate	50	43.9
Secondary	34	29.8
University	21	18.4
Mother education:		
Primary	11	9.6
Intermediate	68	59.6
Secondary	22	19.3
University	13	11.4
Mother job:		
Housewife	95	83.3
Working	19	16.7
Father job:		
Unemployed	48	42.1
Working	66	57.9
Monthly family income (SR):		
<6000	33	28.9
6000-	47	41.2
10000+	34	29.8
Residence:		
Riyadh	103	90.4
Outside	11	9.6

Table 2: Academic characteristics of students in the study sample (n=114)

Item	Frequency	Percent
Level:		
Master	10	8.8
Bachelor	104	91.2
Class level:		
3-6	25	21.9
7-8	79	69.3
9-10	10	8.8
GPA (last semester):		
A	42	36.8
B	43	37.7
CD	29	25.4
GPA (last year):		
A	30	26.3
B	57	50.0
CD	27	23.7
Participation in:@		
Making pamphlets	33	28.9
International days	26	22.8
Nursing club	31	27.2
Workshops	50	43.9
Conferences	40	35.1
Seminars	15	13.2
Faculty committees	22	19.3
Health education missions	24	21.1
Total participation in activities:		
No	17	14.9
Yes	97	85.1

*GPA: general performance achievement.

Table 3: Sleep patterns of students in the study sample (n=114)

Item	Frequency	Percent
Sleep hours at night:		
Usual week days:		
<6	63	55.3
6+	51	44.7
The midterm eve:		
<6	98	86.0
6+	16	14.0
The final eve:		
<6	109	95.6
6+	5	4.4
Sleep hours needed to be alert:		
<6	33	28.9
6+	81	71.1
Sleep hours at midterm eve:		
Less than usual	84	73.7
Less than needed to be alert	99	86.8
Sleep hours at final eve:		
Less than usual	94	82.5
Less than needed to be alert	107	93.9
Bedtime:		
Before midnight	63	55.3
At or later than midnight	51	44.7

Table (3) mirrors the sleep patterns of the subjects included in the study. More than half 55.3% sleeps in usual week days but less than 6 hours/day. However, at the midterm exam the subjects who sleep also less than 6 increased to 86.0 %. The number of the students increased in the final exam to be 95.6% to get sleep less than 6 hours /day, the table shows the student mentioned that the need hours for sleep to the alert is more than 6 hours/day as mentioned by71.1 % of them.

Table (4) illustrates the causes of sleep disorders among the student population; study subjects mentioned that 78.1% of the students going to bed don't sleep immediately, 40.4 and 49.15 stated the cause is anxiety and uncontrolled thoughts consequently. 49.1% were of afraid of losing grads and 31.6% were afraid from forgetting knowledge. Arabic coffee drunk was taken by 39.5% of them and 68.4% of the subject used different stimulants. Action taken to sleep used were different, the total helping methods were pointed to 56.1% of them, However, using hot baths was noted by 24.6% of them. Majority 64.0% were spending then times using Technology, of those 49.1% used Mobile Phone.

Table (5) mirrors the relationship between students' general performance achievement (GPA) in previous semester and their sleep patterns and habits. 71.4% of the student obtained grade (C and D) general performance achievement (GPA) at the last semester slept as needed.

Table 4: Sleep problems and technology use among students in the study sample (n=114)

Item	Frequency	Percent
Start sleep immediately once in bed		
Yes	25	21.9
No	89	78.1
Reason for no:@		
Anxiety	46	40.4
Depression	10	8.8
Obsessions	8	7.0
Uncontrollable thoughts	56	49.1
Prevailing thought at exam eve:@		
Grades and results	56	49.1
Difficulty of tests	49	43.0
Failure	8	7.0
Forgetfulness	36	31.6
Total having thoughts	111	97.4
Insomnia and lack of sleep affect:@		
Alertness	24	21.1
Thinking process	37	32.5
Memory	22	19.3
Attention and concentration	75	65.8
Total affected by insomnia	112	98.2
Use of stimulants:@		
Arabic coffee	45	39.5
American coffee	6	5.3
Cappuccino	24	21.1
Tea	25	21.9
Other	2	1.8
Total using stimulants	78	68.4
No. of cups (mean±SD) (2.7)+(0.5)	-	-
Action taken to help sleep:@		
Hot drinks	8	7.0
Hot bath	28	24.6
Physical exercise	1	0.9
Watching TV	27	23.7
Other (reading Quran, hypnotics)	7	6.1
Total used helping methods	64	56.1
Use of technology >2 hours/day: @		
Watch TV	35	30.7
Internet	41	36.0
Mobile phone	56	49.1
Total technology use 6+ hrs/day	73	64.0

*@: Responses is not mutually exclusive.

