

## Chapter 6

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# Results

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## 6.0. RESULTS

The results of the three studies conducted which are part Ph.D. project are described below.

- The changes in the autonomic variables before, during, and immediately following *Trāṭaka* and control sessions.
- Performance in the Simple Visual Reaction Time task before and immediately after the *Trāṭaka* and control session
- The changes in the visual strain & Psychological Well-being at pre and post-two weeks of intervention of *Trāṭaka* group and control group.
- Performance in the Corsi block tapping task at baseline and following *Trāṭaka* or control sessions

### 6.1. STUDY 1: AUTONOMIC VARIABLES & VISUAL REACTION TIME:

#### 6.1.1. RECAPITULATION:

The following data were extracted from the 16-channel polygraph. A careful manual editing was performed using Kubios HRV analysis 2.0 software (Biosignal Analysis and Medical Imaging Group, University of Eastern Finland, Finland) by visual inspection to mark the peaks. This was to remove artifacts and insert missing peaks or delete false peaks and artifacts. Analysis of the detected R.R. waveform was carried out in three domains—time domain, frequency domain, and non-linear analysis. The following components of time-domain HRV were analyzed: (i) Meanrr (Mean of R.R. interval), (ii) SDNN (the standard deviation of N.N. intervals), (iii) the square root of the mean of the sum of the squares of differences between adjacent N.N. intervals (RMSSD), (iv) the proportion derived by dividing NN50 by the total number of N.N. intervals (pNN50)

The frequency domain of HRV analysis was carried out. The energy in the HRV series in the following specific frequency bands was studied viz., Low frequency (L.F.) band (0.04–0.15 Hz) and

high frequency (H.F.) band (0.15–0.5 Hz). According to guidelines, L.F. and H.F. band values were expressed as normalized units. The LF/HF ratio was also calculated.

The non-linear domain of HRV was performed: Poincaré plots were used to measure the standard deviation (S.D.) of short-term (SD1) and long-term (SD2) HRV, which measure the unpredictability of the R.R. time series

The heart rate in beats per minute was continuously calculated by counting the R waves of the QRS complex in the EKG in 60 s epochs.

The respiratory rate in cycles per minute was continuously calculated by counting the breath cycles in 60 s epochs.

Skin Conductance was recorded using Ag/AgCl electrodes with electrode gel placed in contact with the volar surfaces of the distal phalanges of the index and middle fingers of the left hand. A low-level D.C. preamplifier was used, and a constant current of 10  $\mu$ A was passed between the electrodes.

Simple Visual Reaction time: It was expressed in milliseconds. After completing the Visual reaction time task, the mean reaction time in ms was recorded for each subject.

The group means values – S.D. for breath rate, heart rate, and skin conductance are given in Table 10. The frequency domain, time-domain measures, and Non-linear domain of HRV are given in Table 11, Table 12, and Table 13, respectively.

*Repeated measure ANOVA:* The significant interaction in breath rate, heart rate, skin conductance, L.F. power, H.F. power, total Power, the mean R.R., the RMSSD, the pNN50, and the SD1 & SD2 are given in Table 09

*Post hoc analyses with Holm's Correction:* *Post hoc* analyses with *Holm's correction* were performed and all comparisons were made with respective pre-states. These have been summarized in Table 09.

Results for Simple visual reaction time: In repeated measures ANOVA, there was significant interaction in time [F (1,29) = 17.71; p<0.001] time\*sessions [F (1,29) = 6.87; p=0.014]. Post-hoc

analyses demonstrated reduced mean VRT with the practice of *Trāṭaka*  
( $311.46 \pm 44.90$  to  $279.43 \pm 30.43$ ;  $t = 4.89$ ;  $p < 0.001$ )

**Table 09: Summary of the Repeated Measures Analysis of Variance (RM-ANOVA) Showing Statically Significant Results**

Variables	Factor	F value	Df	Partial $\eta^2$	Level of significance
HR (bpm)	Time	6.593	5, 145	0.185	<0.001
RR (cpm)	Time	6.480	5, 145	0.183	<0.001
SC 1A	Time	10.052	5, 145	0.055	<0.001
Mean RR	Time	7.431	5, 145	0.204	<0.001
SDNN	Time	31.182	5, 145	0.518	<0.001
pNN50	Time	8.389	5, 145	0.224	<0.001
RMSSD	Time	12.221	5, 145	0.296	<0.001
LF Power	Time	9.450	5, 145	0.246	<0.001
HF Power	Time	9.458	5, 145	0.246	<0.001
Total Power	Time	16.011	5, 145	0.356	<0.001
SD1	Time	16.647	5, 145	0.365	<0.001
SD2	Time	29.363	5, 145	0.503	<0.001

R.R.: respiratory rate; H.R.: heart rate; SC: skin conductance; cpm: cycles per minute; bpm: beats per minute; Mean RR: the average of time intervals between consecutive R-waves; SDNN: the standard deviation of N.N. intervals; pNN50: NN50 count divided by the total number of all N.N. intervals; RMSSD: the square root of the mean of the sum of the squares of differences between adjacent N.N. intervals; L.F.: low-frequency band of the HRV; H.F.: high-frequency band of the HRV; Standard deviation (S.D.) of short term (SD1) and long term (SD2) HRV.

**Table 10: Changes in Autonomic and Respiratory Variables Recorded Pre, During, and Post *Trāṭaka* and control Sessions. Values Are Group****Mean  $\pm$  SD**

VARIABLES	SESSION	PRE	D1	D2	D3	D4	POST	Direction of change
Heart Rate (bpm)	<i>Trāṭaka</i>	81.83 $\pm$ 11.97	82.36 $\pm$ 12.24	81.17 $\pm$ 12.75	80.62 $\pm$ 12.66	80.70 $\pm$ 12.51	80.44 $\pm$ 12.32	—
	Eye Exercise	79.01 $\pm$ 9.42	78.77 $\pm$ 8.89	78.61 $\pm$ 8.79	78.16 $\pm$ 9.26	76.50 $\pm$ 8.55**	77.46 $\pm$ 8.91	—
Respiratory Rate (cpm)	<i>Trāṭaka</i>	17.05 $\pm$ 2.50	17.92 $\pm$ 2.63	17.22 $\pm$ 2.52	17.20 $\pm$ 2.69	16.72 $\pm$ 2.86	15.72 $\pm$ 2.92***	↓
	Eye Exercise	16.63 $\pm$ 3.63	17.72 $\pm$ 3.01	18.51 $\pm$ 4.12**	18.63 $\pm$ 5.40**	18.14 $\pm$ 4.24*	17.04 $\pm$ 3.06	↑
SC (IA)	<i>Trāṭaka</i>	0.35 $\pm$ 2.67	0.26 $\pm$ 3.38	0.26 $\pm$ 3.44	0.37 $\pm$ 3.67*	0.03 $\pm$ 3.73*	0.27 $\pm$ 3.88*	—
	Eye Exercise	0.09 $\pm$ 1.97	0.38 $\pm$ 2.54	0.27 $\pm$ 2.7	0.28 $\pm$ 2.8	0.16 $\pm$ 2.8	0.74 $\pm$ 3.18***	↑

\* $p < 0.05$ . \*\* $p < 0.01$ . \*\*\* $p < 0.001$ , Repeated measures ANOVA with Holm's correction comparing During and Post values with Pre values.

