

**IMMEDIATE EFFECT OF YOGA PRACTICE DONE BY CLOSE EYES,
OPEN EYES AND BASELINE CONDITION ON REACTION TIME WITH
FEMALE YOGA PRACTITIONERS**

TOWARDS

Partial fulfillment of Master degree in Yoga Therapy (M. Sc. YT)

SUBMITTED BY

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Under the Guidance of

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CERTIFICATE

This is to certify that **RISHU** who has got MSc registration with start from August 01, 2017 by **Swami Vivekananda Yoga Anusandhana Samsthana, deemed University**, has successfully completed the required training in acquiring the relevant background knowledge in Yoga Therapy and has completed the M.Sc. course of 2 years to submit this research project entitled **“Immediate effect of yoga practice done with close eyes, open eyes and baseline condition on reaction time with female subjects”** as per the regulations of the University.

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DECLARATION

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I also declare that the subject matter of my dissertation entitled “**Immediate effect of yoga practice done with open eyes, close eyes and baseline condition on reaction time with female subjects**” has not previously formed the basis of the award of any degree, diploma, associate-ship, fellowship or similar titles.

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**STANDARD INTERNATIONAL TRANSLITERATION CODEUSED TO
TRANSLITERATE SANSKRIT WORDS**

a	=	अ	ña	=	ङ	pa	=	प
ā	=	आ	ca	=	च	pha	=	फ
i	=	इ	cha	=	छ	ba	=	ब
ī	=	ई	ja	=	ज	bha	=	भ
u	=	उ	jha	=	झ	ma	=	म
ū	=	ऊ	ñ	=	ञ	ya	=	य
ṛ	=	ऋ	ṭa	=	ट	ra	=	र
ṝ	=	ॠ	ṭha	=	ठ	la	=	ल
e	=	ए	ḍa	=	ड	va	=	व
ai	=	ऐ	ḍha	=	ढ	śa	=	श
o	=	ओ	ṇa	=	ण	ṣa	=	ष
au	=	औ	ta	=	त	sa	=	स
ri	=	अ	tha	=	थ	ha	=	ह
ḥ	=	अः	da	=	द	kṣa	=	क्ष
ka	=	क	dha	=	ध	tr	=	त्र
kha	=	ख	na	=	न	jña	=	ज्ञ
ga	=	ग	gha	=	घ			

ABSTRACT

To assess the immediate effect of yoga practice done with eyes closed with eyes open and baseline condition on reaction time with female sample. Thirty female participants with age range 18 to 45 years were recruited from SVYASA University, Bangalore. Subjects were the students pursuing BSC and MSC degree from this college. Participants had to complete the Flanker task on their first visit to the lab without any intervention. On the second day, subject had to practice a set of 9 asana (either with eyes open or close) and perform the same test. On their third visit, subject had to perform the same set of asana (if on second day performed with close eye then third day open eyes) followed by the Flanker task. The result showed that there was a significant change in RT from baseline to open eyes condition and baseline to close eyes condition. Yoga is very effective in reducing the reaction time.

Key Words: Flanker task, eyes open and close.

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CHAPTER 1

INTRODUCTION

1.1 CONCEPT OF EYES CLOSE AND OPEN

Yoga practice is a multidimensional process of coordination between the physical posture, respiratory control technique, deep relaxation and meditation.(Mehta & Gangadhar, 2019)Yoga can be done with both eyes open and close. The practice need the coordination and complex integration between the visual, vestibular and somato-sensory organs (Shumway-Cook & Woollacott, 2014). Awareness shifts based on whether our eyes open or closed. Awareness is “exteroceptive” with open eyes and “interoceptive” with eyes closed. These states compare to concentrate “outwardly” versus “inwardly”, respectively, and each has distinctive psycho physiological attributes and hidden mind system.

An interoceptive state with eyes close is described by visual cortex actuation, while an “exteroceptive” state with eyes open is portrayed by visual engine framework movement(Marx et al., 2004). Ocular motor and attention system were discovered enacted when the eyes are open while visual, stomato-sensory, vestibular and sound related framework were activated when the eyes were closed. These suggest that there are two states of mental activity: an “interoceptive” state which includes imagination and multisensory activity (eyes closed) and an exteroceptive” state which includes attention and ocular motor activity (Marx et al., 2003).It is speculated that the “exteroceptive” state and the “interoceptive” states are related the various topological associations of the mind comparing to various data handling modes. (Xu et al., 2014)

Proprioception is the feeling of position and development of the appendages. The sense emerges through action in tangible neurons situated in skin, muscles, and joint tissues. Proprioception gives off an impression of being a compound sense, depending on synchronous movement in various kinds of afferent neurons. Position sense is generally intervened by movement in muscle afferent neurons. Afferent neurons starting in delicate tissues of the joints contribute a feeling of joint position just when the joint is turned into a point of confinement of its scope of movement. Joint neurons have a critical job in securing the trustworthiness of joints on the off chance that they are flimsy. Afferent neurons in skin seem to contribute little to position sense however may add to the feeling of development (Grigg, 2016)

1.2 REACTION TIME

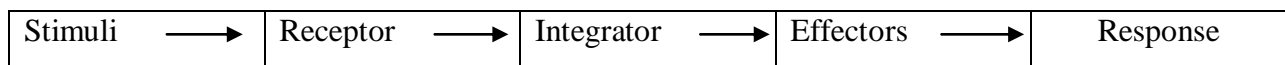
With the restored enthusiasm for the investigation of psychological procedure, response time (RT) has been utilized increasingly more habitually, in spite of the fact that it has really been estimated since the first half of the nineteenth century hen the issue of the “individual condition” developed. It is an index of cortical arousal and if it is decreased it indicates that improved

sensory motor performance and an enhanced processing ability of central nervous system(Das, Gandhi, & Mondal, 1997).

