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ASSOCIATION OF SLEEP AND EMOTIONAL SENSITIVITY– A RESEARCH STUDY

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ABSTRACT

Sleep or *Nidra* at night can be considered as one of the most precious gifts. Disturbance in between the sleep or reduced average sleep time also cause *Dosha Vaishamya*. If such situation continues, it could create adverse impacts in the existence of that person. *Dukha* (worries and Anxiety) is an emotion that occur when a person faces crucial Situations. Whether such *dukha* create improper sleep (disturbed and reduced sleep) or *Aswabhavika Nidra* /*nidra naasa* among the students? And if such improper sleep for a short period of time creates any changes in the Emotional Sensitivity among the students? The present study is planned to assess the *Nidra* of students before and during exam period and to assess the Emotional Sensitivity of students before and during examination period. Apparently healthy students both male and female genders, studying in reputed Ayurveda Colleges in South Kerala were selected for the study by distributing questionnaire among them and the results were statistically analysed.

Keywords: *Nidra naasa, Dosha Vaishamya*, Emotional Sensitivity, healthy students

INTRODUCTION

Sleep is the foundation of healthy life. In 'Encyclopedia **[1]** of Mental Health', sleep is defined as a time bound state occurring in all animals for the rest of the body and mind. Getting sound sleep each night imparts physical and mental balance to prepare our body and mind for the next day. A sound sleep at night can be considered undoubtedly one of the most precious gifts **[2]**. *Nidra* is the term used in Ayurveda for sleep. Ayurveda has given more importance to sleep and consider it as one among *Trayopasthambhas* **[3]**.

When mind gets tired, sensory and motor organs get exhausted, they no more can perceive their objects. In this status, the connection between the sense organs, mind and soul which are responsible for attaining knowledge of external objects gets detached. This state is termed as Nidra **[4]**. *Sukha* (Pleasure), *Pushti* (Nourishment and growth), *Bala* (Strength and immunity), *Vrishataa* (Potency and sexual vigour), *Jnaanam* (Knowledge and intellect) & *Jeevitam* (Good life span, longeivity of life) are the desired impact of qualitative and quantitative Nidra **[5]**. On the other hand, an abnormal sleep in terms of quality and quantity (inadequate, excessive or irregular sleep) bestows harmful effects such as Dukha (Grief), *Karshyam* (Consumption or emaciation), *Abalam* (Loss of strength and immunity), *Kleebataa* (Impotence and sterility), *Ajnaanam* (Ignorance and idiocy) and *Ajeevitham* (Death) **[6]**. In general *Nidra* gives rest essentially for a strained senses, Mind and soul and is vital for a healthy brain activity during the day. *Nidra* varies from person to person depending upon several factors such as Food, Age, Work place, Work load, Surroundings, Habits and so on. Generally night time is described as a proper time for sleep. A person should neither

awake at night nor sleep during day time because both are considered to be *Dosha-Prakopaka* **[7]** (Vitiate humors). Disturbance in between the sleep or reduced average sleep time also cause *Dosha Vaishamya*. If such situation continues, it could create

adverse impacts in the existence of that person. *Dukha* (worries and Anxiety) is an emotion that occur when a person face crucial Situations. The worries or anxieties that develop in such situations may disturb the normal sleep level of students. Even though, such situation persists for short duration of period, it is able to make the life of a person hard and create issues in the existence of that person, leads to *Abalatwa* or emotional & physical distress and loss of strength, difficulty in concentration and so on. Among students, exams were found to be crucial situations. Such situations, if adversely affect the normal functions of

Mana such as a person's emotional status, thoughts & perception, intelligence level or *medha* **[8]** and so on, it leads to the development of *dukha* (worries or anxiety). Whether such *dukha* create improper sleep (disturbed and reduced sleep) or *Aswabhavika Nidra /nidra naasa* among the students? And if such improper sleep for a short period of time create any changes in the Emotional Sensitivity among the students? Although extensive studies have been conducted in the sleep and Emotional Intelligence **[9]** and related topics, there hasn't been significant attempt to relate student's sleep with Emotional Sensitivity **[10]**. To identify the problem, an attempt has been made in the present study to establish and associate Emotional sensitivity of students with their sleep during exam period.