R.R.: respiratory rate; H.R.: heart rate; SC: skin conductance; cpm: cycles per minute; bpm: beats per minute

**Table 11: Time Domain Analysis of the Heart Rate Variability Components at pre, during, and post *Trāṭaka* and control sessions.**Values Are Group Mean  $\pm$  SD

VARIABLES	SESSION	PRE	D1	D2	D3	D4	POST	Direction of change
Mean RR interval	<i>Trāṭaka</i>	749.85 $\pm$ 98.16	745.30 $\pm$ 98.76	745.12 $\pm$ 101.21	762.28 $\pm$ 98.43	761.74 $\pm$ 97.15	763.82 $\pm$ 90.08	—
	Eye Exercise	773.43 $\pm$ 94.52	774.83 $\pm$ 91.06	776.44 $\pm$ 90.50	782.58 $\pm$ 95.82	798.78 $\pm$ 93.81**	790.45 $\pm$ 97.05	↑
SDNN	<i>Trāṭaka</i>	46.22 $\pm$ 17.12	45.64 $\pm$ 17.02	46.80 $\pm$ 15.68	51.19 $\pm$ 16.58	55.85 $\pm$ 16.38***	61.29 $\pm$ 19.01***	↑
	Eye Exercise	50.36 $\pm$ 17.94	50.19 $\pm$ 19.16	52.21 $\pm$ 20.15	55.89 $\pm$ 21.99	59.23 $\pm$ 19.67**	63.79 $\pm$ 21.24***	↑
pNN50	<i>Trāṭaka</i>	19.28 $\pm$ 15.78	19.32 $\pm$ 16.43	21.12 $\pm$ 16.64	22.35 $\pm$ 16.05	24.10 $\pm$ 17.14	25.51 $\pm$ 16.87*	↑
	Eye Exercise	25.20 $\pm$ 21.63	25.34 $\pm$ 21.24	25.40 $\pm$ 20.30	26.23 $\pm$ 19.93	30.58 $\pm$ 19.13	29.33 $\pm$ 19.26	—
RMSSD	<i>Trāṭaka</i>	39.95 $\pm$ 18.89	39.56 $\pm$ 19.23	39.95 $\pm$ 18.30	42.31 $\pm$ 20.65	45.06 $\pm$ 21.22	48.72 $\pm$ 25.73**	↑
	Eye Exercise	46.11 $\pm$ 23.24	45.46 $\pm$ 22.56	48.53 $\pm$ 27.16	50.06 $\pm$ 28.55	53.49 $\pm$ 23.80*	56.30 $\pm$ 27.28***	↑

\*p < 0.05. \*\*p < 0.01. \*\*\*p < 0.001, Repeated measures ANOVA with Holm's correction comparing During and Post values with Pre values. Mean RR: the average

of time intervals between consecutive R-waves; SDNN: the standard deviation of N.N. intervals; pNN50: NN50 count divided by the total number of all N.N.

intervals; RMSSD: the square root of the mean of the sum of the squares of differences between adjacent N.N. intervals.

**Table 12: Changes in Frequency Domain Analysis of the Heart Rate Variability Components at pre, during and post *Trāṭaka* & control sessions: Values Are Group Mean  $\pm$  S.D.**

VARIABLES	SESSION	PRE	D1	D2	D3	D4	POST	Direction of change
<b>LF Power</b>	<i>Trāṭaka</i>	732.41 $\pm$ 963.42	698.69 $\pm$ 725.13	623.92 $\pm$ 482.35	743.64 $\pm$ 481.32	830.42 $\pm$ 663.56	1170.76 $\pm$ 887.80	—
	Eye Exercise	654.54 $\pm$ 447.23	684.41 $\pm$ 616.80	889.97 $\pm$ 915.62	928.75 $\pm$ 952.70	1114.06 $\pm$ 888.76	1429.53 $\pm$ 1241.71***	↑
<b>HF Power</b>	<i>Trāṭaka</i>	898.21 $\pm$ 964.99	794.11 $\pm$ 748.24	848.27 $\pm$ 869.88	968.53 $\pm$ 1199.00	994.53 $\pm$ 910.48	1382.04 $\pm$ 1476.87*	↑
	Eye Exercise	1173.61 $\pm$ 1248.62	1111.69 $\pm$ 1246.55	1177.47 $\pm$ 1321.70	1339.00 $\pm$ 1462.65	1518.84 $\pm$ 1336.49	1842.76 $\pm$ 1617.42***	↑
<b>Total Power</b>	<i>Trāṭaka</i>	2234.58 $\pm$ 1948.04	2092.46 $\pm$ 1622.50	2121.79 $\pm$ 1413.29	2490.89 $\pm$ 1739.39	2856.00 $\pm$ 1639.84	3675.21 $\pm$ 2148.13***	↑
	Eye Exercise	2594.28 $\pm$ 1765.25	2547.68 $\pm$ 1973.36	2704.55 $\pm$ 2025.72	3197.82 $\pm$ 2557.83	3476.65 $\pm$ 2265.16	4489.11 $\pm$ 3441.73***	↑
<b>LFnu</b>	<i>Trāṭaka</i>	43.66 $\pm$ 20.25	47.04 $\pm$ 16.04	46.43 $\pm$ 16.26	49.65 $\pm$ 16.93	48.09 $\pm$ 16.59	51.50 $\pm$ 16.89	—
	Eye Exercise	41.48 $\pm$ 16.19	42.47 $\pm$ 16.52	44.96 $\pm$ 18.97	43.44 $\pm$ 16.72	44.86 $\pm$ 20.04	46.02 $\pm$ 18.09	—
<b>HFnu</b>	<i>Trāṭaka</i>	56.26 $\pm$ 20.22	52.75 $\pm$ 16.02	53.33 $\pm$ 16.25	50.24 $\pm$ 16.93	51.81 $\pm$ 16.54	48.45 $\pm$ 16.89	—
	Eye Exercise	58.43 $\pm$ 16.16	57.42 $\pm$ 16.52	54.84 $\pm$ 18.99	56.43 $\pm$ 16.69	55.05 $\pm$ 20.04	53.87 $\pm$ 18.05	—
<b>LF:HF Ratio</b>	<i>Trāṭaka</i>	1.16 $\pm$ 1.28	1.13 $\pm$ 0.92	1.07 $\pm$ 0.70	1.34 $\pm$ 1.23	1.20 $\pm$ 1.00	1.34 $\pm$ 0.87	—
	Eye Exercise	0.85 $\pm$ 0.56	0.93 $\pm$ 0.78	1.15 $\pm$ 1.13	0.97 $\pm$ 0.78	1.15 $\pm$ 1.03	1.10 $\pm$ 0.85	—

\* $p < 0.05$ . \*\* $p < 0.01$ . \*\*\* $p < 0.001$ . Repeated measures ANOVA with Holm's correction comparing During and Post values with Pre values. L.F.: low

frequency band of the HRV; H.F.: high frequency band of the HRV; LF/HF: ratio of low frequency to high frequency; nu: normalized units

