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Research Article

A Pilot Study: "Effectiveness Of Yoga Therapy To Improve Quality Of Sleep And Mental Health Among Nursing Students In Selected Nursing Colleges At Uttar Pradesh"

Nida Wajid[1*], Dr. Santosh Kumar Gurjar[2]

[1*]Ph.D Scholar Department of Mental Health Nursing Desh Bhagat University Mandi Govindgarh Punjab.,
[2]Professor, Department of Nursing Desh Bhagat School of Nursing, Desh Bhagat University Mandi Govindgarh Punjab.

***Corresponding Author-** Ms. Nida Wajid
*Email id- nidawajid9@gmail.com

ABSTRACT:
Inadequate sleep is linked to compromised mental, psychological, and physical abilities that people need for optimal health and wellness.Stress is a major factor for nursing students as they strive to fulfil their professional obligations. Yoga is a useful technique for lowering stress and enhancing mental wellness. However, managing stress and anxiety is aided by improvements in psychological well-being. The purpose of the study was to assess how yoga practice might help nursing students manage their mental health, including stress and anxiety, as well as their sleep quality. A true experimental design was used sample were selected through simple randomization. .Selected nursing college in Uttar Pradesh, India served as the study's site. 60 nursing students from various Uttar Pradesh, India-based nursing colleges participated.30 individuals were assigned at random by the researcher to the intervention group and another 30 to the control group. For 30 days, the yoga group practiced yoga for 40 minutes every day. There was no intervention given to the control group. The researcher used the Pittsburgh Sleep Quality Index (PSQI), the Beck Anxiety Inventory (BAI), and the Students Stress. Inventory (SSI) to examine outcomes at baseline and 30 days after the intervention. The paired t test was used once the researcher determined whether the data were normal. After the intervention, the yoga group's mental health variables—such as stress and anxiety and sleep quality—dropped considerably more than those of the control group. Three facets of QOS and mental health were shown to have significantly improved for the yoga group. This study's findings indicate that a four-week yoga intervention has a positive impact on nursing students' mental health. To satisfy the demands of the nursing profession, yoga intervention can be incorporated into nursing education. Yoga may be beneficial for nursing students in managing their mental and sleep wellness. By enhancing general mental health, improving the quality of sleep, and lowering stress and anxiety, yoga can improve quality of life.

KEYWORD: *Stress, Anxiety, Mental Health, Nursing Students, Quality of sleep.*

***Author for correspondence: Email:** nidawajid9@gmail.com*

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Introduction

Sleep is essential for preserving general health, especially for college students, as it not only allows the body to recuperate but also impacts learning[1].Stress was one of the many variables that influenced cognitive performance, and sleep quality also had a substantial impact[2].Furthermore, absence of sleep during the night and poor quality of sleep accounted for the majority of college students' experiences with sleep deprivation[3]. The majority of students often neglect to obtain enough sleep since they are so focused on preparing for a competitive future that they stay up late to finish their assignments[4].irregular sleep patterns that result in significant daytime drowsiness.[5.6], might eventually have an impact on how well someone sleeps. Nursing students' reported causes of stress are associated with their clinical practice and academic pursuits, according to a comprehensive study completed up until 2010. On the other hand, perceived stress was linked to clinical practice[7] rather than academic expectations, leading to a higher level of psychological symptoms[8]. Compared to other students, nursing students experience significantly higher levels of stress and anxiety[9], particularly among female students[10]. Thus, in order to preserve their mental health, nursing students need to control their stress and get enough sleep[11].

Objectives

- To assess the pre-test level on quality of sleep among control group and experimental group.
- To assess the post-test level on quality of sleep among control group and experimental group.
- To assess the pre-test level mental health among control group and experimental group.
- To assess the post-test level mental health among control group and experimental group.
- To evaluate the effectiveness of yoga therapy to improve quality of sleep and mental health among nursing students.
- To associate the pretest mental health score of experimental group and control group with their demographic variables.
- To associate the pretest quality of sleep score of experimental group and control group with their demographic variables.

Hypothesis

- There will be significant effectiveness of yoga therapy to improve quality of sleep and mental health.
- There will be significant association of effectiveness yoga therapy with their demographic variables

Assumption

The study assumed that:

- The students fill the data honestly.
- Yoga therapy improves the quality of sleep and mental health among nursing students.

Delimitation

The study was delimited to nursing students

- who are studying in selected nursing college of Uttar Pradesh.
- who will fulfill the designated criteria of the research study.

Material and Method

Research design: A true-experimental pretest-and-posttest control design was used to evaluate the effect of yoga therapy to improve quality of sleep and mental health among nursing students at selected nursing college Moradabad.

Study setting: The study was conducted at the selected nursing college Moradabad.

***Subjects*:** The study sample comprised 30 nursing students from the above mentioned setting who fulfilled the following inclusion criteria

- Nursing students studying in B.Sc. 1st year willing to participate in the study.
- B.Sc 1st year students who are studying in selected nursing college of uttar pradesh

Sampling technique: Probability sampling technique adopted to enhance the representativeness of selected sample and the chance of systematic bias are relatively less because the subjects was randomly select. In the present study sample was selected by using simple random sampling technique

Sample size calculation: The sample size was calculated using EPI info software program version 6.04 and using G* power version 3.1.9.2 for a priori sample size computation, it was determined that 57 participants were needed with an effect size of 0.347, an alpha value of 0.05, and an actual power of 0.80. It was based on the prevalence of sleep quality and mental health among nursing studnts study conducted by the researcher in the same study setting, which was 46.6%. The sample size was 60 assuming that the nursing students population attending the college was 330 (based on the records of the previous study), desired precision 90%, and at confidence level 95%. A total of 60 first-year B.Sc. in nursing students were chosen from a list of nursing colleges in Uttar Pradesh, India. Students that were open to learning yoga were included in this study. The research project was completed in June and July of 2023. Following screening, students were divided into two groups at random. The control group carried out their regular work for the first four weeks while the yoga group received yoga intervention six days a week for 40 minutes each day. After the completion of study, yoga intervention was given to control group also.

Ethical approval

All of the students who were selected for the research project gave their informed consent, and the study was approved by the institutional ethics committee.

Intervention

Yoga therapy will help to enhance mental and sleep

quality as Kriya Sudarshan Kriya Sudarshan Yoga is a traditional breathing method used to cleanse the body, mind, and soul. Its name comes from its Sanskrit roots, where "su" means "good" or "right," "darshan" means "sight" or "vision," and "kriya" refers to the purification techniques used in yoga. Consequently, Sudarshan Kriya means "creating the correct viewpoint by purification of action[12.13.14].

Elements

Sudarshan Kriya exists in only one form which is made up of three different paces of breathing. That being said, there exist varied elements that constitute the broader practice of Sudarshan Kriya. These have been examined below.

- **Vajranasa:**
- **Ujjayi**
- **Bhastrika Pranayam**
- **Chanting "Om"**
- **Kriya**
- **Meditation**

How to do Sudharshan Kriya

Follow the below-mentioned Sudarshan Kriya steps to reap its benefits.

- **Step 1:** Practitioners begin by sitting down in the Vajrasana or thunderbolt pose.
- **Step 2:** Next, practitioners start performing Ujjayi which requires them to take in longer breaths such that they can feel their breath touching their throat. They are required to take in 2 to 4 breaths each minute. Slow breathing helps practitioners gain control over their breath.
- **Step 3:** After they finish performing Ujjayi, practitioners must perform Bhastrika pranayama which requires them to inhale and exhale air at a rapid, forceful pace. Ideally, practitioners must take in 30 breaths each minute. Each exhalation must take twice the amount of time that each inhalation takes.
- **Step 4:** Next, practitioners must chant the word "Om" three times. After the first two times Om is chanted, there should be silence such that a state of bliss can be experienced. This is followed by Om being chanted for the third time
- **Step 5:** Practitioners then perform Kriya which requires them to breathe at a slow, medium, and fast pace. These breaths must be cyclical and should follow a rhythm.
- **Step 6**: Mediatation:

Standard duration

- The whole process should take 40 minutes. For posture and Kriya, one should dedicate a good 30 minutes and 10 minutes for meditation.