However 39.3% of the students with general performance achievement (GPA) (A) slept less than requirements and a significant difference was proved (x2=9.114) P value 0.010.

Table (6) presents the relationship between students general performance achievement (GPA) in the last year and sleep pattern habits. Student with grade A, 27.4 % had sleep less than usual hours compared to 20.2% of D and C. At the final exam both students with grads A and CD sleeping less than usual accounted to 23.4%.

Table (7) illustrates the relationship between students usual sleep hours before midterm and their personal characteristics. 70% of master students slept less than usual hours compared to 74% of bachelor. 90.5% of the students with university father education had sleep less than usual hours. 61.5 % of the students with mother university education were sleep less than usual hours. Residences in Riyadh 73.8% of them were sleep less than usual hours and outside 72.7%.

Table(8) illustrates the relation between students usual sleep hours before midterm and their sleep habits and use of technology, 100% were sleep less than <6 hours used technology compared to 68.5% were sleep more than six hours, significant difference using fisher test was proved, p value 0.003, but using internet more than 3 hours was stated by 58%. Table (9) shows the relation between students sleep hours before midterm as needed and their personal characteristics, a significant difference was proved between the student father employment and non employment in sleeping hours, X2 6.771 and p value 0.009.

Table (10) shows the relation between students sleep hours before midterm as needed and their sleep habits and use of technology. Present table proved that students not taking takes needed stimulants before midterm exam are calculated to be 82.1% as compared to only 17.9% drinks stimulant as need and a significant difference was proved using fisher with P value 0.026 and students percent who used internet more than 3 hours reached 70.7 and significant different was proved between them and the persons who needs the use of internet less than 3 hours with P value 0.001.Table (11) presents the relationship between students usual sleep hours before final exam and their personal characteristics. This table shows that there is no significant difference between who sleeps usual hours or less than usual. Table (12) shows the relationship between students' usual sleep before final exam and their sleep pattern and the use of technology, students percent slept less than 6 hours was 92.3 and more than 6 hours was 79.5. Table (13) mirrors the relation between student sleep hours before final as needed and their personal characteristics. All master students 100% didn't sleep before exam. Table (14) shows the relation between students sleep hours before final as needed and their sleep habits and use of technology, there was no significant differences between who used to sleep needed and less than needed hours.

Table 5: Relation between students' GPA in previous semester and their sleep pattern and habits

	GPA last semester							
	A		B		CD			
Item	No.	%	No.	%	No.	%	X^2test	P-value
Sleep hours at night:								
Usual week days:								
<6	24	38.1	25	39.7	14	22.2		
6+	18	35.3	18	35.3	15	29.4	0.777	0.678
The midterm eve:								
<6	38	38.8	38	38.8	22	22.4		
6+	4	25.0	5	31.3	7	43.8	3.368	0.186
The final eve:								
<6	41	37.6	42	38.5	26	23.9		
6+	1	20.0	1	20.0	3	60.0	3.293	0.193
Sleep hours needed to be alert:								
<6	13	39.4	12	36.4	8	24.2		
6+	29	35.8	31	38.3	21	25.9	0.131	0.937
Sleep hours at midterm eve:								
Usual	8	26.7	10	33.3	12	40.0		
Less than usual	34	40.5	33	39.3	17	20.2	4.745	0.093
Sleep hours at midterm eve:								
As needed	1	6.7	8	53.3	6	40.0		
Less than needed	41	41.4	35	35.4	23	23.2	6.825	0.033
Sleep hours at final eve:								
Usual	7	35.0	5	25.0	8	40.0		
Less than usual	35	37.2	38	40.4	21	22.3	3.084	0.214
Sleep hours at final eve:								
As needed	0	0.0	2	28.6	5	71.4		
Less than needed	42	39.3	41	38.3	24	22.4	9.114	0.010*
Bedtime:								
Before midnight	20	31.7	23	36.5	20	31.7		
At or later than midnight	22	43.1	20	39.2	9	17.6	3.250	0.197
Start sleep immediately once in bed								
No	32	36.0	34	38.2	23	25.8		
Yes	10	40.0	9	36.0	6	24.0	0.138	0.933
Use stimulants:								
No	18	50.0	10	27.8	8	22.2		
Yes	24	30.8	33	42.3	21	26.9	4.065	0.131
Use sleep helping methods								
No	8	36.4	6	27.3	8	36.4		
Yes	22	34.4	26	40.6	16	25.0	1.56	0.45
TV watch hours/day:								
1-2	16	31.4	20	39.2	15	29.4		
3+	14	40.0	12	34.3	9	25.7	0.68	0.711
Internet use hours/day:								
1-2	17	37.8	16	35.6	12	26.7		
3+	13	31.7	16	39.0	12	29.3	0.35	0.84
Mobile use hours/day:								
1-2	10	33.3	12	40.0	8	26.7		
3+	20	35.7	20	35.7	16	28.6	0.15	0.93
Total technology use hours/day:								
<6	3	23.1	7	53.8	3	23.1		
6+	27	37.0	25	34.2	21	28.8	1.88	0.40