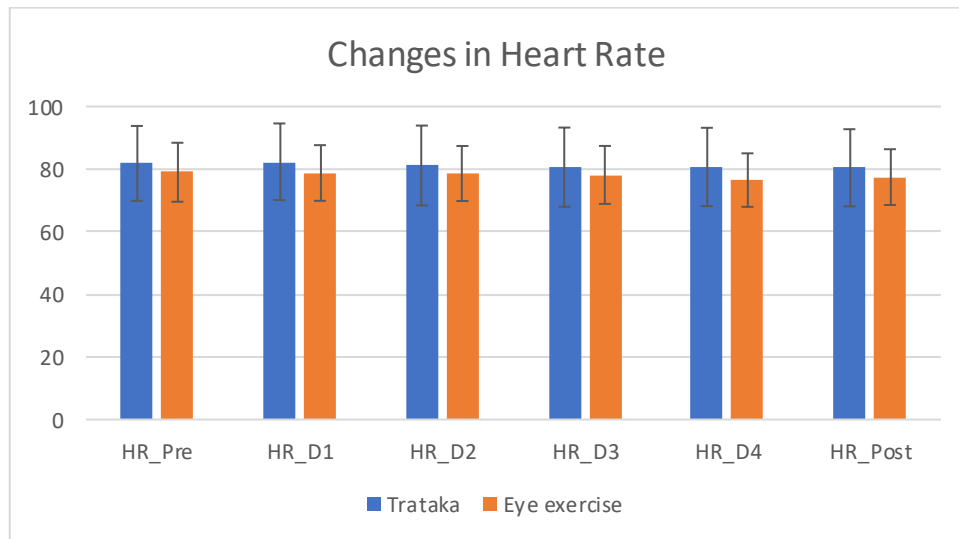
**Table 13: Non-linear Domain Analysis of the Heart Rate Variability Components at pre, during, and post *Trāṭaka* & control sessions; Values Are Group Mean  $\pm$  SD**

VARIABLES	SESSION	PRE	D1	D2	D3	D4	POST	Direction of change
<b>SD1</b>	<i>Trāṭaka</i>	28.14 $\pm$ 13.32	28.13 $\pm$ 13.69	28.64 $\pm$ 13.21	30.15 $\pm$ 14.74	32.17 $\pm$ 15.20	35.12 $\pm$ 18.53***	↑
	<b>Eye Exercise</b>	32.77 $\pm$ 16.59	32.18 $\pm$ 15.98	32.62 $\pm$ 15.75	34.08 $\pm$ 16.84	38.14 $\pm$ 17.23*	38.69 $\pm$ 17.43**	↑
<b>SD2</b>	<i>Trāṭaka</i>	59.09 $\pm$ 21.81	58.03 $\pm$ 21.23	60.40 $\pm$ 19.53	65.26 $\pm$ 19.71	71.24 $\pm$ 19.70***	80.05 $\pm$ 23.41***	↑
	<b>Eye Exercise</b>	64.19 $\pm$ 23.85	63.59 $\pm$ 23.78	64.27 $\pm$ 22.18	71.33 $\pm$ 29.05	76.54 $\pm$ 27.74***	81.93 $\pm$ 27.90***	↑

\*p < 0.05. \*\*p < 0.01. \*\*\*p < 0.001. Repeated measures ANOVA with Holm's Correction comparing During and Post values with Pre values. Standard deviation (S.D.) of short term (SD1) and long term (SD2) HRV.

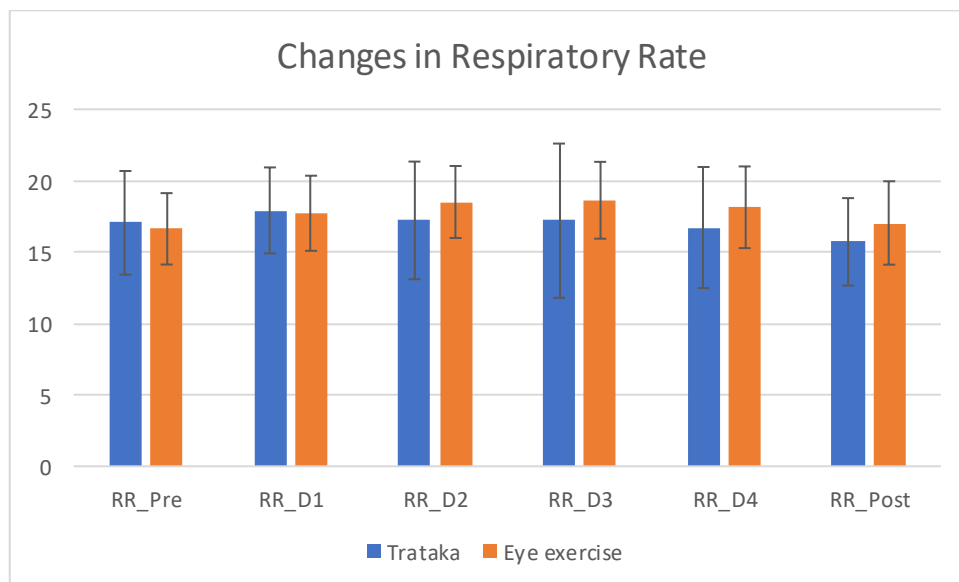
**Figure 6: Heart Rate recorded before, during, and following the *Trāṭaka* and Eye Exercise Sessions**

Values are group Mean  $\pm$  SD



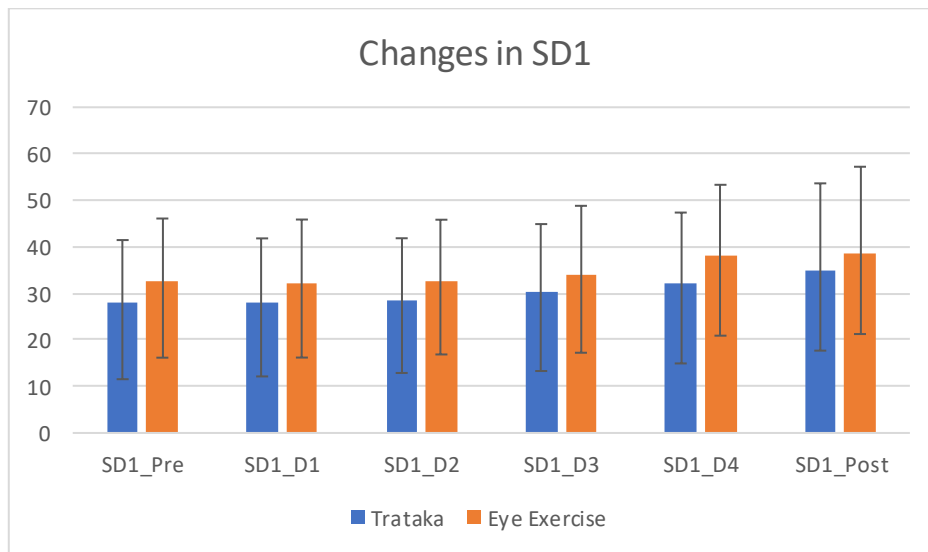
**Figure 7: Respiratory Rate recorded before, during and following the *Trāṭaka* and Eye Exercise Sessions**