Result

Organization of the data

Self-administered structured questionnaire was used to assess the effectiveness of yoga therapy to improve sleep quality and mental health among the 60 nursing students as 30 experimental group and 30 control group. The data obtained were analysed, organized according to the objectives and have been delineated under the following sections-:

- **Section- I:** Finding rleted to demographic profile of the study subjects. Frequency and percentage computation were done to describe the sample characteristics of experimental group and control group.
- **Section -II:** Finding related to assess the pre-test level quality of sleep among control group and experimental group.
- **Section -III:** Finding related to assess the post-test level quality of sleep among control group and experimental group.
- **Section -IV:** Finding related to assess the pre-test level mental health among control group and experimental group.
- **Section -V:** Finding related to assess the post-test level mental health among control group and experimental group.
- **Section -VI:** Finding related to evaluate the effectiveness of yoga therapy to improve quality of sleep and mental health among students.
- **Section -VII:** Finding related to associate the pretest quality of sleep score of experimental group and control group with their demographic variables.
- **Section -VIII:** Finding related to association between the pretest mental health score of experimental group and control group with their demographic variables.

SECTION-I: DEMOGRAPHIC PROFILE OF THE STUDY SUBJECT

Table-01: **frequency, percentage distribution of students by their demographic characteristics (age, gender, class, marital status, community, religion, living status, education of parent's, family income,) n= 60**

Demographic Performa		Experimental group (30)		Control group (30)	
		(%)	(f)	(%)	(f)
Age	17-18years	23.3%	7	20%	6
	19-20years	30%	9	40%	12
	21-22 years	26.7%	8	26.7%	8
	23 years and above	20%	6	13.3%	4
Gender	Male	33.3%	10	36.7%	11

	Female	66.7%	20	63.3%	19
Religion	Hinduism	33.3%	10	30%	9
	Islam	20%	6	20%	6
	Sikh	16.7%	5	13.3%	4
	Christianity	20%	6	20%	6
	Other	10%	3	16.7%	5
Education of Parents	Illiterate	10%	4	16.7%	5
	5th-8th class	20%	6	30%	9
	10th-12th class	36.7%	11	33.3%	10
	Graduation and above	33.3%	9	20%	6
Monthly income of parents	Below 10k	23.3%	7	26.7%	8
	11k-20k	23.3%	7	26.7%	8
	21k-30k	26.7%	8	23.3%	7
	31k-above	26.7%	8	23.3%	7
Residing Status	Residing With family	26.7%	7	23.3%	7
	Residing Rented house	20%	6	20%	6
	Residing Hostel	26.7%	8	26.7%	8
	Residing P.G room	30%	9	30%	9
Domicilary area	Urban	56.7%	17	60%	18
	Rural	43.3%	13	40%	12

According to the above mentioned table, out of the 30 nursing students in the experimental group, 23.3% were 17-18 years old, 20% were 23 years of age or older, 30% were 19–20 years old, and 26.6% were 21–22 years old. Of the 30 nursing students, 33.3% were men and 67.7% were women. 30 nursing students comprised the following religious groups: 33.3% were followed Hinduism 20% followed Islam, 16. 7% were Sikh, 33.3% were Christians, and 10% belonged to another religious organisation. 10% of parents were illiterate, 20% had education up to the 5^{th}- 8^{th} grade, 36.7% had education up to the 10^{th}-12^{th} grade, and 33.3% had education up to the graduation or above. The data collected indicates that, of the 30 nursing students, 23.3% belong to the group with a monthly family income of less than Rs.10k, 23.3% to that of Rs.11k – 20k, 26.7% to that of Rs21k–30k, and 26.7% to that of Rs 31k and above. Of the 30 nursing students, 26.7% lived with their family, 20% rented, 26% were in a hostel, and 30% were in a P.G. room.Of the 30% nursing students, 56.7% were from an Urban area and 43.3% were from a Rural one.In the control group of 30 nursing students, the same study reveals that 20% were 17–18 years old, 40% were 19–20 years old, 26.7% were 21–22 years old, and 13.3% were 23 years old and older. 36.7% of the thirty nursing students male, 63.3% were female students. Of the thirty nursing students, 30% practiced Hinduism, 20% practiced Islam, 13% practiced Sikhism, 20% Christianity, and 16% practiced another religion. According to the data, 16.7% of parents were illiterate, 30% had completed up to the 5^{th} -8^{th} grade, 33.3% had completed between the 10^{th} -12^{th}grades, and 20% had completed graduation or above . Based on the information gathered, we were able to determine that, of the 30 nursing students, 26.7% had monthly family incomes of less than $10,000, 26.7% had monthly incomes of between $11,000 and $20,000, 23.3% had monthly incomes between $11,000 and $30,000, and 23.3% had monthly incomes of $13,000 and more. Among the 30 nursing students, 23% lived in their own home, 20% rented, 26% were in a hostel, and 30% were in a P.G. room.Of the 30 nursing students, 60% were from Urban areas and 40%were from Rural ones.

FIGURE-01

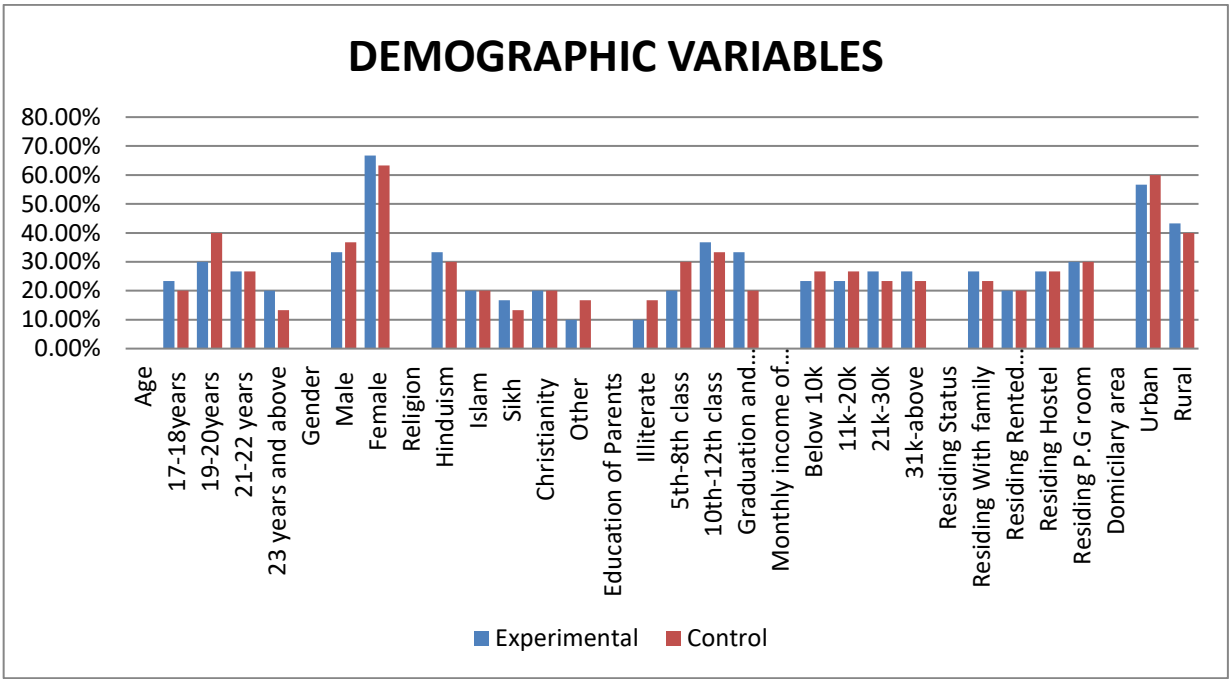

FIGURE- 01 Bar diagram depicting the frequency percentage of demographic variable

SECTION-II: FINDING RELATED TO ASSESS THE PRE-TEST SCORE QUALITY OF SLEEP AMONG CONTROL GROUP AND EXPERIMENTAL GROUP.