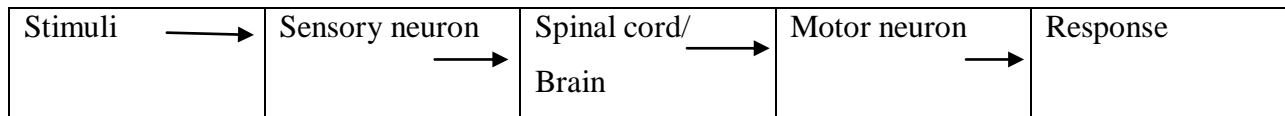
DEFINATION:

Reaction time (RT) is a simple mean of determines sensory motor association and performance and an indirect index of central nervous system (Bhavanani, Madanmohan, & Udupa, 2003). RT is a measure of how someone can react to a certain stimuli. It is sensitive and reproducible test and its measurement can be done through simple set up and apparatus. RT can be used as a simple and objective method to determine the effect of yoga training.

METHOD FOR INFORMATION FLOW WITHIN AN ORGANISM:



MORE SPECIFICALLY, INFORMATION IN VERTEBRAE FLOWS IN THIS WAY:



Sensory neuron convert and boost into an electro-mechanical signal, which stream the sensory neuron, at the point through a neuron or neurons of the focal sensory system, and after that through the length of the entire neuron. For most part, motor neuron will make the muscle contract or an organ to mystery a substance. Reaction time includes just the receptor, the spinal cord and the effectors are quicker than those which include processing of brain. Responses which travels to and through, and from spinal cord are frequently called spinal reflexes (Kosinski, 2013)

Today RT measures are utilized essentially for two purposes: (A) to think about the idea of mental procedures furthermore, their hidden structures, by estimating the time to play out a certain procedures or some segment of it, and (B) to contemplate the response procedure in that capacity, by efficiently controlling the qualities of boost and reaction and the subject’s arrangements for the assignment.(Niemi & Näätänen, 1981)

Just a couple of studies have examined the impact of intense exercise on higher psychological capacities while working out, and right no results are fairly obscure. Better reaction time detailed response time was exposed by (Pesce, Capranica, Tessitore, & Figura, 2011)and (Pesce, Tessitore, Casella, Pirritano, & Capranica, 2007) exhibition and sub maximal practice on discriminative errands requiring awareness introduction and subjective adaptability. On the other

hand, (Pontifex & Hillman, 2007) found that moderate high-impact practice decreased reaction time (RT) precision for incongruent preliminaries and diminished proficiency of the neurological framework using an Eriksen flanker task. The creators inferred that the attention exertion required amid exercise may prompt wasteful assignment of neural assets, which prompts more unfortunate obstruction control on the errands. During the Eriksen flanker task (B. A. Eriksen & Eriksen, 1974) a focal target boost is given at the same time to distracters boost (flanker) and member is told to react as indicted by the object disregarding the flanker. Response time (RT) execution is typically answered to be better when applicable and unimportant data to a similar reaction (harmonious trial) than when they are mapped to various reactions (incongruent trail). Past researches looking at the impact of activity on the flanker task has tended to show in general no noteworthy impact on RT (Hillman, Snook, & Jerome, 2003). In spite of the fact that (Kamijo, Nishihira, Higashiura, & Kuroiwa, 2007) found a critical abatement in RT following exercise, (Pontifex & Hillman, 2007) indicated increments in the quantity of blunders during exercise at 60% most extreme pulse, presumably incubating a speed precision tradeoff (Pachella, 1974) Be that as it may, the convention of the past investigation, make it hard to unquestionably show directional speculation for RT in the current think about on the ground that these investigations, tried the impact following the end of activity. Post exercise, the person is in a different condition of psychological excitement than during the exercise. (Dias & Armstrong, 2004) which would influence the outcome.

1.3 NEED OF THE STUDY

Practice of yoga emphasizes body awareness and involves focusing one's attention on breathing or specific muscles or parts of body. Therefore, there is a need of study on this topic in order to acquire necessary evidence, on how eyes close eye open with baseline improves reaction time on yoga practice.

CHAPTER 2

REVIEW OF ANCIENT LITERATURE/SCRIPTURES

“Each soul is potentially divine, the goal of the life is to manifest the divinity within, by controlling nature, external and internal”- Swami Vivekananda

2.1 DEFINATION OF YOGA ACCORDING TO DIFFERENT TEXTS:

2.1.1 ACCORDING TO पातञ्जलयोगसूत्राणि:

योगश्चित्तवृत्तिनिरोधः ॥ १.२ ॥

yogaścittavṛttinirodhaḥ ॥ 1.2॥

Yogah cittah vritti nirodhah / 1-2 patanjali yoga sutra

Yoga is a process of gaining control over the mind

2.1.2 ACCORDING TO योगवासिष्ठः:

मनः प्रशमनोपायः योगः इत्यभिधीयते ।३-६-२ ॥

manaḥ praśamanopāyaḥ yogaḥ ityabhidhiyate।3-6-2॥

Manah prasamanopayah yogah itibhidhiyate / 3-6-32 yoga vasistha

Yoga is the skillful action to calm down the mind

2.1.3 ACCORDING TO SRI AUROBINDO:

“Yoga is a methodological effort towards the self perfection by the development potentialities, which is the individual” – Sri Aurobindo