Need of the study

In today's society, many students are expert in the technical side of various professions. This indicated that they are expert and brilliant academically. But in many cases, it was evident that students were not able to handle or tackle many emotional situations and are not successful at work and in their personal relationships. That means IQ is not enough to achieve success in life, but EQ is equally important. Higher level of EQ is important to manage the stress and emotions and it is the predictor of students' academic achievements, performance, developments, to identify unsuccessful students, to identify their stress management skills like stress tolerance and impulse control and so on. Once identified, measurements could be adopted to bring better quality of work performance among the students. If improper sleep due to exam stress, influenced or changed the dimensions of EQ such as Emotional Sensitivity, then adequate measurements could be planned to maintain or overcome the stressful situations.

Aims and objectives

The present study is planned with the following Objectives

- To assess the *Nidra* of students before and during exam period.
- To assess if the *Nidra* is sound or disturbed, before and during exam period.
- To assess the Emotional Sensitivity of students before and during exams.
- To assess whether Emotional Sensitivity is low, moderate or high among these students before and during exams.
- To assess if the disturbed nidra over a certain period influenced or changed the Emotional Sensitivity of students.

MATERIALS AND METHOD

In our classics any description regarding the concept of Emotional quotient or Emotional Sensitivity has not been mentioned. But

about various emotional disorders, concept of *Medha* (intelligence), concept of *Prakriti* was explained. So, to explore the area, an attempt has been made in the present study and tried to establish the Emotional sensitivity and its association with *nidra* (sleep). This part dealt with the materials and methods of the research work carried out in the study.

Materials:

1. Literary work
2. Questionnaire

Collection of Materials and methods:

1. **Literary study:**

   The literary source for the present study was obtained from;

   Charaka Samhita with commentary,

   Sushurta Samhita with commentary,

   Asthanga Sangraha with commentary

   Asthanga Hrudaya with commentary,

   Modern Physiology text books

   Websites

   Research databases.

METHODOLOGY

Source of Data:

- Apparently healthy students both male and female genders, studying in reputed Ayurveda Colleges, South Kerala

Sampling Technique: Systemic Sampling method

Method of Collection of Data: Among the graduate students of first year BAMS from South Kerala, 300 under graduate students were selected for the study before their University exam period and during the University exam period. Sleep levels among the students were assessed first with the help of a self-graded Questionnaire, which were distributed 3months before the Exam and during their University Examination Period. Various dimensions of Emotional Quotient such as Emotional Sensitivity level of above students were also assessed with the help of a standardized Emotional Intelligence Scale.

Study Design: Observational Study.

Inclusion Criteria: Both Male &Female Students appearing for exams of age group between 18 to 21 years irrespective of caste, religion and socio-economic status were included in the study.

Exclusion Criteria: Students having the history of addictions (Alcohol, Smoking), who are suffering from chronic diseases, systemic disorders, psychosomatic disorders, under any medications, age below 18 and also above 21.

Plan of Study: To assess the Sleep levels among the first year BAMS students a structured self-graded Questionnaire need to be distributed 3months before their University Examination. Students sleep level, such as sound or disturbed or reduced, could be assessed. Through the same questionnaire preliminary information's such as age, gender, habits of each student were collected. The Emotional Sensitivity of

same students was assessed with a standardised Emotional Intelligence Scale developed by Dr. Dalip Singh & Dr. NK Chadha. This test has been standardized for professional managers, graduate student, businessmen, bureaucrats, artists, and adolescent population. This EQ test has a test- retest and split-half reliability of 0.94 and 0.89 respectively and validity of 0.89. It has been attempted online by more than 25,000 persons worldwide. In this standardized EQ analysis test, we can find questions related to real-life situations from the immediate environment regarding people's liking, disliking, character, way of thinking and doing tasks. This situation reflects some areas of Emotional Intelligence such as self –awareness, self-regulation, handling relationships, motivation, conflict resolution and stress management. The subjects were asked to respond to the situation by putting a tick mark on the desirable situation.

The Sleep assessment and Emotional Sensitivity assessment of above selected students had taken once again, one week before their University examination (due to practical inconvenience of distributing questionnaire in between the examination days one week prior to exam was selected) and this period was considered as 'During Exam period'. The influence of sleep on Emotional Sensitivity was then statistically analysed.

RESULTS

The overall mean value assigned by 300 first-year BAMS students in South Kerala was done based on the Likert scale. The mean score is 2.467±.1573, with a standard error of .0063. At 95% Confidence Interval for Mean, the Lower Bound value is 2.455 and the Upper Bound value is 2.480. The median value is 2.473, which is almost closer to mean value. The variance of the data is 0.022. The Skewness coefficient is -.117(SE .105) and Kurtosis coefficient is .028 (SE 0.209), both are at the acceptable level.