Table -02: The section looks at the analysis, description and interpretation of the data collected to assess the pretest level of quality of sleep. From the obtained scores mean and standard deviation deprivated.

Descriptive Statistics		Mean	Mode	Median	SD	Variance	Max	Min	Range
Pre-test level quality of sleep	Exp	11	15	14	5.95	35.37	18	0	8
	Cont	10.93	15	13.5	6.02	36.27	18	0	12

The table 2 shows that the range of obtained scores for the subjects was from. The computed mean 11 for expermental group and 10.93 for control group. The standard deviation 5.95 for experimental group and 36.27 for control group.

FIGURE- 02

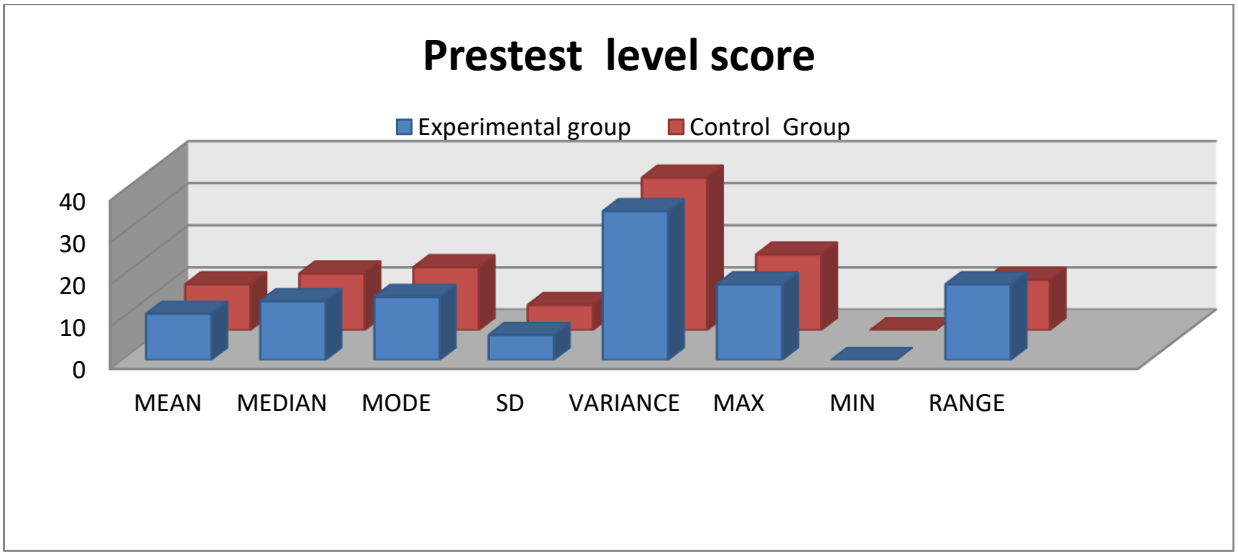

Figure 02: Bar diagram depicting the descriptive statistic mean and standard deviation value of pretest level score of sleep quality.

SECTION-III: FINDING RELATED TO ASSESS THE POST-TEST SCORE QUALITY OF SLEEP AMONG CONTROL GROUP AND EXPERIMENTAL GROUP.

TABLE -03

Descriptive Statistics		Mean	Mode	Median	SD	Variance	Max	Min	Range
Post-test level quality of sleep	Exp	7.43	0	9	5.26	27.70	14	0	14
	Cont	14.3	16	15	3.056	9.34	18	6	12

The table 3 shows that the range of obtained scores for the subjects was from. The computed mean 7.43 for expermental group and 14.3 for control group. The standard deviation 5.26 for experimental group and 9.34 for control group.

FIGURE-03

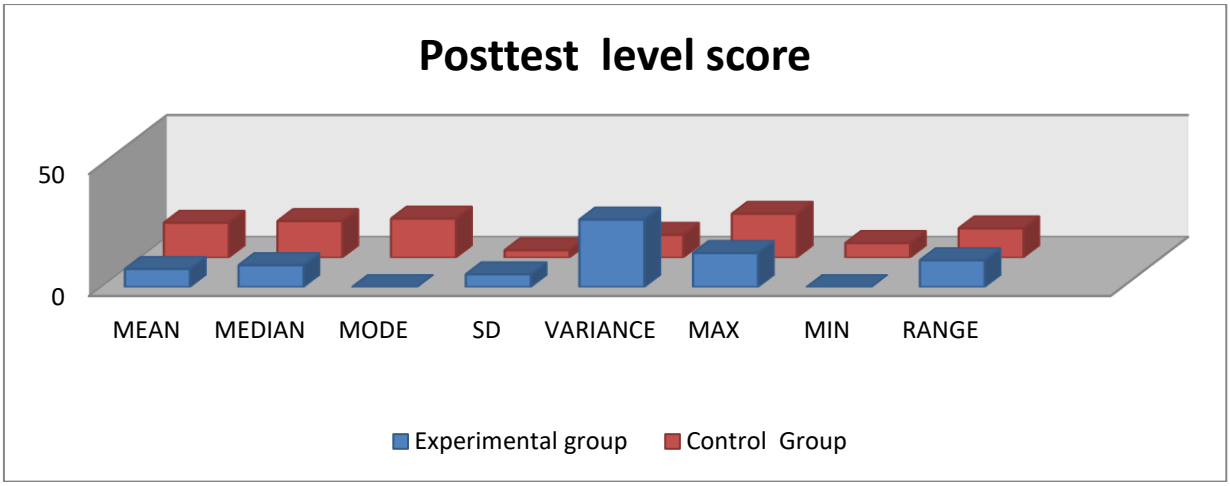

Figure 03: Bar diagram depicting the descriptive statistic mean and standard deviation value of posttest level score of sleep quality

SECTION-IV: FREQUENCY AND PERCENTAGE DISTRIBUTION OF THE SUBJECT ACCORDING TO CRITERIA MEASURE QUALITY OF SLEEP

TABLE -04 n=30 each group

Criteria measure sleep quality								
Category	Experimental group				Control group			
	Pretest		Post test		Pretest		Posttest	
	F	P	F	P	F	P	F	P
0 No sleep difficulty	5	16.7%	8	26.7%	5	16.7%	0	0%
1-7 mild sleep difficulty	5	16.7%	6	20%	5	16.7%	2	6.7%
8-14 moderate sleep difficulty	7	23.3%	16	53.3%	6	20%	9	30%
15-21 severe sleep difficulty	13	43.3%	0	0%	14	46.6%	19	63.3%

The data in table 04 indicate that out 30 subjects in experimental group 16.7% students having no sleep difficulty in pretest and 26.7% in post test. 16.7% has mild sleep difficulty in Pre-test and 20% has mild sleep quality in posttest score, 23.3% has moderate sleep difficulty in pre-test and 53.3% has moderate sleep difficulty in post-test, and 43.3 % has severe sleep difficulty and 0% has severe sleep difficulty and out 30 subjects in control group 16.7% students having no sleep difficulty in pre and 0% in post test. 16.7% has mild sleep difficulty in Pre-test and 6.7% has mild sleep quality in posttest score, 20% has moderate sleep difficulty in pre-test and 30% has moderate sleep difficulty in post-test, and 46.6% has severe sleep difficulty and 63.3% has severe sleep difficulty.