2.1.4 ACCORDING TO श्रीमद्भगवद्गीता:

समत्वं योगः उच्यते ।२-४८ ॥

samatvaṁ yogaḥ ucyate|2-48||

Yoga is equilibrium

योगः कर्मसु कौशलम् ।२-५० ॥

yogaḥ karmasu kauśalam|2-50||

Yoga is skill in action

2.2 MIND ACCORDING TO UPANISHADS

2.2.1 ACCORDING TO बृहदारण्यकोपनिषतः (1-5-3)

कामः सङ्कल्पो विचिकित्सा श्रद्धाऽश्रद्धाधृतिरधृतिर्हीर्षीर्भीर्हित्येतत्सर्वं मन एव ।

kāmaḥ saṅkalpo vicikitsā śraddhā'śraddhādhṛtiradhṛtirhīrṣīrībīrṣīrityetatsarvaṁ mana
eva |

Desire, resolve, doubt, faith, want of faith, steadiness, unsteadiness, shame, intelligence and for all these are but the mind. They are all form of the mind, or the integral organ.

2.2.2 ACCORDING TO कठोपनिषदः (1-3-3)

आत्मानं रथितं विद्धि शरीरं रथमेव तु ।

बुद्धिं तु सारथिं विद्धि मनः प्रग्रहमेव च ॥ ३ ।

ātmānaṁ rathitaṁ viddhi śarīraṁ rathameva tu |
buddhiṁ tu sārathim viddhi manaḥ pragrahameva ca || 3||

Consider the embodiment soul as the master of the chariot, the body as the chariot, the intellect as the charioteer, and the mind as the reins.

2.2.3 ACCORDING TO तैत्तिर्यैपीन्षतः (2-4-1)

यतो वाचो निवर्तन्ते । अप्राप्य मनसा सह ।
आनन्दं ब्रह्मणो विद्वान् । न बिभेति कदाचनेति ।

yato vāco nivartante | aprāpya manasā saha |
ānandaṁ brahmaṇo vidvān | na bibheti kadācaneti |

2.2.4 ACCORDING TO वैन्डैपीन्षतः

अथाध्यात्मं यदेतद्गच्छतीव च मनोऽनेन
चैतदुपस्मरत्यभीक्षणं सङ्कल्पः ॥ ५ ॥

athādhyātmaṁ yaddetadgacchatīva ca mano'nena
caitadupasmaratyabhikṣṇaṁ saṅkalpaḥ || 5||

Presently here is an instrument on Brahman that identifies to the mind of individual self; the mind comes to, in a manner of speaking, that (Brahman) and by which the aspirant always reflects upon that (Brahman). This is the manner in which he should coordinate his psyche.

2.3 MINDS ACCORDING TO THE TATVA BODHA:

एतेषां पञ्चतत्त्वानां समष्टिसात्त्विकांशात् ।

मनोबुद्ध्याहन्कर् चित्तान्तः करणानि संभुतानि ॥ १८

eteṣāṁ pañcatattvānām samaṣṭisāttvikāṁśāt |
manobuddhyāhankar cittāntaḥ karaṇāni sambhutāni || 18

From the total satvik aspect of these five elements the inner instrument of the mind, intellect, ego and memory are formed, the mind is of the nature of indecision. The intellect is the nature of decision. The ego is of the nature of doer ship. Memory is of the thinking one recollection.

2.4 MINDS ACCORDING TO YOGA

2.4.1 ACCORDING TO पातञ्जलयोगसूत्राणि:

योगश्चित्तवृत्तिनिरोधः ॥ १.२ ॥

yogaścittavṛttinirodhaḥ ॥ 1.2॥

Mind or chitta is derived from the idea of chit, which means to see, to be conscious of, to be aware. Hence, Chitta means individual consciousness; which includes the conscious state of mind, the subconscious state of mind and also the unconscious state of mind. The totality of these three states of individual mind is symbolized by *chitta*.

2.4.2 ACCORDING TO योगवासिष्ठः

यत् अर्थप्रतिभानं तत् मन इत्यभिधीयते ।

नास्त्यस्य मनसो रूपं संकल्पात् तत् न भिद्यते ॥ ६१६

अविद्या संस्रितः चित्तं बन्धोऽज्ञानं मनः तमः ।

इति संकल्पजालस्य नामान्येतानि रघव ॥६१७

yat arthapratibhānaṁ tat mana ityabhidhīyate |
nāstyasya manaso rūpaṁ saṅkalpāt tat na bhidyate ॥ 616
avidyā saṁsrītiḥ cittam bandho'jñānaṁ manaḥ tamaḥ |
iti saṅkalpajālasya nāmānyetāni raghava ॥617

The universe which is seen all around is made up of mind, one which is the understanding of the objects is called the mind. There is no form of the mind. It is not separated from the thought. Nescience, stream of worldly life, thinking substances, ignorance, mind, darkness, bondages, are name of web thoughts. When the web thought comes, ones on natural thought is left behind. When the great dissolution is accomplished and the state of non existence is reached at the beginning of the creation of the entire visible universe, only stillness remains.