Values are group Mean  $\pm$  SD



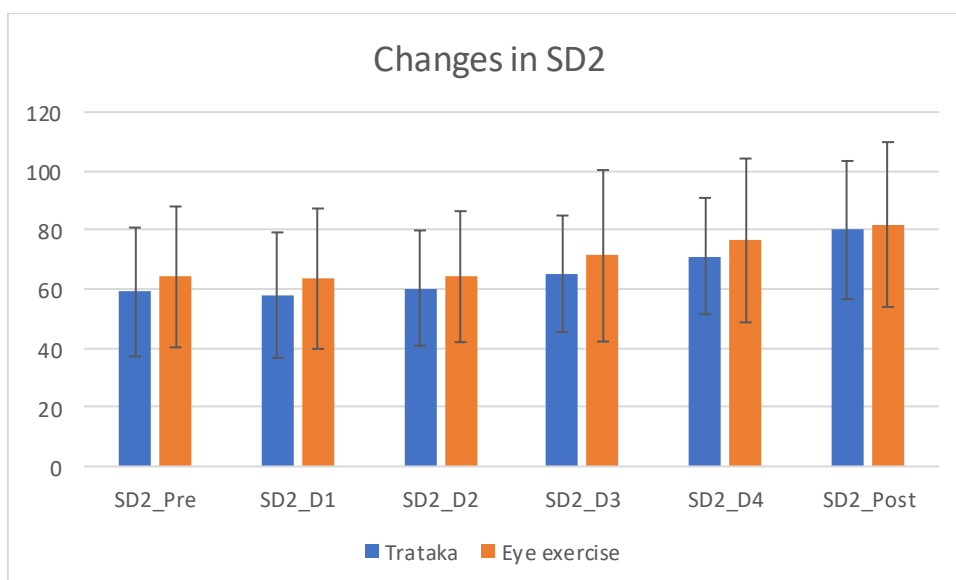
**Figure 8: SD1 recorded before, during and following the *Trāṭaka* and Eye Exercise Sessions**