The normality of the data to assess the *Nidra* and its effect on Emotional Intelligence in Healthy Individuals with Emotional Intelligence Scale was measured with the support of the Kolmogorov-Smirnov and Shapiro- Wilk test. The test value of the Kolmogorov-Smirnov is 0.029 with a p value of 0.200 and the test value of the Shapiro -Wilk is 0.997 with a p value of 0.590. This shows that the given data is normally distributed.

	Kolmogorov-Smirnov[a]				Shapiro-Wilk		
	Statistic	Df	Sig.		Statistic	df	Sig.
Nidra	.029	300	.200*		.997	300	.590
*. This is a lower bound of the true significance.							
a. Lilliefors Significance Correction							

The Homogeneity of Variances of the data to assess the Nidra and its effect on Emotional Intelligence in Healthy Individuals with Emotional Intelligence Scale was measured with the support of the Levene Statistic test. The test value of the Levene Statistic is .018 with a p value of .893. This shows that there is Homogeneity of Variances of data.

Levene Statistic	df1	df2	Sig.
.018	1	598	.893

According to the Reliability data to assess the Nidra and its effect on Emotional Intelligence in Healthy Individuals with Emotional Intelligence Scale, the overall Cronbach Alpha value of 57 items is 88.2 percent based on standardised items, which is deemed very good when compared to the 70 percent guideline. This indicates that the constructed tool is quite dependable.

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.869	.882	57

Assessment of Nidra

Objective: To examine the Nidra of first-year BAMS students in South Kerala

Hypothesis: There is significant difference in the Nidra of first-year BAMS students in South Kerala.

Crosstab - Period with Average sleep time

			Average sleep time				Total
			Below 5 hours	between 5-6 hours	6-7 hours	7 - 8 hours	
Period	Before Exam	Count	0	0	132	168	300
		%	0.0%	0.0%	43.9%	56.1%	100.0%
	During Exam	Count	185	94	16	5	300
		%	61.6%	31.4%	5.2%	1.8%	100.0%
Total		Count	185	94	148	173	600
		%	30.8%	15.7%	24.5%	29.0%	100.0%
Pearson Chi-Square			523.50	P value	0.000	Significant	
Likelihood Ratio			617.563	P value	0.000		

The period prior and during the exam was used to examine the average sleep time of first-year BAMS students in South Kerala. It was noted that 185 (61.6%) students opined that their average sleep time is below 5 hours during the exam. At the same time, it noted that 94 (31.4%) students opined that their average sleep time is between 5-6 hours during the exam respectively. Similarly, it was noted that 132 (43.9%) and 16 (5.2%) students opined that their average sleep time is 6-7 hours in prior and during the exam

respectively. It noted that 168 (56.1%) and 5 (1.8%) students opined that their average sleep time is 7 - 8 hours before and during the exam respectively.

The Pearson Chi-Square Tests was used to examine the association between the period and average sleep time and the test value 523.50, and the p value is 0.000, lower than .05. Hence, there was discernible variation in average sleep time between before and during the exam time of first-year BAMS students in South Kerala. This implies that there is variation in the average sleep time, when the exam declares. Since the Likelihood ratio is 617.563 and significant, the variation in the Period of exam from Before Exam to During Exam of first-year BAMS students in South Kerala based on the average sleep time is 617.563%. Hence there exists a dependent association between the average sleep time and exam period.

Group Statistics – Opinion on Assessment of Nidra

Assessment of sleep	Period	N	Mean	Std. Deviation	Std. Error Mean	Effect
often feel difficulties in falling asleep	Before Exam	300	1.391	.6163	.0374	Low
	During Exam	300	2.513	.9995	.0607	Moderate
fall into deep sleep within an hour	Before Exam	300	3.737	.5465	.0333	High
	During Exam	300	2.048	1.0370	.0630	Low
I am not comfortable during my sleep time	Before Exam	300	1.395	.7388	.0406	Low
	During Exam	300	2.653	1.0281	.0628	High
awake at night due to some discomforts	Before Exam	300	1.432	.7758	.0471	Low
	During Exam	300	2.150	1.3007	.0773	Low
awake for urinating more than one time	Before Exam	300	1.247	.5180	.0315	Low
	During Exam	300	1.247	.5180	.0315	Low
Even slightest sound disturb my sleep	Before Exam	300	1.395	.7388	.0406	Low
	During Exam	300	1.395	.7388	.0406	Low