FIGURE- 04

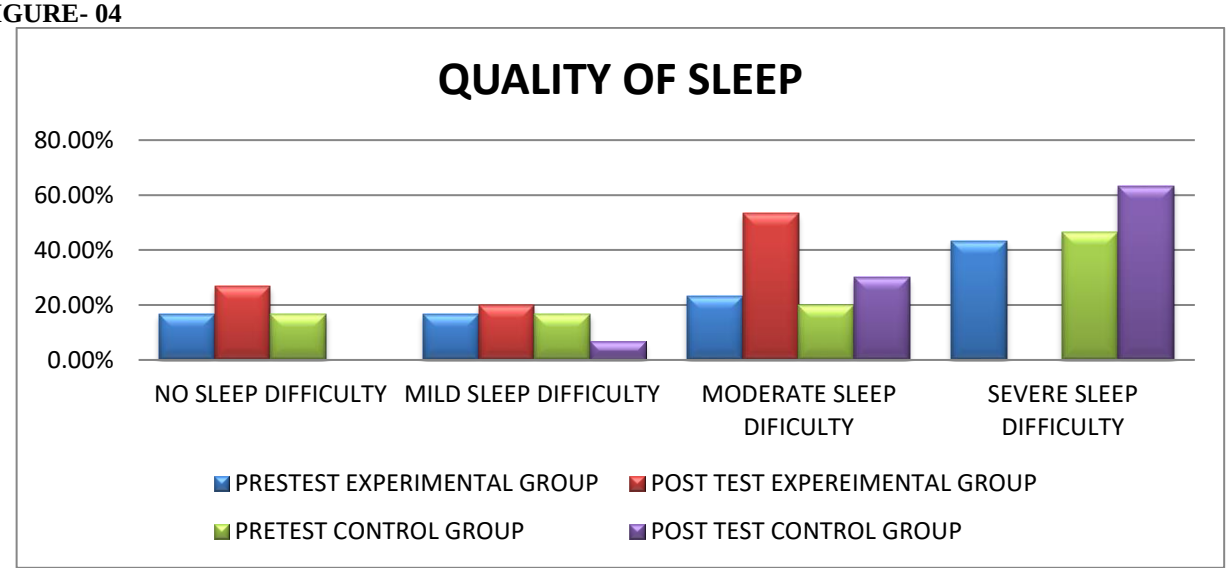

Figure 04: Bar diagram showing percentage pretest and post test score of quality of sleep in experimental group and control group.

SECTION V: FINDING RELATED TO ASSESS THE PRE-TEST LEVEL STUDENT STRESS AMONG CONTROL GROUP AND EXPERIMENTAL GROUP.

The section looks at the analysis, description and interpretation of the data collected to assess the stress level. From the obtained scores mean and standard deviation.

TABLE-05

Descriptive Statistics		Mean	Median	Mode	SD	Variance	Max	Min	Range
Pretest Score	Exp	104.23	107.5	123	19.7	391.49	126	69	57
	Cont	110.5	116	128	18.98	360.46	132	73	59

The table 05 shows that the range of obtained scores for the subjects was form. The computed mean 33 for expereimental and 110.5 for control group and standard deviation 19.7 for experimental and 18.98 for control group.

FIGURE - 05

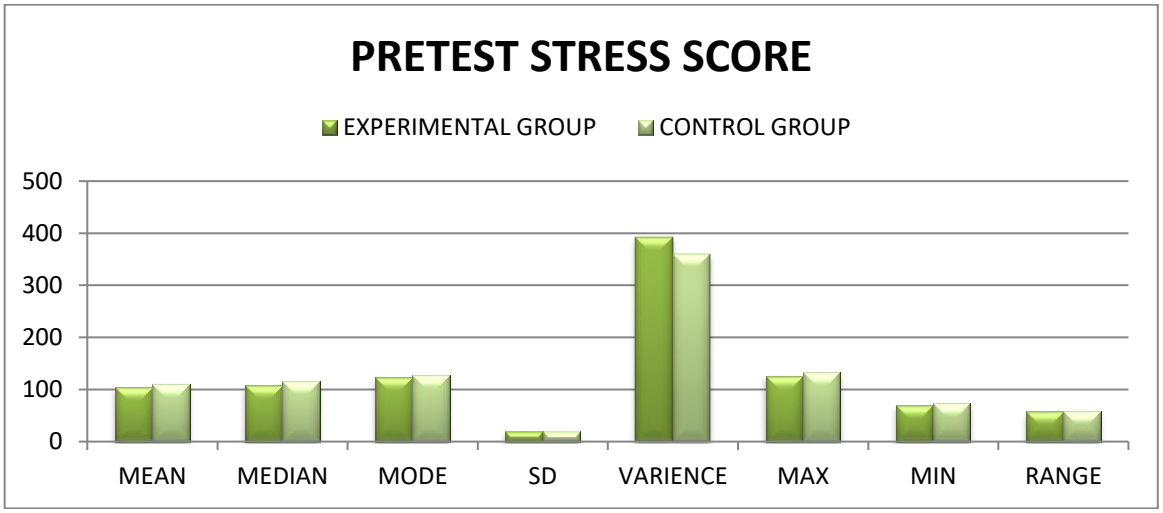

Figure 05: Bar diagram depicting the descriptive statistic mean and standard deviation value of prestest stress score

SECTION VI: FINDING RELATED TO ASSESS THE POST-TEST LEVEL STUDENT STRESS AMONG CONTROL GROUP AND EXPERIMENTAL GROUP.

The section looks at the analysis, description and interpretation of the data collected to assess the stress level. From the obtained scores mean and standard deviation.

TABLE-06

Descriptive Statistics		Mean	Median	Mode	SD	Variance	Max	Min	Range
Post-test Score	Exp	92.06	79	79	17.12	293.09	116	70	46
	Cont	120.53	120.5	124	7.899	62.39	140	106	34

The table 06 shows that the range of obtained scores for the subjects was form. The computed mean 92.07 for expereimental and 120.53 for control group and standard deviation 17.12 for experimental and 62.39 for control group.

FIGURE -06

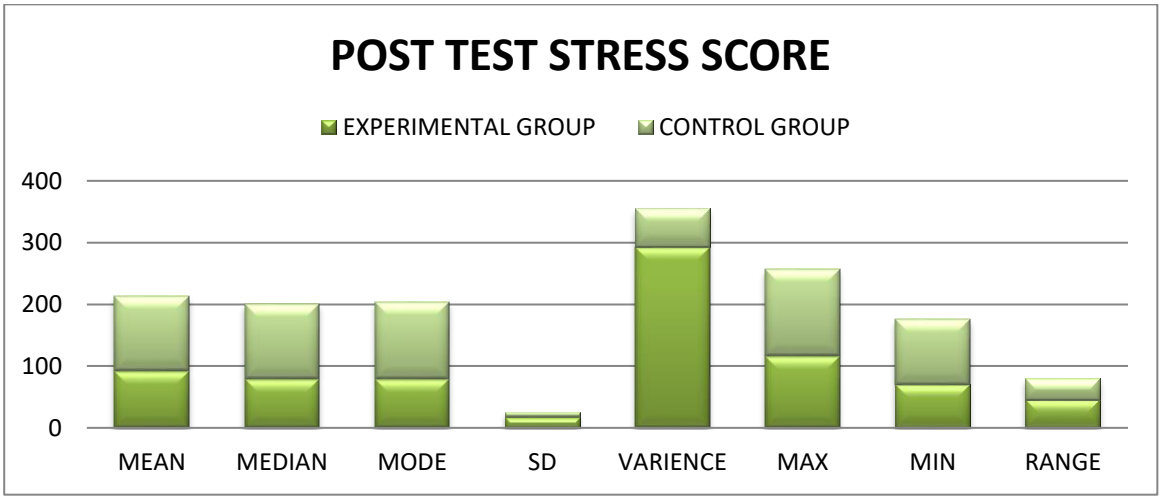

Figure 06: Bar diagram depicting the descriptive statistic mean and standard deviation value of stress post test score

SECTION-VII: FREQUENCY AND PERCENTAGE DISTRIBUTION OF THE SUBJECT ACCORDING TO CRITERIA MEASURE STRESS SCORE

The section describes frequency and percentage computation were done to describe the level of stress

TABLE -07 n=30 each group

CRITERIA MEASURE TO STRESS								
CATEGORY	EXPERIMENTAL GROUP				CONTROL GROUP			
	PRETEST		POST TEST		PRETEST		POSTTEST	
	F	P	F	P	F	P	F	P
40-80 Mild stress	8	26.7%	17	56.7%	7	23.3%	0	0%
81-121 Moderate stress	9	30%	13	43.3%	11	36.7%	15	50%
122-140 Severe stress	13	43.3%	0	0%	12	40%	15	50%

The data in table 07 indicate that out of 30 subjects in experimental group 8% students having mild stress in pre and 56.7% students having mild stress in post test. 30% has moderate stress in Pre-test and 43.3% has moderate stress in posttest score, 43.3% has severe stress in pre-test and 0% has severe stress in post-test and out of 30 subjects in control group70% students having mild stress in pre and 0% in post test. 36.7% has moderate stress in Pre-test and 50% has moderate stress in posttest score, 40% has severe stress in pre-test and 50% has severe stress in post-test.