**Values are group Mean  $\pm$  SD**

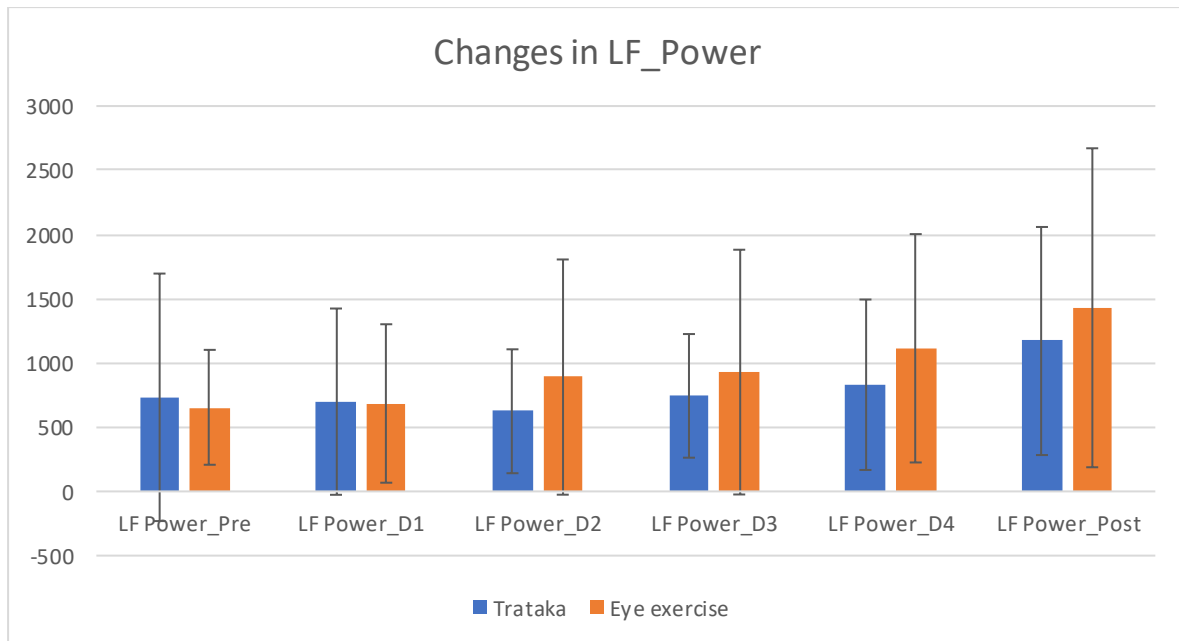


**Figure 9: SD2 recorded before, during, and following the *Trāṭaka* and Eye Exercise Sessions**

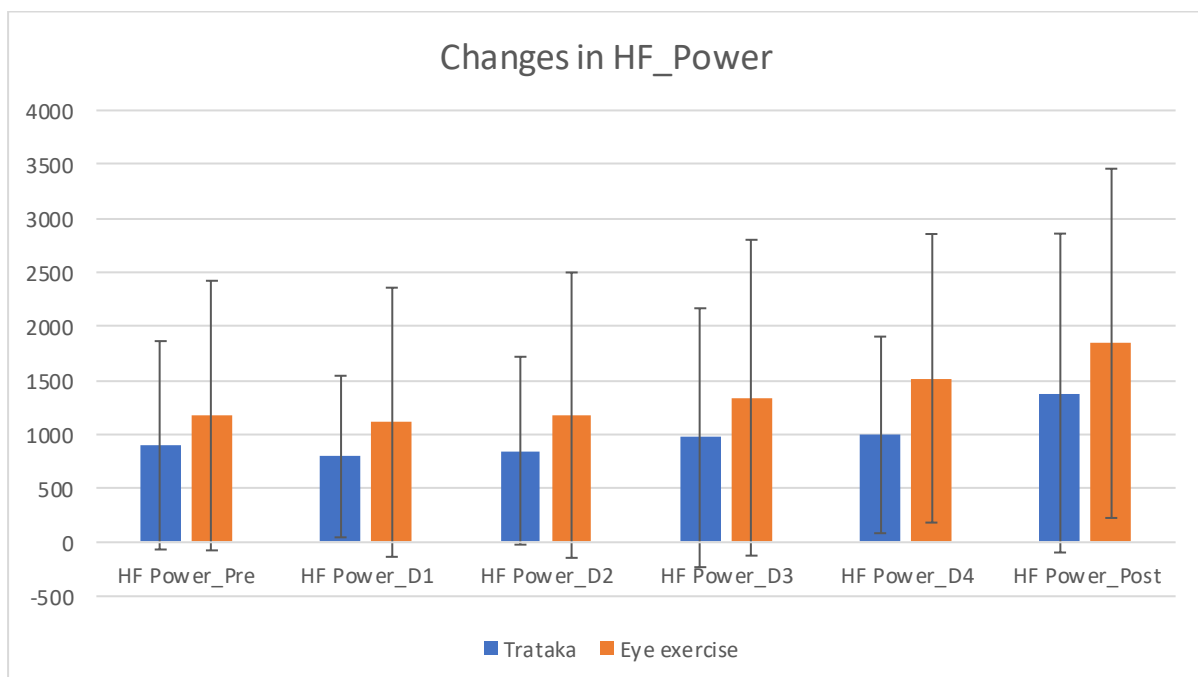
**Values are group Mean  $\pm$  SD**



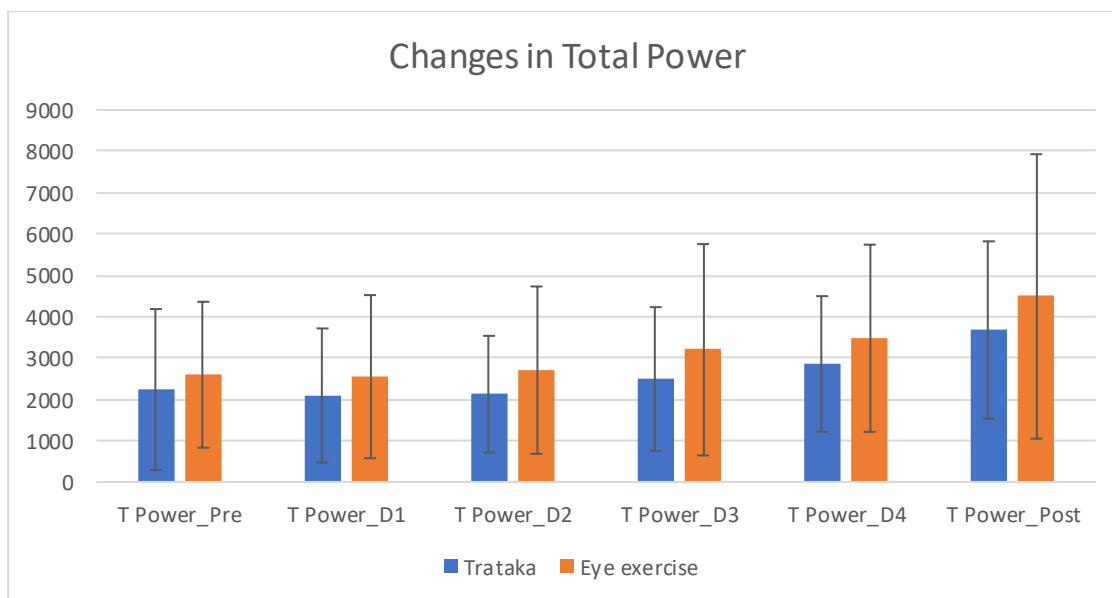
**Figure 10: LF Power recorded before, during, and following the *Trāṭaka* and Eye Exercise**  
**Session Values are group Mean  $\pm$  SD**



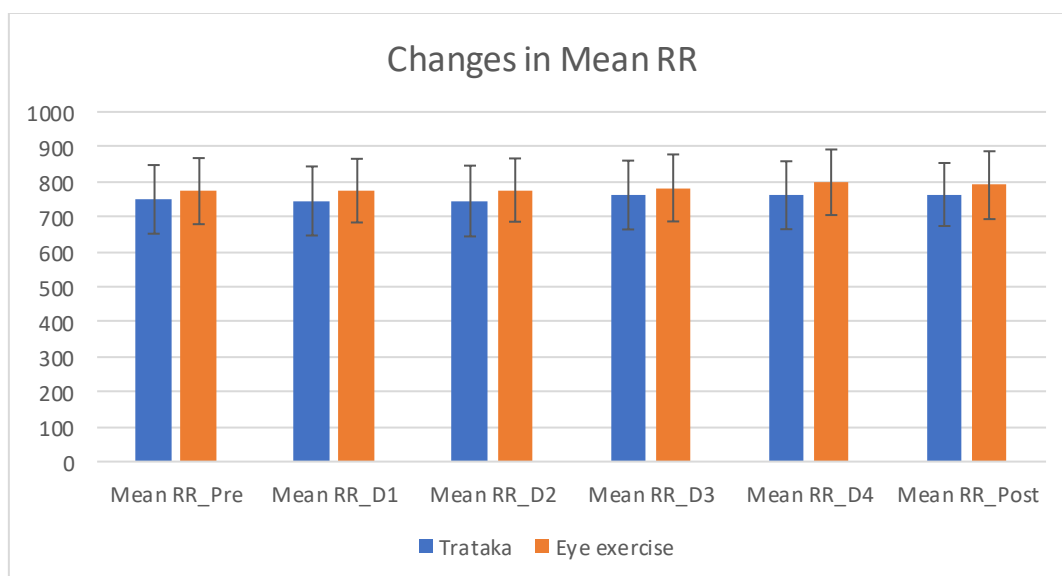
**Figure 11: HF\_Power recorded before, during, and following the *Trāṭaka* and Eye Exercise**  
**Sessions; Values are group Mean  $\pm$  SD**



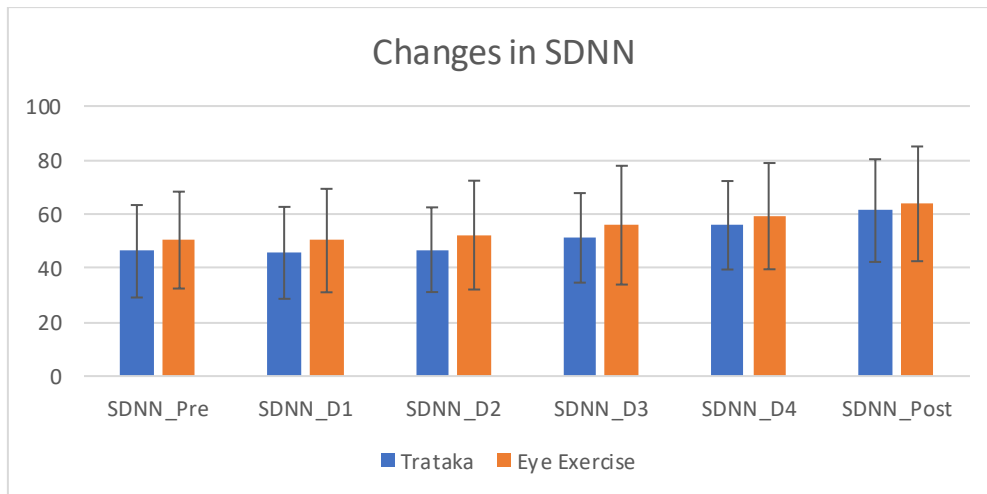
**Figure 12: Total Power recorded before, during, and following the *Trāṭaka* and Eye Exercise Sessions; Values are group Mean  $\pm$  SD**