(*) Statistically significant at p<0.05

Table 6: Relation between students' GPA in last year and their sleep pattern and habits

	GPA last semester							
	A		B		CD			
Item	No.	%	No.	%	No.	%	X^2test	P-value
Sleep hours at night:								
Usual week days:								
<6	15	23.8	33	52.4	15	23.8		
6+	15	29.4	24	47.1	12	23.5	0.497	0.780
The midterm eve:								
<6	25	25.5	51	52.0	22	22.4		
6+	5	31.3	6	37.5	5	31.3	1.204	0.548
The final eve:								
<6	29	26.6	54	49.5	26	23.9		
6+	1	20.0	3	60.0	1	20.0	0.214	0.899
Sleep hours needed to be alert:								
<6	11	33.3	15	45.5	7	21.2		
6+	19	23.5	42	51.9	20	24.7	1.181	0.554
Sleep hours at midterm eve:								
Usual	7	23.3	13	43.3	10	33.3		
Less than usual	23	27.4	44	52.4	17	20.2	2.100	0.350
Sleep hours at midterm eve:								
As needed	2	13.3	9	60.0	4	26.7		
Less than needed	28	28.3	48	48.5	23	23.2	1.517	0.468
Sleep hours at final eve:								
Usual	8	40.0	7	35.0	5	25.0		
Less than usual	22	23.4	50	53.2	22	23.4	2.835	0.242
Sleep hours at final eve:								
As needed	1	14.3	4	57.1	2	28.6		
Less than needed	29	27.1	53	49.5	25	23.4	0.561	0.755
Bedtime:								
Before midnight	16	25.4	29	46.0	18	28.6		
At or later than midnight	14	27.5	28	54.9	9	17.6	1.909	0.385
Start sleep immediately once in bed								
No	22	24.7	45	50.6	22	24.7		
Yes	8	32.0	12	48.0	5	20.0	0.602	0.740
Use stimulants:								
No	13	36.1	15	41.7	8	22.2		
Yes	17	21.8	42	53.8	19	24.4	2.697	0.260
Use sleep helping methods								
No	7	31.8	7	31.8	8	36.4		
Yes	16	25.0	33	51.6	15	23.4	2.68	0.26
TV watch hours/day:								
1-2	13	25.5	26	51.0	12	23.5		
3+	10	28.6	14	40.0	11	31.4	1.10	0.58
Internet use hours/day:								
1-2	16	35.6	18	40.0	11	24.4		
3+	7	17.1	22	53.7	12	29.3	3.79	0.15
Mobile use hours/day:								
1-2	9	30.0	9	30.0	12	40.0		
3+	14	25.0	31	55.4	11	19.6	5.91	0.052
Total technology use hours/day:								
<6	3	23.1	6	46.2	4	30.8		
6+	20	27.4	34	46.6	19	26.0	0.17	0.91

Table 7: Relation between students' usual sleep hours before midterm and their personal characteristics