FIGURE 07

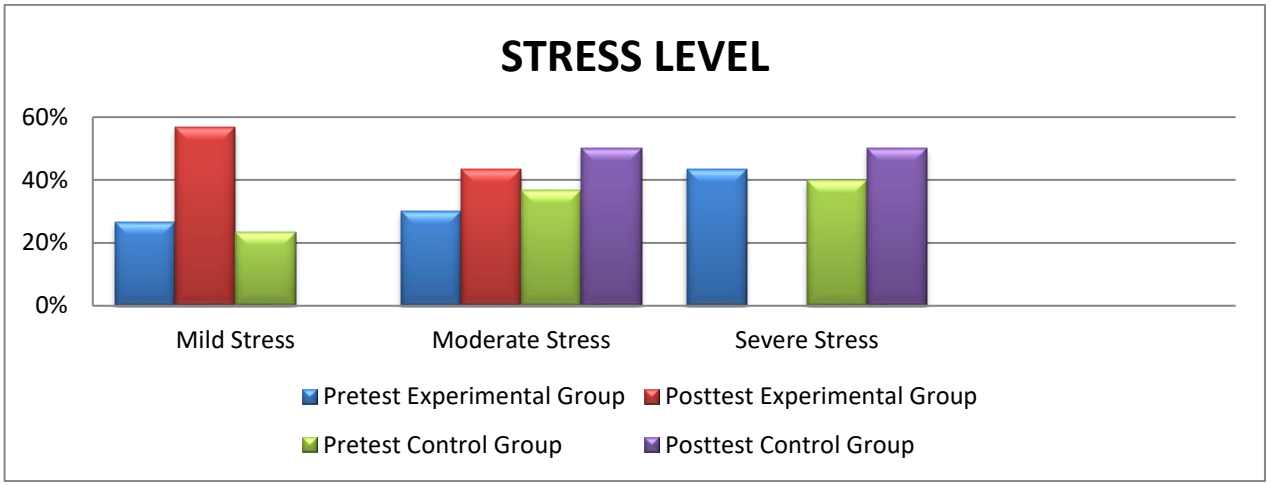

Figure 07: Bar diagram showing percentage pretest and post test score of stress level in experimental group and control group

SECTION VIII: FINDING RELATED TO ASSESS THE PRE-TEST LEVEL STUDENT ANXIETY AMONG CONTROL GROUP AND EXPERIMENTAL GROUP.

The section looks at the analysis, description and interpretation of the data collected to assess the anxiety level. From the obtained scores mean and standard deviation.

TABLE-08

Descriptive Statistics		Mean	Median	Mode	SD	Variance	Max	Min	Range
Pretest Score	Exp	34.13	37	21	9.51	90.60	47	18	29
	Cont	33.83	34	20	9.73	94.62	49	20	29

The table 08 shows that the range of obtained scores for the subjects was form. The computed mean 34.13 for expereimental and 33.83 for control group and standard deviation 9.51 for experimental and 9.73 for control group.

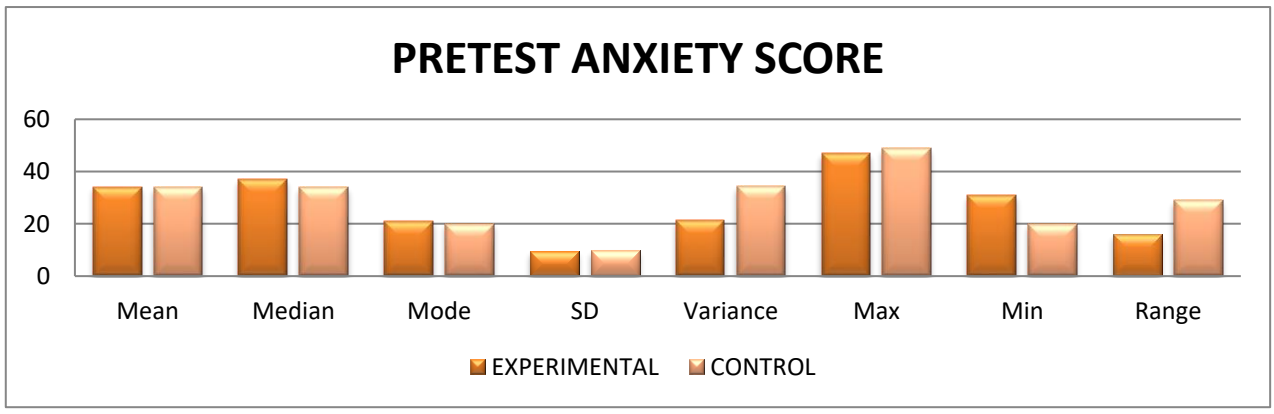

FIGURE-08

Figure 08: Bar diagram depicting the descriptive statistic mean and standard deviation value of prestest anxiety score

SECTION IX: FINDING RELATED TO ASSESS THE POST-TEST LEVEL STUDENT ANXIETY AMONG CONTROL GROUP AND EXPERIMENTAL GROUP.

The section looks at the analysis, description and interpretation of the data collected to assess the anxiety level. From the obtained scores mean and standard deviation.

TABLE-09

Descriptive Statistics		Mean	Median	Mode	SD	Variance	Max	Min	Range
Posttest Score	Exp	26	28	20	6.09	37.17	35	17	18
	Cont	39.4	39	38	4.84	23.48	49	32	17

The table 09 shows that the range of obtained scores for the subjects was form. The computed mean 26 for expereimental and 39.4 for control group and standard deviation 6.09 for experimental and 4.84 for control group.

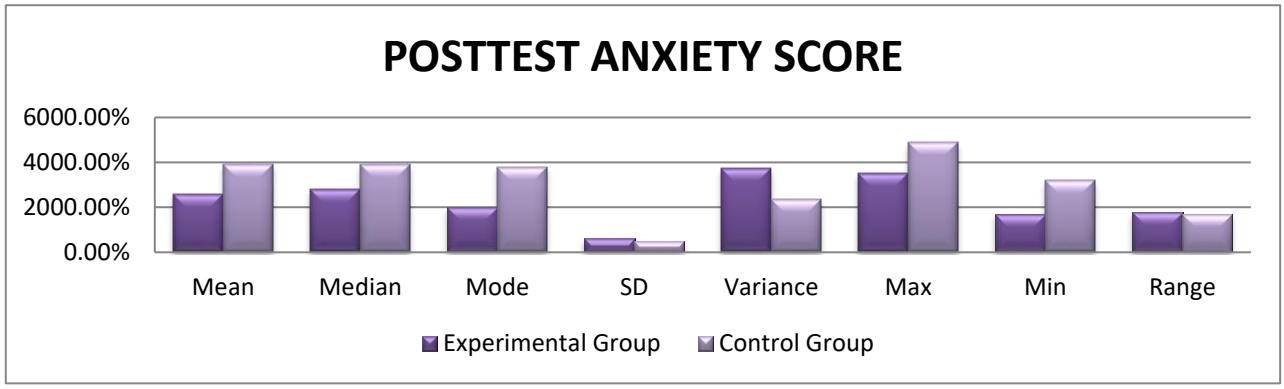

FIGURE-10

Figure 10: Bar diagram depicting the descriptive statistic mean and standard deviation value of posttest anxiety score

SECTION-VII: FREQUENCY AND PERCENTAGE DISTRIBUTION OF THE SUBJECT ACCORDING TO CRITERIA MEASURE ANXIETY SCORE

The section describes frequency and percentage computation were done to describe the level of stress

TABLE -10 n=30 each group

Criteria measure anxiety								
Category	Experimental group				Control group			
	Pretest		Post test		Pretest		Posttest	
	F	P	F	P	F	P	F	P
Score of 0-21 = low anxiety	7	23.3%	13	43.3%	08	26.7%	0	0%
Score of 22-35 = moderate anxiety	7	23.3%	17	56.7%	08	26.7%	08	26.7%
Score of 36 and above = potentially concerning levels of anxiety	16	53.4%	0	0%	14	46.6%	22	73.3%

The data in table 10 indicate that out of 30 subjects in experimental group 23.3% students having low anxiety in pre and 43.3% students having low anxiety in post test. 23.3% has moderate anxiety in Pre-test and 56.7% has moderate anxiety in posttest score, 53.4% has severe potentially concerning levels of anxiety in pre-test and 0% has potentially concerning levels of anxiety in post-test and out of 30 subjects in control group 26.7% students having low anxiety in pretest and 0% students having low anxiety in post test. 26.7% has moderate anxiety in Pre-test and 26.7% has moderate anxiety in posttest score, 46.6% has potentially concerning levels of anxiety in pre-test and 73.3% has potentially concerning levels of anxiety in post-test.