With regard to the Assessment of *Nidra* among the first-year BAMS students in South Kerala during 3 months before exam period and during exam period, the scores were low (1.391±.6163) & moderate (2.513±.9995) respectively for the feeling difficulties in falling asleep. The scores were high (3.737±.5465) & low (2.048±1.0370) respectively for the fall into deep sleep within an hour. At the same time, it may note that the scores were low (1.395±.7388) & high (2.653±1.0281) respectively for the statements not comfortable during sleep time. But at the same time, all the students awarded low effects on the scores for the statements awaking at night due to some discomforts; awake for urinating more than one time and even slightest sound disturb the sleep. This has no relevance for the first-year BAMS students in South Kerala whether 3 months before exam period and during exam period.

Pair wise t test - Assessment of Nidra

Assessment of sleep	Pair wise t test				
	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
I often feel difficulties in falling asleep	-15.727	598	.000	-1.1218	.0713
I used to fall into deep sleep within an hour`	23.686	539	.000	1.6891	.0713
I am not comfortable during my sleep time	-16.889	598	.000	-1.2883	.0745
I used to awake at night due to some discomforts	-7.829	598	.000	-.7085	.0905
I used to awake for urinating more than one time	.000	598	1.000	.0000	.0445
Even slightest sound disturb my sleep	.000	598	1.000	.0000	.0635

With regard to the assessment of Nidra among first-year BAMS students in South Kerala during exam period and 3 months before exam period, statistically significant difference was noted based on the Pair wise t test, for the statement feel difficulties in falling asleep (t -15.727; p value 0.000; favour to during exam period), fall into deep sleep within an hour (t 23.686;p value 0.000; favour to 3 months before exam period), not comfortable during sleep time (t -16.889;p value 0.000; favour to during exam period), awake at night due to some discomforts (t -7.829; p value 0.000) as the p values are less than .05.No statistical difference was noted for the remaining variables.

Tests of Between-Subjects Effects -Related to their Assessment of Nidra

Dependent Variable: Assessment of Nidra					
Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	8.805	3	2.940	19.871	.000
Intercept	1370.953	1	1370.953	9282.496	.000
Period	5.070	1	5.070	34.328	.000
Gender	1.308	1	1.308	8.858	.003
Period * Gender	.033	1	.033	.228	.640
Error	79.458	538	.158		
Total	2008.071	600			
Corrected Total	88.263	599			
a. R Squared = .018 (Adjusted R Squared = .012)					

The statistical significance in the Assessment of Nidra of first-year BAMS students at South Kerala was examined with the support of the Two-way Anova. According to the categorical variable Period, the F Test value is 34.328 and the corresponding p value is 0.000 (P value <5%), showing the null hypothesis is rejected. This means, the period (before exam and during exam) has influence on the *Nidra* of first-year BAMS students in South Kerala.

According to the categorical variable Gender, the F Test value is 8.858 and the corresponding p value is 0.003 (P value <5%), showing the null hypothesis is rejected. This means, the gender (male and

female) has influence on the *Nidra* of first-year BAMS students in South Kerala.

According to the interaction effect of Period with Gender, the F Test value is 0.288 and the corresponding p value is 0.640 (P value >5%), showing the null hypothesis is accepted. This means, the interaction effect of Period with Gender has no influence on the Nidra of first-year BAMS students in South Kerala.

Objective: To analyse the influence of Emotional Sensitivity of first-year BAMS students in South Kerala

Hypothesis: There is significant difference in the influence of Emotional Sensitivity of first-year BAMS students in South Kerala

Tests of Between-Subjects Effects -Related to their Emotional Sensitivity

Dependent Variable: Emotional Sensitivity					
Source	**Type III Sum of Squares**	**Df**	**Mean Square**	**F**	**Sig.**
Corrected Model	**11588.532[a]**	**7**	**1598.403**	**13.940**	**.000**
Intercept	**2003413.663**	**1**	**2003413.663**	**15940.533**	**.000**
Period	**5463.242**	**1**	**5463.242**	**50.810**	**.000**
Gender	**40.318**	**1**	**40.318**	**.375**	**.599**
College	**353.040**	**1**	**353.040**	**3.228**	**.073**
Period * Gender	**34.741**	**1**	**34.741**	**.323**	**.630**
Period * College	**.022**	**1**	**.022**	**.000**	**.989**
Gender * College	**1.854**	**1**	**1.854**	**.017**	**.896**
Period * Gender * College	**46.400**	**1**	**46.400**	**.431**	**.512**
Error	**63416.741**	**534**	**107.522**		
Total	**2826175.000**	**600**			
Corrected Total	**671005.212**	**599**			