2.4.3 ACCORDING TO HATHA YOGA PRADIPIKA:

ज्ञेयं सर्वं प्रतीतं च ज्ञानं च मन उच्यते ।

ज्ञानं ज्ञेयं समं नष्टं नान्यः पन्था द्वितीयकः ॥ ६० ॥

मनो-दृश्यमिदं सर्वं यत्किञ्चित्स-चराचरम् ।
मनसो ह्युन्मनी-भावाद्वैतं नैवोल्भ्यते ॥ ६१ ॥
ज्ञेय-वस्तु-परित्यागाद्विलयं याति मानसम् ।
मनसो विलये जाते कैवल्यमवशिष्यते ॥ ६२ ॥

jñeyam sarvaṁ pratītam ca jñānam ca mana ucyate ।
jñānam jñeyam samaṁ naṣṭam nānyaḥ panthā dvitīyakaḥ ॥ 60॥
mano-dṛśyamidaṁ sarvaṁ yatkiñcitsa-carācaram ।
manaso hyunmanī-bhāvāddvaitaṁ naivolabhyate ॥ 61॥
jñeya-vastu-parityāgādvilayaṁ yāti mānasam ।
manaso vilaye jāte kaivalyamavaśiṣyate ॥ 62॥

All that known, all that is known and the knowledge is called mind. When the knower and that which known are lost together, there is no dual or second way. All that is in the world animated and inanimate is the appearance of mind. When these three states of knower, knowing and known are merging as one experience that is one pointedness of mind, which become the ated od cosmic or universal consciousness.

2.5 MINDS ACCORDING TO BUDDHISM:

Understanding the working of mind forms the beginning of Buddhist thinking and practices: as the initial verse of the DHAMMAPADA states: “all things are proceed by the mind, lead by the mind and shaped by the mind”.

Mind is defined in Buddhism as a non-physical phenomenon which perceives thinks, recognizes, experience, and reacts to the environment. The mind is described as having two main aspect in it: clarity and knowing. The two main types of mind are explained as the conceptual and the non-conceptual mind. The conceptual mind is the “normal” mind aspect e use to survive in daily life, but is ultimately mistaken about the way in which reality exist. The non conceptual mind is also called the Buddha nature, rigpa, fundamental pure nature of mind which realizes emptiness

2.6 MENTAL SPEED OF MIND ACCORDING TO श्रीमद्भगवद्गीता:

चञ्चलं हि मनः कृष्ण प्रमाथि बलवद् दृढम् ।

तस्याहं निग्रहं मन्ये वायोरिव सुदुष्करम् ॥ ६-३४ ॥

cañcalam hi manaḥ kṛṣṇa pramāthi balavad dṛḍham ।
tasyāhaṁ nigrahaṁ manye vāyoriva suduṣkaram ॥ 6-34॥

O kṛṣṇa! Verily, the mind is fickle, turbulent, a powerful and unyielding. To control it, I think it is as difficult as controlling the wind itself.

The mind can sometime overcome the intelligence because it is so strong. For a common man who live in practical world ho has to fight with so many opposing elements, it becomes very difficult to control the mind. Artificially, one may develop a mental balance towards both companion and an enemy but no worldly being can do this because this is more troublesome than controlling the raging wind and one cannot capture the blowing wind. Such powerful mind can be controlled through the practice of yoga. The easiest way to control the mind is suggested by Lord Chaitanya, is by chanting ‘hare kṛṣṇa” the great mantra. Uncontrolled speed of mind is lack of peace of mind. A person who is not able to control his senses there is no peace of mind. Hence, the whole process is aggravated and the stress is originated.

ध्यायतो विषयान्पुंसः सङ्गस्तेषूपजायते ।

सङ्गात्सञ्जायते कामः कामात्क्रोधोऽभिजायते ॥ २-६२ ॥

dhyāyato viṣayānpuṁsaḥ saṅgasteṣūpajāyate ।
saṅgātsañjāyate kāmaḥ kāmātkrodho'bhijāyate ॥ 2-62॥

क्रोधाद्भवति सम्मोहः सम्मोहात्स्मृतिविभ्रमः ।

स्मृतिभ्रंशाद् बुद्धिनाशो बुद्धिनाशात्प्रणश्यति ॥ २-६३ ॥

krodhādbhavati sammohaḥ sammohātsmṛtivyibhramaḥ ।
smṛtibhramśād buddhināśo buddhināśātpṛaṇāśyati ॥ 2-63॥

When a man repeatedly thing about any object or thing, that person develops desire (strong likes and dislikes) for that particular object. Hence, attachment is developed. From desire anger (lust, greed, fear etc) arises, from anger delusion comes, and from this loss of memory happens, the destruction of discriminative power happens, from destruction of discrimination power the man perished. Hence, controlling the speed of mind is very important because it lead to destruction of

a person. Uncontrolled mind is one's greatest enemy because it develops great sorrow and bondages.

इन्द्रियाणां हि चरतां यन्मनोऽनुविधीयते ।

तदस्य हरति प्रज्ञां वायुर्नावमिवाम्भसि ॥ २-६७ ॥

indriyāṇāṃ hi caratām yanmano'nuvidhīyate ।
tadasya harati prajñāṃ vāyurnāvamivāmbhasi ॥ 2-67॥

“For the mind, which follows in the wake of the wandering senses, carries away his discriminative as the wind carries away a boat of the waters”

Just as a ship sails without its helmsman at the mercy of fitful storms and haphazard waves which cannot reach its definite harbour, it gets destroyed by the tossing of waves, so too, life gets capsized and an individual is drowned by the uncertain buffets of passionate sense-storms. Therefore, the senses are to be controlled if a man is to live a purposeful life and better life and to have a successful life.