FIGURE-11

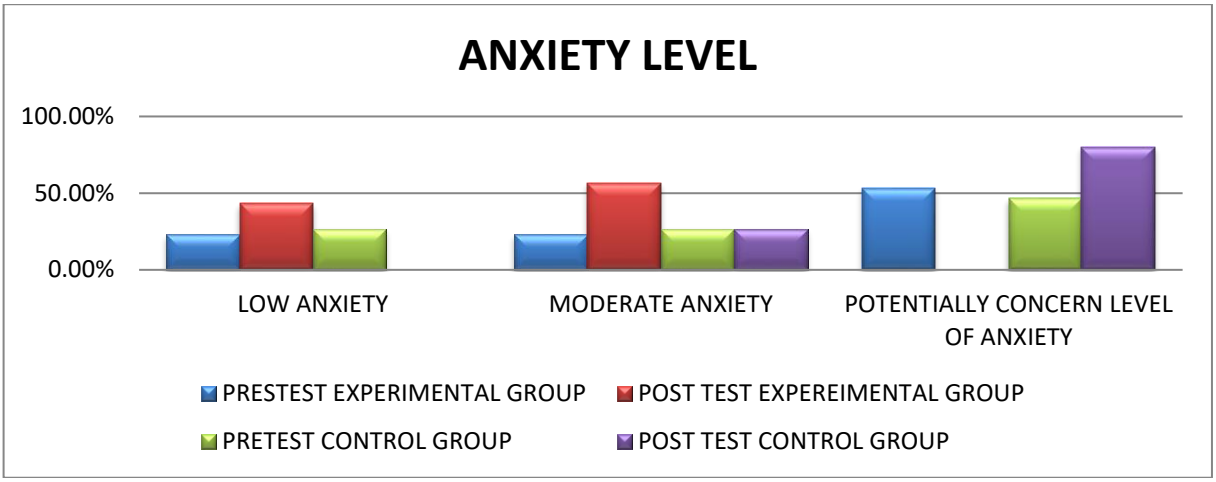

Figure 11: Bar diagram showing percentage pretest and post test score of 2607nxiety in experimental group and control group.

SECTION -VI: FINDING RELATED TO EVALUATE THE EFFECTIVENESS OF YOGA THERAPY TO IMPROVE QUALITY OF SLEEP AND MENTAL HEALTH AMONG STUDENTS.

TABLE-11: Comparison of the mean value of PSQI component and global score of the studied students pre and post intervention in experimental.

S. No	Components of quality of sleep	Phase		t-Value	df	SED	SEM		p-Value	Significant at 0.05 level
		Pretest (N=30) M±SD	Posttest (N=30) M±SD				Pre test	Postt est		
1	Sleep quality	2.5±0.57	1.76±0.73	4.4276	29	0.166	0.10	0.13	0.0001	Significant
2	Sleep latency	2±0.64	1.53±0.94	2.8425		0.164	0.12	0.17	0.0081	Significant
3	Sleep duration	2.03±0.93	1.57±0.89	3.2935		0.142	0.17	0.16	0.0026	Significant
4	Sleep efficiancy	1±1.02	0.9±0.92	0.5708		0.175	0.19	0.17	0.5725	Significant
5	Sleep disturbance	2.8 ±0.41	1.7±0.95	5.5079		0.200	0.07	0.17	0.0001	Significant
6	Ue of sleep medication	1.86±1.008	1.63±0.93	1.4238		0.164	0.18	0.17	0.1652	Significant
7	Day time dysfunction	2.13±0.78	1.53±0.89	4.0389		0.149	0.14	0.16	0.0004	Significant
	Total Global psqi score	**14.3± 2.15**	**10.63 ± 3.29**	**6.4275**		**0.576**	**0.39**	**0.60**	**0.0001**	**Significant**

Table-11: yoga was effective calculate by comparison 0f sleep components in pre and post-intevention experimental group

TABLE-12: Comparison of the mean value & standard deviation of mental health components (stress and anxiety level) the studied students pre and post intervention in experimental group.

S. No	Mental health components	Phase		T-value	Df	Sed	Sem		P-value	Significant at 0.05 level
		Pretest (n=30) M±sd	Posttest (n=30) M±sd				Pre Test	Posttest		
1	**Stress**	104.23± 19.79	92.07± 17.12	3.2754	29	3.715	3.61	3.13	0.0027	Significant
2	**Anxiety**	34.13±9.52	26.00±6.10	6.2969	29	1.292	1.74	1.11	0.0001	Significant

Table-12: yoga was effective calculate by comparison of mental health components in pre and post-intevention experimental group

SECTION -VII: FINDING RELATED TO ASSOCIATE THE PRETEST QUALITY OF SLEEP SCORE OF EXPERIMENTAL GROUP AND CONTROL GROUP WITH THEIR DEMOGRAPHIC VARIABLES.

TABLE-13: Quality of sleep association with demographic variables in experimental group

CATEGORY	NO	MILD	MODERATE	SEVERE	df	Chi-square	P value	Significant
AGE								
17-18	1	1	1	4	9	4.9804	.836015	Not signicant
19-20	2	1	1	5				
21-22	1	1	3	3				
22 & ABOVE	1	2	2	1				
GENDER								
MALE	1	2	1	4	3	1.2288	.746112	Not significant
FEMALE	4	3	6	9				
RELIGION								
HINDUISM	1	1	2	4	12	1.6538	.99978	Not significant
ISLAM	1	1	2	2				
SIKH	1	1	1	3				
CHRISTIAN	1	1	1	3				
OTHER	1	1	1	1				
EDUCATION								
ILLITERATE	1	1	1	1	9	2.1397	.98906	Not significant
5-8 CLASS	1	1	1	4				
10-12 CLASS	2	1	2	4				
GRADUATE & ABOVE	1	2	3	4				
RESIDING STATUS								
WITH FAMILY	1	2	2	2	9	3.5187	.94016	Not significant
RENTED HOUSE	1	1	2	3				
HOSTEL	1	1	1	6				
PG	2	1	2	2				
COMMUNITY								
URBAN	2	2	5	10	3	3.5759	.311051	Not significant
RURAL	3	3	2	3				
INCOME								
BELOW 10 K	1	1	1	3	9	3.6923	.930473	Not signIficant
11-20K	1	2	1	1				
21-30K	1	1	2	5				
31K & ABOVE	2	1	3	4				

Table -13: shows that no significant relationship of quality of sleep with their demographic vairable in experimental group.