The statistical significance in the Emotional Sensitivity of first-year BAMS students at South Kerala was examined with the support of the Three way Anova. According to the categorical variables Gender, College, Period with Gender, Period with College, Gender with College and Period with Gender with College, are statistically not significant as the p values are greater than 5%, showing the null hypothesis is accepted. This means, no influence on the Emotional Sensitivity of first-year BAMS students in South Kerala based on the categorical variables. But Statistically significant difference was noted on the Emotional Sensitivity level of first year students in south Kerala based on the categorical variable Period, as the Anova test value is 50.810 and P value 0.000, favourable to during exam period.

Objective: To evaluate association between the Period and Sensitivity Score of first-year BAMS students in South Kerala

Hypothesis: There is significant difference in the association between the period and Emotional Sensitivity Score of first-year BAMS students in South Kerala

Cross Association-Period and Emotional Sensitivity Score

Period and Sensitivity Score			Sensitivity Score				Total
			Low ES	Moderate ES	High ES	Extremely High ES	
Period	Before Exam	Count	62	221	15	2	300
		%	20.7%	73.7%	5.0%	0.7%	100.0%
	During Exam	Count	10	215	67	8	300
		%	3.3%	71.7%	22.3%	2.7%	100.0%
Total		Count	72	436	82	10	600
		%	12.0%	72.7%	13.7%	1.7%	100.0%
Pearson Chi-Square		74.214	P value	0.000	Result		Significant
Likelihood Ratio		81.372	P value	0.000			

The period prior and during the exam was used to examine the Sensitivity Score of first-year BAMS students in South Kerala. It was noted that 62 (20.7%) and 10 (3.3%) students' Emotional Sensitivity Score was found to be Low period prior and during the exam respectively. At the same time, 221(73.7%) and 215 (71.7%) students' Sensitivity Score was found Moderate, period prior and during the exam respectively. Similarly, 15 (5%) and 67 (22.3%) students' Sensitivity Score were found to be High, period prior and during the exam respectively. Correspondingly, 2 (.7%) and 8 (2.7%) students' Sensitivity Score was found Extremely High, period prior and during the exam respectively.

The Pearson Chi-Square Tests was used to examine the association between the period and Emotional Sensitivity Score and the test value 74.214, and the p value is 0.000, lower than .05. Hence, there is discernible variation in Emotional Sensitivity Score between before and during the exam time of first-year BAMS students in South Kerala. This implies that there is variation in the Sensitivity Score from Low ES to Extremely High ES, when the exam declares. Since the Likelihood ratio is 81.372 and significant, the variation in the Period of exam from Before Exam to During Exam of first-year BAMS students in South Kerala based on the Emotional Sensitivity Score is 81.372%. Hence there exists a dependent association between the Emotional Sensitivity Score and exam period.

Objective: To evaluate association between the Period, Nidra Score and Emotional Sensitivity Score of first-year BAMS students in South Kerala

Hypothesis: There is significant difference in the association between the Period, Nidra Score and Sensitivity Score of first-year BAMS students in South Kerala

Cross Association-Period, Nidra Score and Sensitivity Score

Period				Sensitivity Score				Total
				Low ES	Moderate ES	High ES	Extremely High ES	
Before Exam	Nidra Score	Sound Nidra	Count	37	131	11	0	179
			%	20.7%	73.2%	6.1%	0.0%	100.0%
		disturbed Nidra	Count	16	51	1	1	69
			%	23.2%	73.9%	1.4%	1.4%	100.0%
		reduced Nidra	Count	9	39	3	1	52
			%	17.3%	75.0%	5.8%	1.9%	100.0%
	Total		Count	62	221	15	2	300
			%	20.7%	73.7%	5.0%	0.7%	100.0%
During Exam	Nidra Score	Sound Nidra	Count	3	53	16	6	78
			%	3.8%	67.9%	20.5%	7.7%	100.0%
		disturbed Nidra	Count	2	80	19	2	103
			%	1.9%	77.7%	18.4%	1.9%	100.0%
		reduced Nidra	Count	5	82	32	0	119
			%	4.2%	68.9%	26.9%	0.0%	100.0%
	Total		Count	10	215	67	8	300
			%	3.3%	71.7%	22.3%	2.7%	100.0%
Total	Nidra Score	Sound Nidra	Count	40	184	27	6	257
			%	15.6%	71.6%	10.5%	2.3%	100.0%
		disturbed Nidra	Count	18	131	20	3	172
			%	10.5%	76.2%	11.6%	1.7%	100.0%
		reduced Nidra	Count	14	121	35	1	171
			%	8.2%	70.8%	20.5%	0.6%	100.0%
	Total		Count	72	436	82	10	600
			%	12.0%	72.7%	13.7%	1.7%	100.0%
Before Exam	Pearson Chi-Square		5.844[b]	P value	.441	Result		Not Significant
	Likelihood Ratio		7.115	P value	.310	Result		Not Significant
During Exam	Pearson Chi-Square		14.407[c]	P value	0.025	Result		Significant
	Likelihood Ratio		15.140	P value	0.019	Result		Significant
Total	Pearson Chi-Square		259.524	P value	0.000	Result		Significant
	Likelihood Ratio		317.988	P value	0.000	Result		Significant