2.7 CONCEPT OF PRANA ACCORDING TO प्रश्नोपनिषतः

आत्मन एष प्राणो जायते । यथैषा पुरुषे

छायैतस्मिन्नेतदाततं

मनोकृतेनायात्यस्मिञ्शरीरे ॥ ३.३ ॥

ātmana eṣa prāṇo jāyate । yathaiṣā puruṣe
chāyaitasminnetadātataṃ
manokṛtenāyātyasmiñśarīre ॥ 3.3॥

prana springs from the atman, that is self. It is like a shadow of the self, inseparable from it. It enters body through the mind.

यथा सम्रादेवाधिकृतान् विनियुङ्क्ते । एतन् ग्रामानोतान्

ग्रामानधितिष्ठस्वेत्येवमेवैष प्राण इतरान् प्राणान् पृथक्

पृथगेव सन्निधत्ते ॥ ३.४ ॥

yathā samrādevādhikṛtān viniyuṅkte | etan grāmānotān
grāmānadhitiṣṭhasvetyevamevaiṣa prāṇa itarān prāṇān pṛthak
pṛthageva sannidhatte || 3.4||

the chief prana allots work to the lower prana, similar to an emperor who allots duty to his officials.

- Prana- himself resides in eyes, ears, mouth and nose, consider the gates of the body
- Apana- it is located in organs of reproductive or excretion
- Samana- it resides in stomach
- Vyana- it flows throughout the body
- At the time of death, the udana leads us to the good world by good work, to the bad world by bad work.

The sun is the external prana: It exist as prana in the eye. The earth draws apana downwards. It either exist in the space between the sun and the earth as samana. Air or wind is the vyana.

सोऽभिमानादूर्ध्वमुत्क्रामत इव तस्मिन्नुत्क्रामत्यथेतरे सर्व
एवोत्क्रामन्ते तस्मिंश्च प्रतिष्ठमाने सर्व एव प्रतिष्ठन्ते । तद्यथा
मक्षिका मधुकरराजानमुत्क्रामन्तं सर्व एवोत्क्रामन्ते तस्मिंश्च
प्रतिष्ठमाने सर्व एव प्रतिष्ठन्त एवं वाङ्मनश्चक्षुः श्रोत्रं
च ते प्रीताः प्राणं स्तुन्वन्ति ॥ २.४ ॥

so.abhimAnAdUrdhvamutkrAmata iva tasminnutkrAmatyathetare sarva
evotkrAmante tasmiMshcha pratiShThamAne sarva eva pratiShThante |tadyathA
madhukararAjAnamutkrAmantaM sarva evotkramante tasmiMShcha
pratiShThamAne sarva eva prAtiShTanta evaM vA~NmanaShchakShuH shrotraM
cha te prItAH prANa.n stunvanti || 2\4||

Prana from the sense of rectitude, got up and made as if it was going to leave. When it got up to go, all others, all of them, also had to get up to leave. When it remained in its place, all of them remained. This is just what happens in the case of bee. When the Queen bee gets up to leave the hive, all of them also have to get up to go. And when she returns to it, all of them also return. In the same way, mind, eye and the ears too had to please prana and sing its praise.

Relationship between sense organs and panchmahabhuta :

एक एक अधिक युक्तानि खादीनाम् इन्द्रियाणि तु ।

पञ्च कर्मानुमेयानि येभ्यो बुद्धिः प्रवर्तते ॥१२४

eka eka adhika yuktAni khAdInAm indriyANi tu.
paJca karmAnumeyAni yebhyo buddhiH pravartate..(1/24)

The buddhi indriya namely chakshu, shrotra, ghraana, rasanaa and twak are called buddhi indriyas because buddhi or knowledge is embedded in these organs. Each of these indriyas are made up of all the mahabhutas i.e the element of nature but it is predominant in one mahabhuta. The function of these indriyas depend on the quality and quantity of the mahabhuta present in these indriyas.

Chakshu or eyes are dominated by the agni mahabhuta (fire element)

Shrotra or ears are dominated by akash mahabhuta (ether element)

Ghrana or nose are dominated by prithvi mahabhuta (earth element)

Rasana or tongue are dominated by jala mahabhuta (water element)

Twak or skin are dominated by vayu mahabhuta (air element)

2.8 CONCENTRATION OF MIND ACCORDING TO श्रीमद्भगवद्गीता:

शनैः शनैरुपरमेद् बुद्ध्या धृतिगृहीतया ।

आत्मसंस्थं मनः कृत्वा न किञ्चिदपि चिन्तयेत् ॥ ६-२५ ॥

śanaīḥ śanaīruparameḍ buddhyā dhṛtigr̥hītayā ।
ātmasaṁsthaṁ manaḥ kṛtvā na kiñcidapi cintayet ॥ 6-25 ॥

One can gain single pointedness by dropping all one's agitation causing desires and then, with an extra strength in one's mind withdrawal one's attention to the self. All desires can be fully controlled by the mind, control all the sense organs from their entire world of sense objects. Each desire should be completely eradicated.