	Sleep hours before midterm					
	Usual		<usual			
Item	No.	%	No.	%	X^2test	P-value
Level:						
Master	3	30.0	7	70.0		
Bachelor	27	26.0	77	74.0	0.077	0.782
Age (years):						
<22	8	26.7	22	73.3		
22-23	18	27.3	48	72.7		
24+	4	22.2	14	77.8	0.189	0.910
Father education:						
Primary	3	33.3	6	66.7		
Intermediate	15	30.0	35	70.0		
Secondary	10	29.4	24	70.6		
University	2	9.5	19	90.5	3.800	0.284
Mother education:						
Primary	3	27.3	8	72.7		
Intermediate	16	23.5	52	76.5		
Secondary	6	27.3	16	72.7		
University	5	38.5	8	61.5	1.277	0.735
Mother job:						
Housewife	23	24.2	72	75.8		
Working	7	36.8	12	63.2	1.303	0.254
Father job:						
Unemployed	15	31.3	33	68.8		
Working	15	22.7	51	77.3	1.041	0.308
Monthly family income (SR):						
<6000	7	21.2	26	78.8		
6000-	13	27.7	34	72.3		
10000+	10	29.4	24	70.6	0.655	0.721
Residence:						
Riyadh	27	26.2	76	73.8		
Outside	3	27.3	8	72.7	0.006	0.940

Table 8: Relation between students' usual sleep hours before midterm and their sleep habits and use of technology

	Sleep hours before midterm					
	Usual		<usual			
Item	No.	%	No.	%	X^2test	P-value
Use stimulants:						
No	7	19.4	29	80.6		
Yes	23	29.5	55	70.5	1.281	0.258
Use sleep helping methods						
No	5	22.7	17	77.3		
Yes	18	28.1	46	71.9	0.24	0.61
TV watch hours/day:						
1-2	12	23.5	39	76.5		
3+	11	31.4	24	68.6	0.66	0.42
Internet use hours/day:						
1-2	6	13.3	39	86.7		
3+	17	41.5	24	58.5	8.66	0.003*

Table 8: Continue

	Sleep hours before midterm					
	Usual		<usual			
Item	No.	%	No.	%	X^2test	P-value
Mobile use hours/day:						
1-2	6	20.0	24	80.0		
3+	17	30.4	39	69.6	1.07	0.30
Total technology use hours/day:						
<6	0	0.0	13	100.0		
6+	23	31.5	50	68.5	Fisher	0.02*

(*) Statistically significant at p<0.05

Table 9: Relation between students' sleep hours before midterm as needed and their personal characteristics

	Sleep hours before midterm					
	As needed		<needed			
Item	No.	%	No.	%	X^2test	P-value
Level:						
Master	0	0.0	10	100.0		
Bachelor	15	14.4	89	85.6	1.661	0.197
Age (years):						
<22	3	10.0	27	90.0		
22-23	12	18.2	54	81.8		
24+	0	0.0	18	100.0	4.447	0.108
Father education:						
Primary	1	11.1	8	88.9		
Intermediate	6	12.0	44	88.0		
Secondary	7	20.6	27	79.4		
University	1	4.8	20	95.2	3.030	0.387
Mother education:						
Primary	2	18.2	9	81.8		
Intermediate	7	10.3	61	89.7		
Secondary	4	18.2	18	81.8		
University	2	15.4	11	84.6	1.273	0.735
Mother job:						
Housewife	9	9.5	86	90.5		
Working	6	31.6	13	68.4	6.771	0.009*
Father job:						
Unemployed	7	14.6	41	85.4		
Working	8	12.1	58	87.9	0.147	0.701
Monthly family income (SR):						
<6000	6	18.2	27	81.8		
6000-	5	10.6	42	89.4		
10000+	4	11.8	30	88.2	1.048	0.592
Residence:						
Riyadh	14	13.6	89	86.4		
Outside	1	9.1	10	90.9	0.176	0.675

(*) Statistically significant at p<0.05

Table 10: Relation between students' sleep hours before midterm as needed and their sleep habits and use of technology