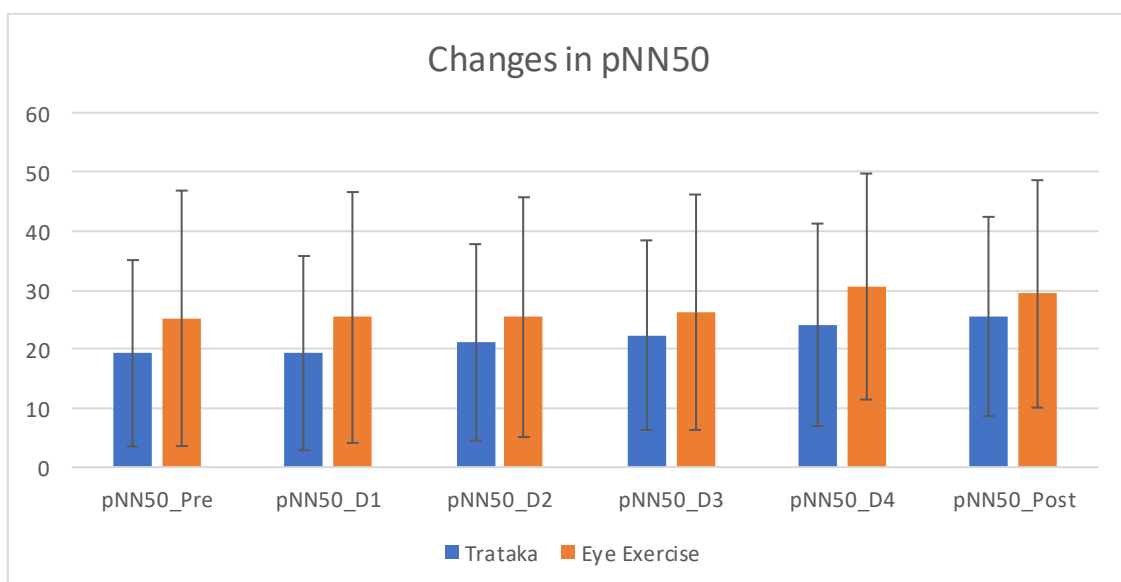
**Figure 13: Mean RR recorded before, during, and following the *Trāṭaka* and Eye Exercise Sessions; Values are group Mean  $\pm$  SD**



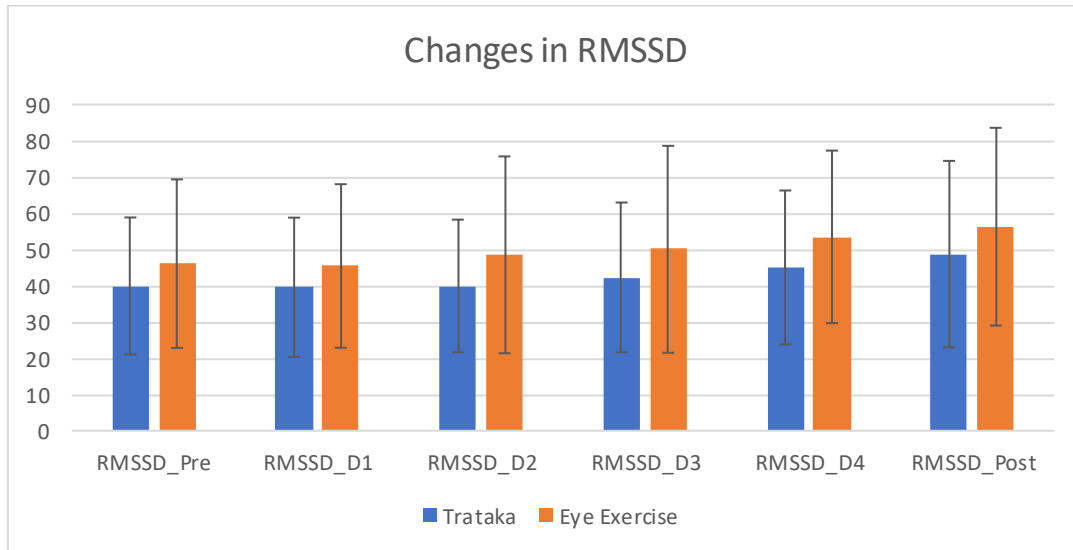
**Figure 14: SDNN recorded before, during, and following the *Trāṭaka* and Eye Exercise Sessions; Values are group Mean  $\pm$  SD**



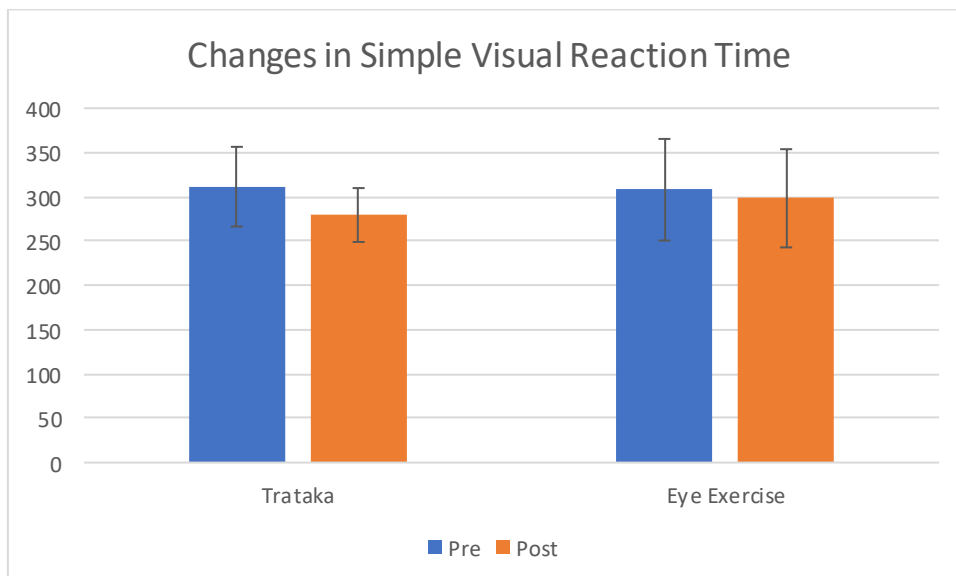
**Figure 15: pNN50 recorded before, during, and following the *Trāṭaka* and Eye Exercise Sessions; Values are group Mean  $\pm$  SD**



**Figure 16: RMSSD recorded before, during, and following the *Trāṭaka* and Eye Exercise Sessions; Values are group Mean  $\pm$  SD**



**Figure 17: SVRT recorded before and following the *Trāṭaka* and Eye Exercise Sessions; Values are group Mean  $\pm$  SD**



## 6.2. STUDY 2: VISUAL STRAIN & PSYCHOLOGICAL WELL-BEING

### 6.2.1. RECAPITULATION:

Hundred and ten participants with a mean (SD) age of 21.75 (2.48) years took part in the study with an allocation ratio of 1:1. Two participants each was lost to follow-up from experimental and control groups. Finally, the data for 106 participants were analyzed.

**Between Group changes:** The two groups did not significantly differ for all the variables at the baseline. There was a significant difference noted in the post values of MWQ scores ( $p=0.01$ ), VFS scores ( $p=0.002$ ), VSC scores ( $p=0.002$ ) and SMAAS scores ( $p=0.01$ ).

**Within Group changes:** There was a reduction noted in MWQ, VFS, and VSC scores ( $p<0.001$ ) in the experimental group, along with an increase in SMAAS scores ( $p<0.001$ ). Significant reduction in the MWQ scores ( $p<0.001$ ) and VSC scores ( $p<0.05$ ), along with an increase in SMAAS scores ( $p<0.05$ ) were noted even in the control group. However, the magnitude of change was lower in the control group. The changes within and between-group are summarized in table 14.