2.9 CONCEPT OF ASANA:

2.9.1 ACCORDING TO PATANJALI

स्थिरसुखम् आसनम् ॥ २.४६ ॥

sthirasukham āsanam ॥ 2.46॥

The posture should be steady and comfortable. Asana can be mastered by loosening the effort and by meditating on the serpent ananta.

2.9.2 ACCORDING TO HATHA YOGA PRADIPIKA

हठस्य प्रथमाङ्गत्वादासनं पूर्वमुच्यते ।

कुर्यात्तदासनं स्थैर्यमारोग्यं चाङ्ग-लाघवम् ॥ १९ ॥

haṭhasya prathamāṅgatvādāsanam pūrvamucyate ।
kuryāttadāsanam sthairyamārogyam cāṅga-lāghavam ॥ 19॥

The first part of hatha yoga explains asana. One can get steadiness of the body and mind, diseaselessness and flexibility of the limbs by practicing asana.

2.9.3 ACCORDING TO GHREANDA SAMHITA

आसनानि समस्तानि यावन्तो जीवजन्तवः ।

चतुरशीति लक्षाणि शिवेन कथितानि च ।

तेषाम् मध्ये विशिष्टानि षोडशोऽनं शतं कृतम्

तेषाम् मध्ये मर्त्यलोके द्वात्रिंशदासनं

āsanāni samastāni yāvanto jīvajantavaḥ ।
caturaśīeti lakṣāṇi śivena kathitāni ca ।
teṣām madhye viśiṣṭāni ṣoḍaśoanam śataṁ kṛtam
teṣām madhye martyaloke dvātrimśadāsanam

The number of asana is same as the number of animal species existing in the world. Lord shiva described eighty four-lakh asana out of which thirty-two asanas should be considered as auspicious in this mortal world.

2.9.4 PADHASTASANA:

(उत्तानासन Uttānāsana)

This pose was first described in 20th century by Trimalai Krishnamacharya in his book Yoga Makarnda. In the book (Krishnamacharya, 1938) Translated by Laxmi and Nandini Ranganathan explained Padhastasana in 8 forms. According to the author all the abdominal problems will be removed and digestive fire will increase.

BKS Iyenger in the light on Yoga (Bilr & Philo, n.d.) Explain that this asana helps to increase the digestive juice, while the liver and spleen are activated. People suffering from all abdominal problem, such belching, bloating will be benefited. Slipped spinal can be adjusted in this asana

2.9.5 VRKSASANA

(वृक्षासन)

वमोरुमूलदेशे च याम्यं पादं निधाय वै

तिष्ठेतु त्रिक्षवद्भ्रमौ वृक्षासनमिदं विदुः ॥

vamorumūladeśe ca yāmyaṁ pādāṁ nidhāya vai
tiṣṭhetu vrikṣavadbhramau vrkṣāsanamidāṁ viduḥ ॥

Placing the right foot on the left thigh, stand like a tree on the ground. This is called vrksasana

(Vasu, n.d.)

2.9.6 TRIKONASANA

(त्रिकोणासन)

According to (Krishnamacharya, 1938) this asana should be practiced for minimum of 10 minutes. Proper clean blood will be seen in nerve of the back, hip, arm, neck and heels. There will be no pain caused by Vata Roga. If one practices this every day, it will lead to complete and clearing of the bowel and urine from the body.

According to (Bilr & Philo, n.d.) the benefits of this asana are: tones up the leg and remove the stiffness from the body. It relieves the person from back ache and neck sprain, develops the chest and strengthens the ankle joint.

2.9.7 PARIVRTTA TRIKONASANA

(परिवृत्त त्रिकोणासन)

According to (Bilr & Philo, n.d.)this asana tones up the thighs, calf muscles and hamstrings. It helps the spine and muscles of the back to work properly. Help to expand the chest muscles. It helps to relieve pain from the back, abdominal organs and strengthen the hip muscles.

2.9.8 ADHOMUKH SAVASANA:

(अधोमुखशवासन)

According to (Bilr & Philo, n.d.) (light on yoga) this asana should be practiced by one who is exhausted and tired can stay in this asana for long time remove fatigue and tiredness. It helps to bring back the lost energy. This asana is very good for athletes. It helps to remove stiffness and pain from the heels, shoulder blade. Arthritis of the shoulder is removed. Person suffering from high blood pressure can practice this asana.

According to the (Krishnamacharya, 1938)all diseases such as bloating of stomach, bad belching, ajeernavayu, will be eradicated.

2.9.9 USTRASANA:

(उष्ट्रासन)

अध्यास्य शेते पदयुग्मव्यस्तं प्रिश्थे निधायापि ध्रितम् कराभ्याम् ।

आकुन्च्य सम्यग्धुदरास्यगाढं उष्ट्रं च पथं यतयो वदन्ति ॥ वेर्से ४१

adhyāsya śete padayugmavyastam priśthe nidhāyāpi dhritam karābhyām |
ākuncya samyagdhudarāsyagāḍham uṣṭram ca petham yatayo vadanti || (verse 41)

(Vasu, n.d.)

According to explained that the whole spinal cord is stretched back and is toned. This pose can even be done by people suffering from spinal injury and elderly people/. People having drooping shoulder and hunched back will have benefit from doing this asana.