	Sleep hours before midterm					
	As needed		<needed			
Item	No.	%	No.	%	X^2test	P-value
Use stimulants:						
No	1	2.8	35	97.2		
Yes	14	17.9	64	82.1	4.961	0.026*
Use sleep helping methods						
No	3	13.6	19	86.4		
Yes	10	15.6	54	84.4	Fisher	1.00
TV watch hours/day:						
1-2	8	15.7	43	84.3		
3+	5	14.3	30	85.7	0.02	0.90
Internet use hours/day:						
1-2	1	2.2	44	97.8		
3+	12	29.3	29	70.7	12.23	<0.001*
Mobile use hours/day:						
1-2	3	10.0	27	90.0		
3+	10	17.9	46	82.1	Fisher	0.53
Total technology use hours/day:						
<6	1	7.7	12	92.3		
6+	12	16.4	61	83.6	Fisher	0.68

(*) Statistically significant at p<0.05

Table 11: Relation between students' usual sleep hours before final and their personal characteristics

	Sleep hours before final					
	Usual		<usual			
Item	No.	%	No.	%	X^2test	P-value
Level:						
Master	1	10.0	9	90.0		
Bachelor	19	18.3	85	81.7	0.431	0.511
Age (years):						
<22	5	16.7	25	83.3		
22-23	12	18.2	54	81.8		
24+	3	16.7	15	83.3	0.044	0.978
Father education:						
Primary	1	11.1	8	88.9		
Intermediate	9	18.0	41	82.0		
Secondary	5	14.7	29	85.3		
University	5	23.8	16	76.2	1.024	0.795
Mother education:						
Primary	1	9.1	10	90.9		
Intermediate	13	19.1	55	80.9		
Secondary	3	13.6	19	86.4		
University	3	23.1	10	76.9	1.167	0.761
Mother job:						
Housewife	15	15.8	80	84.2		
Working	5	26.3	14	73.7	1.213	0.271
Father job:						
Unemployed	7	14.6	41	85.4		
Working	13	19.7	53	80.3	0.502	0.478

Table 11: Continue

	Sleep hours before final					
	Usual		<usual			
Item	No.	%	No.	%	X^2test	P-value
Monthly family income (SR):						
<6000	4	12.1	29	87.9		
6000-	9	19.1	38	80.9		
10000+	7	20.6	27	79.4	0.972	0.615
Residence:						
Riyadh	17	16.5	86	83.5		
Outside	3	27.3	8	72.7	0.797	0.372

Table 12: Relation between students' usual sleep hours before final and their sleep habits and use of technology

	Sleep hours before final					
	Usual		<usual			
Item	No.	%	No.	%	X^2test	P-value
Use stimulants:						
No	9	25.0	27	75.0		
Yes	11	14.1	67	85.9	2.022	0.155
Use sleep helping methods						
No	3	13.6	19	86.4		
Yes	13	20.3	51	79.7	Fisher	0.75
TV watch hours/day:						
1-2	9	17.6	42	82.4		
3+	7	20.0	28	80.0	0.08	0.78
Internet use hours/day:						
1-2	5	11.1	40	88.9		
3+	11	26.8	30	73.2	3.50	0.06
Mobile use hours/day:						
1-2	3	10.0	27	90.0		
3+	13	23.2	43	76.8	2.25	0.13
Total technology use hours/day:						
<6	1	7.7	12	92.3		
6+	15	20.5	58	79.5	Fisher	0.45

Table 13: Relation between students' sleep hours before final as needed and their personal characteristics

	Sleep hours before final					
	As needed		<needed			
Item	No.	%	No.	%	X^2test	P-value
Level:						
Master	0	0.0	10	100.0		
Bachelor	7	6.7	97	93.3	Fisher	1.00
Age (years):						
<22	2	6.7	28	93.3		
22-23	5	7.6	61	92.4		
24+	0	0.0	18	100.0	1.428	0.490
Father education:						
Primary	0	0.0	9	100.0		
Intermediate	4	8.0	46	92.0		
Secondary	2	5.9	32	94.1		
University	1	4.8	20	95.2	0.962	0.810

Table 13: Continue

Item	Sleep hours before final: As needed No.	%	<needed No.	%	X^2test	P-value
Mother education:						
Primary	1	9.1	10	90.9		
Intermediate	4	5.9	64	94.1		
Secondary	1	4.5	21	95.5		
University	1	7.7	12	92.3	0.325	0.955
Mother job:						
Housewife	4	4.2	91	95.8		
Working	3	15.8	16	84.2	3.683	0.055
Father job:						
Unemployed	3	6.3	45	93.8		
Working	4	6.1	62	93.9	0.002	0.967
Monthly family income (SR):						
<6000	3	9.1	30	90.9		
6000-	2	4.3	45	95.7		
10000+	2	5.9	32	94.1	0.792	0.673
Residence:						
Riyadh	6	5.8	97	94.2		
Outside	1	9.1	10	90.9	0.184	0.668