The period prior and during the exam with Nidra score was used to examine the Sensitivity Score of first-year BAMS students in South Kerala. It was noted that, 37(20.7%) students of Sound Nidra, 16 (23.2%) students of disturbed sleep and 9 (17.3%) students of reduced Nidra have Low Emotional Sensitivity score, period prior to the exam.

131(73.2%) students of Sound Nidra, 51(73.9%) students of Disturbed *Nidra* and 39 (75%) students of reduced Nidra have Moderate Emotional Sensitivity score, period prior to the exam. 11(6.1%) students of Sound Nidra, 1(1.4%) student of Disturbed Nidra and 3 (5.8%) students of reduced Nidra have High Emotional Sensitivity score period prior to the exam. 1(1.4%) student of disturbed nidra and 1 (1.9%) student of reduced nidra have Extremely High Emotional Sensitivity score, period prior to the exam.

At the same time, it was noted that, 3 (3.8%) students of Sound Nidra, 2(1.9%) students of disturbed Nidra and 5 (4.2%) students of reduced Nidra have Low Emotional Sensitivity score period during the exam. 53(67.9%) students of sound Nidra,

80(77.7%) students of disturbed Nidra and 82 (68.9%) students of reduced Nidra have Moderate Emotional Sensitivity score period during the exam. 16(20.5%) students of Sound Nidra, 19 (18.4%) students of disturbed Nidra and 32 (26.9%) students of reduced Nidra have High Emotional Sensitivity score period during the exam. 6 (7.7%) students of sound Nidra and 2 (1.9%) students of disturbed Nidra have Extremely High Emotional Sensitivity score, period during the exam.

The Pearson Chi-Square Tests was used to examine the association between the Period, Nidra Score and Sensitivity Score. According to before exam period, the test value is 5.844, and the p value is 0.441, greater than .05. Hence, there is no discernible variation in Nidra Score on Emotional Sensitivity Score of first-year BAMS students in South Kerala.

During exam period, the test value is 14.407, and the p value is 0.025, lower than .05. Hence, there is discernible variation in Nidra Score on Sensitivity Score of first-year BAMS students in South Kerala. This implies that there was variation in the Nidra Score on Sensitivity Score, when the exam declares. Since the Likelihood ratio is 15.140 and significant, the variation during Exam of first-year BAMS students in South Kerala based on the Nidra Score to influence the Sensitivity Score is 15.140%. Hence there exists a dependent association between the Nidra Score to influence the Sensitivity Score during the exam period.

According to the Nidra Score, the test value is 259.524, and the p value is 0.000, lower than .05. Hence, there is discernible variation in Nidra Score on Sensitivity Score of first-year BAMS students in South Kerala. This implies that there was variation in the Nidra Score on Sensitivity Score. Since the Likelihood ratio is 317.988 and significant, the variation based on the Nidra Score to influence the Sensitivity Score was 317.988 %. Hence there exists a dependent association between the Nidra Score to influence the Sensitivity Score of first-year BAMS students in South Kerala.

DISCUSSION

The questions related to sleep were asked, mainly to assess both the quality and quantity of sleep. Based on the quantity of sleep students received, it was found in the study that there were discernible variations in the average sleep time of students between the two exam periods such as before and during the exam period. This shows that there were few factors that make the students uncomfortable during their sleep time, mainly during the exam period. The most probable reasons that influence sleep among the students were the Academic factors, Family issues, friend ship issues, Food and drink factors, environmental factors and so on. In the above study, the students were experiencing a short term

nidranasa (sleeplessness / sleep deprivation or Insomnia) developed from *Chittotklanta* (tension), *Chinta* **[11]** *and Soka* (excessive worries and grief due to unprepared mind), *Bhaya* (fear due to exam anxiety).