CHAPTER 3

REVIEW OF SCIENTIFIC LITERATURE

S.N.	Author & Year	Sample details	Intervention	Assessment Tools	Result	Conclusion
1.	(N. Gothe, Pontifex, Hillman, Mcauley, & Pontifex, 2013)	N=30 female participants from University of Illinois at Urbana-Champaign	Yoga exercise, aerobic exercise, baseline assessment	Flanker task, N-back test	Cognitive performance increased after yoga practice as compared to the aerobic and baseline condition.	To explore effect of yoga on cognition and the importance of time elapsed and initiation of cognitive assessment in improving task performance.

2.	(Aoki et al., 2012)	n = 87 healthy males aged 10- 80 years.	20 times subject have to step on to force plate (left/right) at the rate of 60 steps per minute	Stabilometer	Parameters revealed no significant age related difference for all COP sway.	>80 years have greater body sway during stepping with closed eyes compared to open eyes.
3.	(Johnson, Skromanis, Bruno, Mond, & Honan, 2018)	N= 32 males and 32 females from 18-34 years were recruited from University of Tasmania	Consumed a beverage having placebo or alcohol calculated to achieve the target of BrAC of 0.080%	Flanker task, cued go/n0 go task, social disinhibition task.	People who have consumed alcohol inhibits negative response to negative social information	Negative alcohol related behavior and promote the social context, abilities, pressure and to prevent alcohol related antisocial behavior
4.	(Barry, Clarke, Johnstone, & Brown, 2009)	N= 30 children (12 females) were recruited.	EEG were recorded for eyes open eyes closed and resting condition	SCL were recorded as an index of arousal	SCLs were negatively correlated with the mean alpha levels in	The use of mean alpha level as a measure of baseline

					the eyes closed than in eyes open or baseline condition	condition arousal under eyes closed and eye open condition.
5.	(B. A. Eriksen, Eriksen, & Hoffman, 1986)	N= 6(2 males, 4 females) students were recruited from University of Illinois.	No intervention	Flanker task	RT for incompatible noise was significantly longer than the compatible noise for both positive and negative trial sets.	A study to find the difference in RT for both positive and negative trial set target.
6.	(Sonwane & Mishra, 2016)	70 normal and 70 hypertensive people	A set of yoga asana and pranayama	Respiratory rate, BMI, systolic BP and diastolic BP, pulse rate	Change in RT parameters was more in hypertensive subjects when compared with normal participant.	A study has done to show the effect of asana and pranayama on auditory and visual RT.
7.	(Coles & Tomporowski, 2008)	18 young adults from Graduate University class.	Set of aerobic exercise and cycle exercise.	Free recall memory test.	Exercise increases long term memory whereas it declined after	Exercise have effect on executive as well as

					rest and non exercise condition.	short term and long term memory
8.	(Davranche, Audiffren, & Denjean, 2006)	4 females and 7 male- experienced players in decisional sports.	Power exercise and rest condition	Bicycle ergo meter	Subjects were more faster while cycling	Physical exercise has effect on reaction time.
9.	(N. P. Gothe, Kramer, & McAuley, 2016)	N= 68 (yoga group) 40 (control group)	8 week of Hatha yoga practice- yoga group Stretching exercise- control group	Attention network task, trial Making Test, Pattern comparison test	Faster reaction time was seen in the yoga group than compared to control group	Yoga improves attention and informed processing abilities.
10.	(Travis & Wallace, 1999)	N= 13 males and 7 females	Transcendental meditation with closed eyes.	EEG	More reaction time when done with closed eyes.	Mediation done with closed eyes.
11.	(Engle, 2002)	N= 54 from several area colleges 26 high working memory capacity 28 lo working memory capacity	No intervention	Flanker task, attention network task	Individual difference were found in WMC	WMC correspond to the difference in three attention function
12.	(Hutt & Redding, 2014)	N= 19 females (pre professional ballet dancers)	4 weeks of eyes closed dynamic balance training	Star Excursion balance test	Distance and time to complete the balance task were more	The capability of an eye closed dance

					significant in the eye closed \group	training nurture dancers proprioceptive mechanism .
13.	(Shenvi & Balasubramanian, 1994)	N= 38 males and 41 females	No intervention	Digital display response time apparatus manufactured by techno Electronics	The RT was significantly higher in boys than in girls. And RT to visual stimuli was lower than auditory stimuli	RT varies with the different stimuli in same receptor

CHAPTER 4

4.1 AIM

To evaluate the effect of yoga practice done with close eyes, open eyes and baseline condition on reaction time.

4.2 OBJECTIVE

- To find the difference between the yoga practice done with eyes closed eyes open and baseline condition.
- To assess the reaction time between eyes closed and open eyes and baseline condition.

4.3 HYPOTHESIS

There may be significant difference between yoga practice done with eyes closed with eyes open and baseline condition on reaction time.

4.4 NULL HYPOTHESIS:

- There may not be a significant difference between the yoga practice done with eyes closed with eyes open and baseline condition on reaction time.
- Mean of baseline condition = mean of open eyes = mean of closed eyes

CHAPTER 5

METHODOLOGY

5.1 SOURCE OF SUBJECT

Female subjects pursuing PG and UG degree from SVYASA UNIVERSITY, BANGALORE of were recruited for the present study.

Sample size: 30 female students participated in the study.

5.2 INCLUSION CRITERIA

- Gender- Female
- All healthy regular yoga practitioner
- All the participants have normal or corrected-to-normal vision
- Subjects living inside the campus

5.3 EXCLUSION CRITERIA

- Student who are not willing to participant in the study.
- Students with visual impairment
- Subject suffering from any disease.