**Correlations between the variables:** Significant positive correlations were found between MWQ in VFS (Spearman's  $\rho = 0.546$ ;  $p<0.001$ ) and VSC (Spearman's  $\rho = 0.508$ ;  $p<0.001$ ). SMAAS scores were negatively correlated to MWQ scores (Spearman's  $\rho = -0.675$ ;  $p<0.001$ ) as well as VFS (Spearman's  $\rho = -0.516$ ;  $p<0.001$ ) and VSC scores (Spearman's  $\rho = -0.456$ ;  $p<0.001$ ). There was a strong positive correlation found between VSC and VFS scores (Spearman's  $\rho = 0.830$ ;  $p<0.001$ ). The correlation statistics are depicted in table 15.

**Table 14: Summary Table of results Visual Strain & Psychological Well-Being**

Dependent Variables	Experimental (n=53)		Control (n=53)		Between-group p-values		Effect Size
	Pre	Post	Pre	Post	Pre	Post	Between groups post values
<b>MWQ</b>	2.89 (1.02)	1.93 (0.78)***	2.69 (0.99)	2.39 (0.96)***	0.312	0.010	0.29
<b>VFS</b>	2.73 (1.72)	1.58 (1.16)***	2.56 (1.65)	2.45 (1.62)	0.535	0.002	0.35
<b>VSC</b>	2.15 (0.74)	1.62 (0.64)***	2.19 (0.79)	2.08 (0.92)*	0.842	0.002	0.35
<b>SMAAS</b>	4.68 (0.78)	5.32 (0.66)***	4.70 (0.79)	4.99 (0.72)*	0.982	0.010	0.29

**Note:** Within-group changes compared using Wilcoxon paired rank test; between group changes compared using Mann Whitney U test;

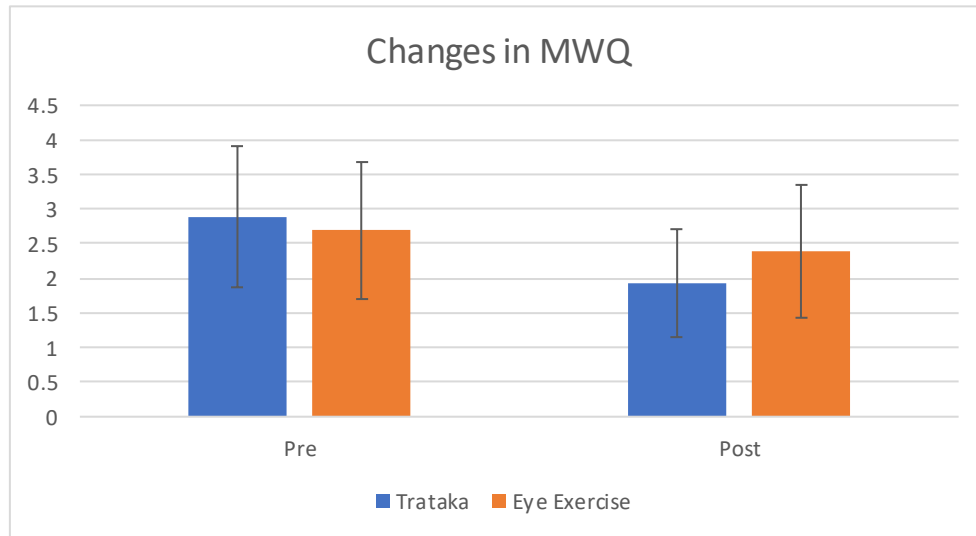
Effect size reported for between group changes for the post values. \* =  $p < 0.05$ , \*\* =  $p < 0.01$ , \*\*\* =  $p < 0.001$ .

**Table 15: Pairwise correlation between the dependent variables**

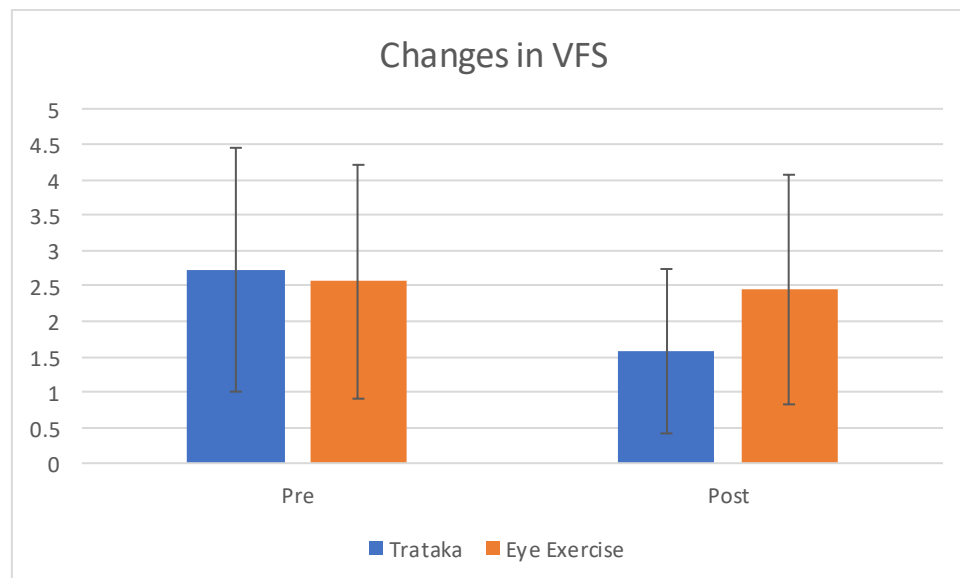
<b>Variable</b>	<b>MWQ</b>	<b>VFS</b>	<b>VSC</b>	<b>SMAAS</b>
<b>MWQ</b>	-	0.546***	0.508***	-0.675***
<b>VFS</b>	0.546***	-	0.830***	-0.516***
<b>VSC</b>	0.508***	0.830***	-	-0.456***
<b>SMAAS</b>	-0.675***	-0.516***	-0.456***	-
<b>Mean (SD)</b>	<b>2.162 (0.903)</b>	<b>2.645 (1.677)</b>	<b>1.851 (0.823)</b>	<b>5.157 (0.708)</b>

Note: The values reported are for the Spearman's rho. \*\*\* =  $p < 0.001$

**Figure 18: Mind Wandering Questionnaire recorded before and following the *Trāṭaka* and Eye Exercise Group; Values are group Mean  $\pm$  SD**