TABLE-14: Quality of sleep association with demographic variables in control group

CATEGORY	N0	MILD	MODERATE	SEVERE	df	Chi-square	p-value	Not-
AGE								
17-18	1	1	1	3	9	5.7817	.761548	Not significant
19-20	3	1	1	8				
21-22	1	2	3	2				
22 & ABOVE	1	1	1	1				
GENDER								
MALE	1	2	1	7	3	2.7273	.435612	Not significant
FEMALE	4	3	5	7				
RELIGION								
HINDUISM	1	1	1	6	12	3.1698	.994222	Not significant
ISLAM	1	1	1	3				
SIKH	1	1	1	2				

CHRISTIAN	1	1	2	2				
OTHER	1	1	1	1				
EDUCATION								
ILLITERATE	1	1	1	2	9	2..5651	.979082	Not significant
5-8 CLASS	1	1	1	6				
10-12 CLASS	2	2	2	4				
GRADUATE & ABOVE	1	1	2	2				
RESIDING STATUS								
WITH FAMILY	1	2	1	4	9	1.9745	.991865	Not significant
RENTED HOUSE	2	1	2	3				
HOSTEL	1	1	1	4				
PG	1	1	2	3				
COMMUNITY								
URBAN	2	1	3	12	3	8.2738	.406709	significant
RURAL	3	4	3	2				
INCOME								
BELOW 10 K	1	1	1	4	12	4.2035	.897514	Not sinificant
11-20K	2	1	2	1				
21-30K	1	1	1	5				
31K & ABOVE	1	2	2	4				

Table -14: shows that no significant relationship of quality of sleep with their demographic vairable in control group except community.

SECTION -VIII: FINDING RELATED TO ASSOCIATION BETWEEN THE PRETEST MENTAL HEALTH SCORE OF EXPERIMENTAL GROUP AND CONTROL GROUP WITH THEIR DEMOGRAPHIC VARIABLES.

TABLE-15: Stress association with demographic variables in experimental group

CATEGORY	mild	moderate	severe	df	Chi-square	p-value	Significance level
AGE							
17-18	2	3	2	6	4.4671	.613729	No significant
19-20	3	3	3				
21-22	1	1	6				
22 & ABOVE	2	2	2				
GENDER							
MALE	2	3	4	2	.1465	.929359	No significant
FEMALE	6	6	9				
RELIGION							
HINDUISM	1	4	3	8	4.1306	.845151	No significant
ISLAM	2	1	3				
SIKH	2	1	3				
CHRISTIAN	2	1	3				
OTHER	1	2	1				
EDUCATION							
ILLITERATE	1	2	1	6	5.3538	.499299	No significant
5-8 CLASS	3	2	2				
10-12 CLASS	3	1	6				
GRADUATE & ABOVE	1	4	4				
RESIDING STATUS							
WITH FAMILY	2	1	4	6	2.385	.881114	No significant
RENTED HOUSE	1	3	3				
HOSTEL	2	3	3				
PG	3	2	3				
COMMUNITY							

URBAN	3	7	7	2	2.8724	.237826	No significant
RURAL	5	2	6				
INCOME							
BELOW 10 K	1	2	4	6	2.7928	.834363	No significant
11-20K	2	2	1				
21-30K	3	3	3				
31K & ABOVE	2	2	5				

Table -15: shows that no significant relationship of stress with their demographic vairable in experimental group.

TABLE-16 Stress association with demographic variables in control group

CATEGORY	Mild	Moderate	Severe	df	Chi-square	p-value	Significance level
AGE							
17-18	2	3	1	6	5.0027	.543466	No significant
19-20	1	5	6				
21-22	2	2	4				
22 & ABOVE	2	1	1				
GENDER							
MALE	1	3	7	2	4.3538	.113395	No significant
FEMALE	6	8	5				
RELIGION							
HINDUISM	2	1	4	8	3.2632	.916773	No significant
ISLAM	1	3	2				
SIKH	2	1	4				
CHRISTIAN	2	1	3				
OTHER	1	1	2				
EDUCATION							
ILLITERATE	2	1	2	6	3.2464	.777347	No significant
5-8 CLASS	1	3	5				
10-12 CLASS	2	5	3				
GRADUATE & ABOVE	2	2	2				
RESIDING STATUS							
WITH FAMILY	2	3	3	6	0.6018	.99637	No significant
RENTED HOUSE	2	3	3				
HOSTEL	1	3	3				
PG	2	2	3				
COMMUNITY							
URBAN	3	6	9	2	2.1185	.346715	No significant
RURAL	4	5	3				
INCOME							
BELOW 10 K	1	2	4	6	2.5729	.860219	No significant
11-20K	1	3	2				
21-30K	3	3	2				
31K & ABOVE	2	3	4				

Table -16: Shows that no significant relationship of stress with their demographic vairable in control group.

TABLE-17 Anxiety association with demographic variables in experimental group

CATEGORY	mild	moderate	severe	df	Chi-square	p-value	Significance level
AGE							
17-18	2	1	4	6	2.003	.919418	No

19-20	2	3	4				significant
21-22	1	3	4				
22 & ABOVE	2	1	3				
GENDER							
MALE	3	1	5	2	1.3861	.50006	No significant
FEMALE	4	6	11				
RELIGION							
HINDUISM	1	2	5	8	2.1094	.977474	No significant
ISLAM	1	2	3				
SIKH	1	1	4				
CHRISTIAN	2	2	2				
OTHER	1	1	2				
EDUCATION							
ILLITERATE	1	1	2	6	0.523	.997548	No significant
5-8 CLASS	2	2	3				
10-12 CLASS	2	2	6				
GRADUATE & ABOVE	2	2	5				
RESIDING STATUS							
WITH FAMILY	3	1	3	6	3.2162	.7812603	No significant
RENTED HOUSE	1	2	4				
HOSTEL	1	2	5				
PG	2	3	3				
COMMUNITY							
URBAN	4	3	10	2	0.766	.681813	No significant
RURAL	3	4	6				
INCOME							
BELOW 10 K	2	1	4	6	2.5374	.864257	No significant
11-20K	2	1	2				
21-30K	2	3	4				
31K & ABOVE	1	2	6				

Table -17: Shows that no significant relationship of anxiety with their demographic vairable in experimental group.

TABLE-18 Anxiety association with demographic variables in control group

CATEGORY	mild	moderate	severe	df	Chi-square	p-value	Significance level
AGE							
17-18	1	2	3	6	2.6687	.849136	No significant
19-20	2	3	7				
21-22	3	2	3				
22 & ABOVE	1	2	1				
GENDER							
MALE	5	3	3	2	3.7013	.157135	No significant
FEMALE	3	5	11				
RELIGION							
HINDUISM	2	2	3	8	3.5707	.893637	No significant
ISLAM	1	3	2				
SIKH	1	2	4				
CHRISTIAN	2	1	3				
OTHER	2	1	1				
EDUCATION							
ILLITERATE	1	2	2	6	1.2619	.973717	No significant
5-8 CLASS	2	3	4				
10-12 CLASS	3	2	5				
GRADUATE & ABOVE	2	1	3				
RESIDING STATUS							

WITH FAMILY	1	4	3	6	7.3278	.291593	No significant
RENTED HOUSE	1	2	5				
HOSTEL	2	1	4				
PG	4	1	2				
COMMUNITY							
URBAN	6	5	7	2	1.3542	.508097	No significant
RURAL	2	3	7				
INCOME							
BELOW 10 K	1	3	3	6	3.6926	.718193	No significant
11-20K	1	1	4				
21-30K	3	1	4				
31K & ABOVE	3	3	3				

Table -18: Shows that no significant relationship of anxiety with their demographic vairable in control group.

Limitation

The scope of this study is limited in terms of assessment tools as self reported questionnaires were used for data collection. However, duration of intervention could have been for longer than four week with readings taken at multiple timelines and follow up report of the study.

Discussion

Stress and anxiety are frequently the causes or aggravators of diseases. (**Science Reporter, 2000).** The current study's findings revealed that out of 30 subjects in the experimental group, 16.7% had no sleep difficulty, 16.7% had mild sleep difficulty, 23.3% had moderate sleep difficulty, and 43.3% had severe sleep difficulty; 8% had mild stress, 30% had moderate stress, and 43.3% had severe stress; and 23.3% had low anxiety. 23.3% experience moderate anxiety. In the pretest experimental group, 53.4% reported severe, potentially problematic levels of anxiety.The current study found that 26.7% of students had no sleep problem, 20% had mild sleep quality, 53.3% had moderate sleep difficulty, and 0% had severe sleep difficulty, 56.7% had light stress, 43.3% had considerable stress, and 0% had severe stress, 43.3% students having low anxiety, 56.7% has moderate anxiety and 0% has potentially concerning levels of anxiety in post-test experimental group.