According to Acharya Vagbhatta **[12]**, *Chittotklanta* or mental tension, *Asukya shaiyya* or uncomfortable bed, *Sattaudarya* or unprepared mind, *Tamojaya* or freshness of mind and busy with some other works, *Rukshanna* or dry food, *Aswabhavika kaala* or unsuitable sleep time, *Bhaya* or fearing something leads to *Vata-Pitta dosha vrudhi* that induce sleep in normal individuals. According to Acharya Charaka, **[13]** factors such as *Ati- adhyayana* or excessive studying , *Ati Srama* or over exersion, *MargaVicharana* or improper life style, *Ratri jagarana* or awakening at night , disturbed sleep, *Sahasa* or doing things beyond one's capacity, *Utkantha* or Anxiety, *Duhka Saiyya* or uncomfortable sleep, *Dukhasana* or uncomfortable sitting, *Chinta and Soka* –excessive worries and grief, *Bhaya* or fear, leads to *Vata Prakopa,* which inturn cause *Nidranasa* (loss of sleep) finally imbalance the normal *Sareerika* and *Manasika* functions. Charaka samhita Chikitsa sthana 28th Chapter 18th sloka *"Karoti Vividan Vyadhin sarvanga ekanga samsrtan…*this sloka explain the above concept. *Pitta vrudhi* generally observed during *Ardharatri,* (mid night) just like during *Madyana dina, Ahara Vidahakaala* leading to *Alpa nidrata.*

Many factors influence or impact the character of an individual. Some students are able to manage their problems in a proper way, while some feel panic, nervous or over whelmed while handling certain situations. Such students or individuals require constant reassurance, advice, counselling, care, attention, supports from care givers or parents. Each individual is born with some affective capacities and have innate responses in the form of Emotions **[14]**. We communicate with our emotional experiences to others. Such emotions influence our relationships and in turn our relationships influence our emotions. The ability to perceive, use, understand and regulate emotions, ability to monitor other's emotions, ability to discriminate the emotions, using emotions to guide one's thinking actions are associated with the psychological development of a person. Such ability was coined under a single term as Emotional Intelligence by the famous Psychologists Salovey and Mayer **[15]**.

Daniel Goleman **[16]** popularised the concept of Emotional Intelligence (EI) in 1990s and defined it as the ability to understand, use and manage emotions in positive ways to relieve stress, communicate effectively and manage the emotions of one's self, of others and of groups.

Emotional quotient is the measure of Emotional intelligence.

Emotional Sensitivity [17]: The phrase "Emotionally Sensitive" is utilized frequently in colloquial settings to identify individuals whom others may describe as sensitive, dramatic and over-reactive. Few children has a tendency to display emotions such as hurt, sorrow, worry, fear, anger and will be straight forward than those who are less emotionally sensitive. Clinically, emotionally sensitive people have been described as "those who experience intense emotions more frequently and for longer periods of time." In psychological sense **[18]** Sensitivity means the characteristic of being peculiarly sensitive and judge the threshold for various types of stimulations, feelings and emotions. Empathy, the ability to sense others' feelings, ability to share and accept the feelings of others, creativity or imagination, compassion, are some of the positive aspects of Emotional sensitivity. It also helps to improve the inter-personal relations. But on the other hand if Emotional sensitivity higher the person may overwhelmed with emotions, criticising mentality will be more, anxiety, depression, other personality disorders can also affect such individuals **[19]**.

In the present study, when the association between exam period and Emotional sensitivity level of first-year BAMS students in South Kerala was assessed, it was found that, there were variations in Emotional Sensitivity score from Low level to extremely high level when the exam declares. When the association between three variables such as *nidra* score, exam period and Emotional Sensitivity score of first-year BAMS students were assessed, it was found that there existed no discernible variations in Emotional Sensitivity score months before exam period while variations existed in *nidra* score on Emotional Sensitivity score, during the exam period and hence there existed a dependent association between the *Nidra* score and the Emotional Sensitivity score. The increased Emotional sensitivity level, during exam period, helped the students in many ways **[20]**. Though the students were under the stressful environment, their level of understanding various situations, understanding each other's emotions, compassion like care, creativity in studies, sometimes the level of reluctance - to studies or to any extra activities, level of thoughts (rejection sensitivity) – negative / positive thoughts, level of difficulties, level of learning and remembering, level to focus on questions (exam anxiety symptoms), level of demonstration of ideas, objectives, level of their knowledge, skills have increased, than 3 months before their examination period.