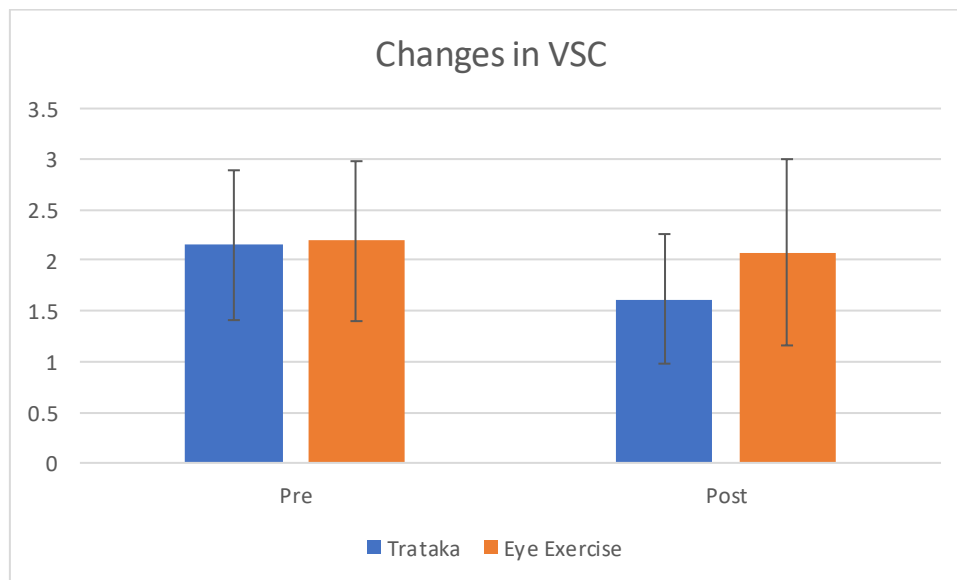


**Figure 19: Visual Fatigue Scale recorded before and following the *Trāṭaka* and Eye Exercise Group; Values are group Mean  $\pm$  SD**



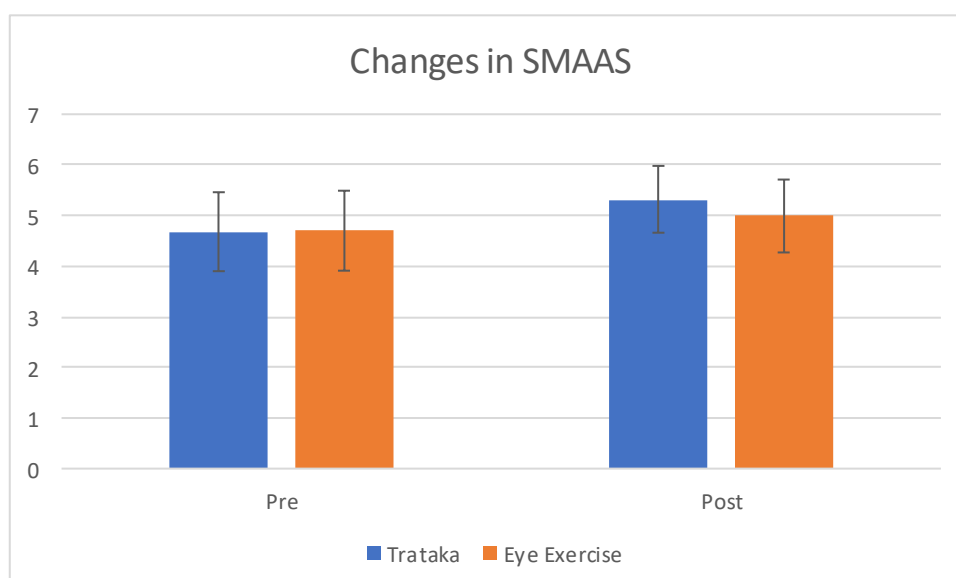
**Figure 20: Self-reported Visual strain using a fatigue and Symptom assessment checklist (VSC) recorded before and following the *Trāṭaka* and Eye Exercise Group**

Values are group Mean  $\pm$  SD



**Figure 21: State Mindfulness Attention Awareness Scale (SMAAS) recorded before and following the *Trāṭaka* and Eye Exercise Group**

Values are group Mean  $\pm$  SD



### 6.3. STUDY 3: PERFORMANCE IN CORSI BLOCK TAPPING TASK

#### 6.3.1. RECAPITULATION:

All 41 participants (8 male) completed all three sessions. RM ANOVA demonstrated significant within-subjects effect in Forward Corsi Span  $F(2, 80) = 8.757, p < 0.001$ ; Forward total scores  $F(2, 80) = 11.377, p < 0.001$ ; Backward Corsi Span  $F(2, 80) = 3.629, p = 0.031$ ; Backward total scores  $F(2, 80) = 3.950, p = 0.023$ . The within-subjects effects obtained through RM ANOVA are presented in table 16.

Pairwise comparisons between the sessions performed through RM ANOVA with Holm's corrections demonstrated significantly higher scores following *Trāṭaka* sessions when compared with baseline for Forward Corsi Span,  $t = -4.11, p < 0.001$ ; Forward Total Score,  $t = -4.76, p < 0.001$ ; and Backward Total Score,  $t = -2.74, p < 0.05$ . Scores following the *Trāṭaka* session were significantly higher than following Eye exercises for Forward Corsi Span,  $t = 2.74, p < 0.05$ ; Forward Total Score,  $t = 2.65, p < 0.05$ . The scores increased from baseline following Eye exercise only for Forward Total Scores,  $t = -2.10, p < 0.05$ . The effect sizes and  $t$ -values between sessions using RM ANOVA with Holm's correction along with the group mean and SD are reported in table 17.

**Table 16: Results of repeated measures analysis of variance for within-subjects effects**

Variable	<i>F</i>	df	<i>p</i>	Partial $\eta^2$
<b>Forward Corsi Span</b>	8.757	2, 80	< 0.001	0.180
<b>Forward Total score</b>	11.377	2, 80	< 0.001	0.221
<b>Backward Corsi Span</b>	3.629	2, 80	= 0.031	0.083
<b>Backward Total score</b>	3.950	2, 80	= 0.023	0.090

**Table 17: Pairwise comparisons between sessions for the performance in Corsi Block Tapping Task using Repeated Measures Analysis of Variance with Holm's Corrections**

Variables	Baseline	<i>Trāṭaka</i>	Eye exercise	Baseline vs <i>Trāṭaka</i>			Baseline vs Eye exercise			<i>Trāṭaka</i> vs Eye Exercise		
				<i>t</i> value	<i>p</i> value	Cohen's d	<i>t</i> value	<i>p</i> value	Cohen's d	<i>t</i> value	<i>p</i> value	Cohen's d
<b>Forward Corsi Span</b>	5.5±0.8	6.1±0.9	5.7±1.0	- 4.11	<0.001	0.642	-1.37	= 0.17	0.214	2.74	<0.05	0.428
<b>Forward Total Score</b>	44.26±15.59	56.95±17.77	49.87±18.60	- 4.76	<0.001	0.743	-2.10	<0.05	0.329	2.65	<0.05	0.415
<b>Backward Corsi Span</b>	5.9±0.4	6.1±0.4	5.8±0.7	-2.22	= 0.06	0.348	0.20	= 0.84	0.032	2.43	= 0.052	0.379
<b>Backward Total score</b>	51.41±10.67	56.68±10.91	52.97±11.67	-2.74	<0.05	0.427	-0.81	= 0.42	0.127	1.92	= 0.115	0.301

**Figure 22: Graphical Representation of the changes in the Corsi Block Tapping Task (Values are group Mean  $\pm$  SD)**