This finding of the present study was supported by the outcomes of previous studies which demonstrated yoga intervention significantly reduced work stress, anxiety, muscle fatigue and emotional exhaustion, and enhanced the quality of sleep, self-care, coping skills, and sense of well-being of nursing professionals[17,18,19]. However, the possible mechanism of reduction of stress and improvement in the quality of sleep after yoga intervention is not yet understood clearly. A previous study had shown that yoga reduced the sympathetic nerves activities, increases parasympathetic activities and balances autonomic nervous system reactivity[20]. Another study showed that yoga increased the secretion of a neurotransmitter called gamma-amino butyric acid (GABA) [21]. Thus, increase in parasympathetic nerve activities, reduction of sympathetic nerve activities, and secretion of the inhibitory neurotransmitters such as GABA after yoga practice could be the possible mechanism for reduction of the perceived stress and improvement of the sleep quality. Increase in positive affect and self-compassion as well as inhibition of the posterior hypothalamus and salivary cortisol after yoga practice can also play an important role in reduction of stress[22].

The finding of the present study advocated yoga module is effective in reducing stress and improving sleep quality of nursing students; however, further study is required to conform to the present finding. Based on the present finding, Yoga had a positive impact on nursing students' sleep quality, stress levels, and anxiety levels, providing evidence that yoga can help lower stress in the classroom. Based on a t test with a significance level of $p<.05$, the mean scores of stress (92.7), anxiety (26.00) and sleep quality (10.23) among nursing students after yoga were significantly lower than the mean scores of sleep quality (14.3), stress (104.3), and anxiety (34.13) before yoga. Furthermore, the students reported feeling peaceful, relaxed, and calm after practicing yoga. Similarly conducted a study on the post graduate students by considering the variable of age, gender, type of family. The mean stress scores post intervention were significantly lower than the stress scores pre-intervention of post graduate students, as findings similar to present study[23]. The practices of Yoga helps in building up the coping abilities and prevent the person from becoming a victim of distress as stated by which report that a minimum of 15 sessions of these techniques for 20 to 30 minutes each is extremely effective in reduction of stress as reported by the present study[24,25].

Moreover, yoga can be incorporated into regular schedules by other organisations to improve the psychological well-being of students and reduce the cost of medical care.The limited sample size, lack of a control group, and use of self-report methods to gauge stress and sleep quality are the study's weaknesses. Future studies can solve these limitations by utilising a strong study methodology and a sizable sample size. It is possible to carry out three-arm randomised control studies with groups engaging in physical activity and yoga, as well as a group receiving no intervention.Further research assessing the impact of yoga on the general health of nursing workers and the

care they provide for patients may also be able to measure the true benefits of yoga.

Conclusion

Based on the current study's findings, it is possible to conclude that Yoga administration was significantly helpful in improving sleep quality and lowering stress and anxiety levels in nursing students. . As a result, yoga can be a cost-effective strategy for managing stress and improving the quality of sleep of nursing professionals, leading to an improvement in the overall health of nursing students. Based on the findings of the current pilot project, larger sample sizes and more robust research designs can be used to conduct future studies. It is suggested that the study be replicated on a large sample of students from various colleges in order to make broader generalisations, and that yoga be incorporated into nursing students' daily routines to improve sleep quality, reduce stress, and anxiety during academic and clinical experiences.

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Conflicts of interest

There are no conflicts of interest.

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References

1. Cebulko, N. Description of sleep quality and behaviors in baccalaureate nursing students: Literature review and methods. 2010;The Ohio State University. Retrieved from;http://hdl.handle.net/1811/45583
2. Ahrberg, K., Dresler, M., Niedermaier, S., Steiger, A., &Genzel, L. The interaction between sleep quality and academic performance.JPsychiatr Res. 2012; 46(12):1618-22. doi:10.1016/j.jpsychires.2012.09.008.
3. Baehr, T. The relationship between sleep and GPAs in college students.(Unpublished master's thesis). 2015; Concordia University Retrieved from: http: www. wp.cune.org/tanelbaehr/files/.../Research-Proposal-Sleep-and-GPA.docx
4. Williamson, K. Students finding less time for sleep as extracurricular activities add up. 2015. Retrieved from http://www.gainesvilletimes.com/archives/107248/
5. Chiang, Y. C. The effect of sleep on performance of undergraduate students working in the hospitality industry as compared to those who are not working in the industryGraduate Theses and Dissertations. Paper 2013; 13060. Retrieved from ;http://lib.dr.iastate.edu/etd/13060
6. HarlinaHalizahSiraj, Abdus Salam, RaihanahRoslan, NurulAsyiqinHasan, Tan, H. J, & Muhammad Nazim Othman. Sleep pattern and academic performance of undergraduate medical students at UniversitiKebangsaanMalaysia.Journal of Applied Pharmaceutical Science, 2014; 4(12), 52-55. Retrieved from;http://www.japsonline.com DOI: 10.7324/JAPS.2014.4120
7. Pulido-Martos M, Augusto-Landa JM, Lopez-Zafra E, Article R. Sources of stress in nursing students : A systematic review of quantitative studies. *Int Nurs Rev.* 2012;59(1):15–25. [Google Scholar]
8. Jimenez C, Navia-Osorio PM, Diaz CV. Stress and health in novice and experienced nursing students. *J Adv Nurs.* 2010;66(2):442–55. [PubMed] [Google Scholar]
9. Bartlett ML, Taylor H, Nelson JD. Comparison of mental health characteristics and stress between baccalaureate nursing students and non-nursing students. *J Nurs Educ.* 2016;55(2):87–90. [PubMed] [Google Scholar]
10. Hamaideh SH, Hamdan-Mansour AM. Psychological, cognitive, and personal variables that predict college academic achievement among health sciences students. *Nurse Educ Today.* 2014;34(5):703–08. [PubMed] [Google Scholar]
11. Hosseini M, Ashktorab T, Taghdisi MH, Vardanjani AE, Rafiei H. Health-promoting behaviours and their association with certain demographic characteristics of nursing students of Tehran City in 2013. *Glob J Health Sci.* 2015;7(2):264–72. [PMC free article] [PubMed] [Google Scholar]
12. Upasana Mani(2021): 10 Amazing Sudarshan Kriya Benefits That You All Should Know: 10Amazing Sudarshan Kriya Benefits That You All Should Know(bebodywise.com)
13. Alisha Gomez, (2022): 12 Yoga Poses for Beginners that will Give you Countless Benefits:https://www.trendymami.com/yoga-poses-beginners/?
14. Sudarshan Kriya Yoga - Steps, Types & Benefits (bajajfinservmarkets.in)
15. Kumar kamakhya,Bhanu J. A study on the impact on stress and anxiety throughYoga Nidra. Indian Journal of Traditional Knowledge 2003; 7(3):54-58.
16. Gupta RK. Effectiveness of Yoga Nidra on stress level among student nurses. Nightingale Nursing Times 2007 April; 27:65-66.
17. Fang R, Li X. A regular yoga intervention for staff nurse sleeps quality and work stress: A randomised controlled trial. *J Clin Nurs.* 2015;24:3374–9. [PubMed] [Google Scholar]
18. Anderson R, Mammen K, Paul P, Pletch A, Pulia K. Using yoga Nidra to improve stress in psychiatric nurses in a pilot study. *J Altern Complement Med.* 2017;23:494–5.
19. Beddoe AE, Murphy SO. Does mindfulness decrease stress and foster empathy among nursing students? *J Nurs Educ.* 2004; 43: 305–12.
20. Vempati RP, Telles S. Yoga-based guided relaxation reduces sympathetic activity judged

from baseline levels. *Psychol Rep*. 2002; 90: 487–94.

21. Streeter CC, Jensen JE, Perlmutter RM, Cabral HJ, Tian H, Terhune DB, et al. Yoga asana sessions increase brain GABA levels: A pilot study. *J Altern Complement Med*. 2007; 13: 419–26.
22. Riley KE, Park CL. How does yoga reduce stress? A systematic review of mechanisms of change and guide to future inquiry. *Health Psychol Rev*. 2015; 9: 379–96.