Such change in the Emotional Sensitivity level, even though sleep was impaired or

during the change in circadian rhythm, is found to be a physiological mechanism happened in the body that helps to improve the ability of students to control their physical symptoms or emotions due to exam anxiety. Previous research works showed that, on neural basis, emotions began to evolve from the olfactory lobe **[21]**. Some research studies, use electro-physiologic and lesion techniques and found that Amygdala plays a very crucial role in emotional processing in mammals. The Amygdala, responds to the emotions evolved due to their neural connections with regions of Limbic system. They are the key factors in developing EI and form the emotional nerve centre of the brain **[22]**. Their responses are mainly through the hormones like adrenalin and cortisol (during stress) and the functional mechanism of amygdala is often referred to as 'Emotional hijacking'. During emotional processing, the main job of amygdala is to respond to a threat by increasing Heart rate, sweating etc. The Prefrontal cortex acts as the manager of such emotions by interpreting, expressing, regulating and organizing the emotion based reactions before acting on it. The Prefrontal cortex is considered as the crucial component for EI, due to its connection with the Amygdala. The Orbital frontal cortex, which has connections with amygdala, is also a site of emotional processing. They play the crucial role for understanding and managing emotions. Hence any damage to the Prefrontal cortex, Orbitofrontal cortex can results in social incompetence and decreased sensitivity to social and situational stimuli, poor interpersonal interactions and relationships, abnormal changes in the mood and personality of individual and decreased EQ.

In the present study, improper sleep among students due to exam anxiety is for a short duration of period. If any kind of damages occurred to the Prefrontal cortex or other brain areas associated with Emotional sensitivity develops during this period, then his Emotional sensitivity will change or found to get reduced. But, here, since the students were apparently healthy, the chances for damage to the above areas were less. More than that, here the students' stress might be the Eustress. That could be the reason why the level of Emotional sensitivity found not to get decreased, but increased to the higher level and helped the students to be self-aware, self-improved and self-acceptance.

So among the students, though impaired sleep was there, the increased Emotional sensitivity helps to activate the *Mano vishayas* **[23]** (objects of mana) such as *Chintyam* (things requiring thoughts), *Vicharyam* (consideration), *Uhyam* (hypothesis), *Dhyeyam* (emotional thinking), *Sankalpya* (determination), which

helps them to keep the mind healthy during the stressful situations.

Students with low Emotional Sensitivity level[24]may not be aware about the threshold of feelings. They found difficulties in recognizing emotions of themselves or of others and in empathizing with others. Such students will be non-responsive to what they see around them**.** They require special attention and support as it could lead to several mental health issues, impaired communication and strained relationships so on.

CONCLUSION

When the sleep level or *Nidra* among the students were assessed, it was found in the study that there were discernible variations among the students during both the period of examinations such as 3 months before exam period and during exam period. *Nidra* was disturbed and reduced during the exam period than 3months before the exam period. Discernible variations were also observed in the Emotional Sensitivity level of students on both period of exam such as 3 months before exam period and during exam period. No students were found to have low Emotional Sensitivity level in the present study during both the period of examinations. This emphasizes the fact that disturbed or reduced sleep or improper Nidra, has influenced the Emotional sensitivity level of students, especially when they face crucial situations. Since such *nidranasa* was for a short duration of period due to the Eustress, the raised Emotional Sensitivity level, guided the students to manage the symptoms of stress, to understand the emotions of themselves and others, enhanced creativity, develop personal relationships, self – regulations and so on. Many research studies, mentioned that sleep impairments, for short duration of period, adversely influence Emotional Sensitivity level, where individuals unable to manage minor stressful situations that leads to unhealthy mental functions, suicidal tendencies and so on. So to identify the problem, the most stressful situations of students like exam period were selected and found that the Emotional Sensitivity level has increased during such crucial situations. Here, our body's Neuro-endocrine mechanisms tried to maintain the internal environment stable by changing the levels of Emotional sensitivity when sleep got impaired for very short term duration. But if the sleep impairment due to stress persists for longer period or the situation become distress, it could impair the Emotional Sensitivity level adversely. So assessing the Emotional Sensitivity level of individual is necessary in the present era to recognize the real emotions or trauma he or she is going through, to identify neuro-developmental disorders and personality disorders and to provide adequate support or counselling for the present generation.

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