Table 14: Relation between students' sleep hours before final as needed and their sleep habits and use of technology

Item	Sleep hours before final: As needed No.	%	<needed No.	%	X^2test	P-value
Use stimulants:						
No	1	2.8	35	97.2		
Yes	6	7.7	72	92.3	1.032	0.310
Use sleep helping methods						
No	2	9.1	20	90.9		
Yes	5	7.8	59	92.2	Fisher	1.00
TV watch hours/day:						
1-2	6	11.8	45	88.2		
3+	1	2.9	34	97.1	Fisher	0.23
Internet use hours/day:						
1-2	2	4.4	43	95.6		
3+	5	12.2	36	87.8	Fisher	0.25
Mobile use hours/day:						
1-2	1	3.3	29	96.7		
3+	6	10.7	50	89.3	Fisher	0.41
Total technology use hours/day:						
<6	1	7.7	12	92.3		
6+	6	8.2	67	91.8	Fisher	1.00

DISCUSSION

Sleep may be the one of the most important factors for student success and neglect. Many students sacrifice sleep hours in order to work, play or get school projects completed. Consequently, most students think that they can function well when they don't get sleep the turn is they cannot.

59.9% of students of the present study with age range from 22-23years and the majority resident at Riyadh Saudi Arabia, few were master students and more than two third were enrolled in class7-8 collage of nursing king Saud university. However the age range of the study subjects was not broad, but the variation in selecting different levels for study shows the impact of maturity as selected on sleep of master student. It is obvious in this

study that both under and post graduate students had same character as both nearly slept less than usual hours before their exam. However, it is recommended that students should always have adequate hours (as at least 7-9 hours) to academic maximum performance [1]. Consequences of sleeping less than usual sleep hours include; mental tension, poor timing, muscular fatigue and lack of coordination [21-23].

Results of this paper proved a significant difference between students' grades and their sleep hours. This data contradict the study of Singleton and Wolfson [14] that concluded that alcohol use compromises college students' GPAs due to the effect of alcohol on sleep quality. Lack of findings supporting the sleep quality-academic success link may have been due to only including questions about the previous night's sleep quality in our study. Some of the classes to which these surveys were administered may not have gotten a good night's sleep the previous night because of tests or papers due in that class. This would affect the answers of all students in the class similarly [24].

The association between insufficient sleep duration and lower university grades are understandable in the view of sleep functions, as sleep deprivation may negatively affects the ability to complete cognitive tasks [25]. The previous statement may interpret results in this study, done in collage of nursing in King Saud University that as students with grade B sleep less than usual hours more than the students obtained grade A either in the mid exam or in the final exam.

An explanation of the previous results may be stressed by a study of Pillcher and walter [26] they stated that sleep deprived students (1 night of sleep loss) comparing to non deprived (8 hours sleep) perform significantly worse in a cognitive tasks.

Furthermore, this study showed no correlation between any of the personal characteristics, sleep deprivation and academic achievement. Studies mentioned that the ability to evaluate one's own cognitive performance depend on age, history of sleep and also physiological responses [27].

Effect of sleep depreciation can also depend on individual traits. However the difference between the young and older, men and women or mechanisms as well as social environmental factors may be involved [28, 29].

The environmental factors at nursing collage may has its impact on the enrolled students as faculty members are from different places and cultures, also students study in different setting (the main campus and hospitals with different spatiality).

Hence, establishment of a standardized system either for routine work with students or in interpersonal communication with students may help them to reduce anxiety provoking factors and help the students to reestablish their routine life style and help them to promote their sleep pattern.

This study reviled that majority of the subjects included in the study used various habits that has deprived them from sleep especially at the night before exam.

Recommendations: It is recommended for the student to improve the sleep habit by:

- Create a nightly routine: that helps prepare your body for a good night's sleep. This should include relaxing activities.
- Avoid doing anything in bed other than sleeping and resting: Like watch TV in bed.
- Avoid caffeine, nicotine four to six hours before you go to sleep.
- Exercise: is an important part of keeping a healthy lifestyle.

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