5.4 INFORMED CONSENT

Signed informed consent was obtained from the subject before the experiment.

5.5 CALCULATION OF SAMPLE SIZE

(N. Gothe, Pontifex, Hillman, Mcauley, & Pontifex, 2013) arrived at the sample size of 28 by G* Power version 3.0.10 with alpha 0.05 and power 0.80.

5.6 DESIGN OF THE STUDY

Self as controlled

5.7 INTERVENTION:

All students visit the laboratory for 3 separate days (eyes open, eyes close and baseline). On the first visit to laboratory the student's signed the informed consent. The order of the eyes open and eyes close were counterbalanced across the student to minimize any effect of order or practice. During the baseline session, the student completed the flanker task. During the eyes open and

eyes close visit, a 20 minute movement of seated, standing and supine yoga postures (see table 1) took place for 6 people at a time. The posture includes isometric contraction and relaxation of different muscle groups related to regulated breathing, and it concluded with a meditative deep breathing posture. The students concentrated on performing the asana, regulation of breathing and being aware of their muscle movement and physical posture. Each posture was done twice and was maintained for 1 minute each. (N. Gothe, Pontifex, Hillman, & McAuley, 2016)

Description of Asana:

S.NO	ASANA	DURATION
1.	UTTANASANA- Standing forward bend	1 minute
2	VRIKSHASANA-Tree pose	2 minute
3	TRIKONASANA- Triangle pose	2 minute
4	PARIVRTTA TRIKONASANA- Reverse triangle pose	2 minute
5	ADHOMUKHA SHAVASANA- downward facing dog	1 minute
6	USTRASANA- Easy camel pose	1 minute
7	SHASHANKASANA- Hare pose	1 minutes
8	SURYANAMASKAR- Salute to the sun	3 minute
9	PADMASANA- Deep Breathing	4 minute

5.7 ASSESSMENTS TOOLS

FLANKER TASK:

The task is named for Barbara.A. Eriksen and Charles W. Eriksen who first developed the task in the year 1974. The Eriksen Flanker Task is a set of response inhibition test used to measure the information processing and selective attention.

5.8 PROCEDURE:

Flanker task was utilized and the member was asked to press the instructed button with their fingers as fast as possible to the centrally presented target which is ½ degree above the fixation cross and to ignore all the letters that appeared on the visual field. Participant was seated approximately 60 centimeter from the computer screen. The target letters were capital H, K, S and C. four target letters were divided into two response sets. One response set required to press the left key whereas, the other required pressing the right key. The target letter always appeared above the fixation cross in the middle of the screen and it was always flanked by the noise letters. The five conditions are: (1) noise identical to target- have same repetition as the target

letter (2) noise same response as target- flanked by the other member of the same response set (3) noise other target set- flanked by the letters from opposite response set (4) noise similar to the target- flanked by the letters having similar feature to the target (5) noise dissimilar to the target- flanked by the noise having dissimilar features to the target set. In Table 1, the five different noise conditions are explained and in all the case H is the target set.(B. A. Eriksen & Eriksen, 1974)

Each student participated in one practice session before beginning of the experiment. 12 experiment sessions were run, each consisting of three blocks of 32 trials, plus one block of 12 single letter trials.

All five noise condition has three different visual spacing. The distance between the target and the noise distraction varied from 0.06 to 1.0 degree of angle trial.

- 1) 0.06 degree visual separation (depends on viewing distance and font size)
 - 2) 0.5 degree visual separation (depends on viewing distance and font size)
 - 3) 1 degree visual separation (depends on viewing distance and font size)
- (C. W. Eriksen, 1995)

TABLE 1:

CONDITION	EXAMPLE
1. Noise same as target	HHHHHH
2. Noise response compatible	K KK H K KK
3. Noise response incompatible	S SS H S SS
4. Noise similar to target	N W Z H N W Z
5. Noise dissimilar to target	G J Q H G J Q

The target letter was flanked by a single letter from the opposite response set (S SS H S S S), in incompatible noise. And in the compatible noise the target letter was either flanked by the same letter as the target (H H H H H H) or the other letter in the same response set as the target (K K K H K K K)(B. A. Eriksen & Eriksen, 1974). Performance of the subject not only requires the subject to identify the target letter but also locate the noise letter. The extra time is required to both identifying the target and locating the noise letters.

5.9 DATA ANALYSIS

The data was analyzed using R studio version 3.4.1. RM Anova and t-test was used to for analysis. The packages used were reshape2(Wickham, 2017), ez (Lawrence, 2016), apa (Package, 2019), apaTables (David & Stanley, 2018) and psych (Revelle, 2011). Alpha was set at 0.05 level of significance

The packages used were:

1. Reshape2

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Author = {Hadley Wickham}

Year = {2007}

URL = {<http://www.jstatsoft.org/v21/i12/>}

2. Ez

Title = {Easy analysis and visualization of factorial experiments}

Author = {Michael A Lawrence}

Year = {2011}

URL = {<http://CRAN.R-project.org/package=eZ>}

3. ApaTables

Title = {**Create** American Psychological Association (APA) Style Tables}

Author = {David Stanley}

Year = {2018}

URL = {<https://CRAN.R-project.org/package=apaTables>}

4. psych

Title = {psych: Procedures for Psychological, Psychometric, and
Personality Research}

Author = {William Revelle}

Year = {2018}

URL = {<https://CRAN.R-project.org/package=psych>}

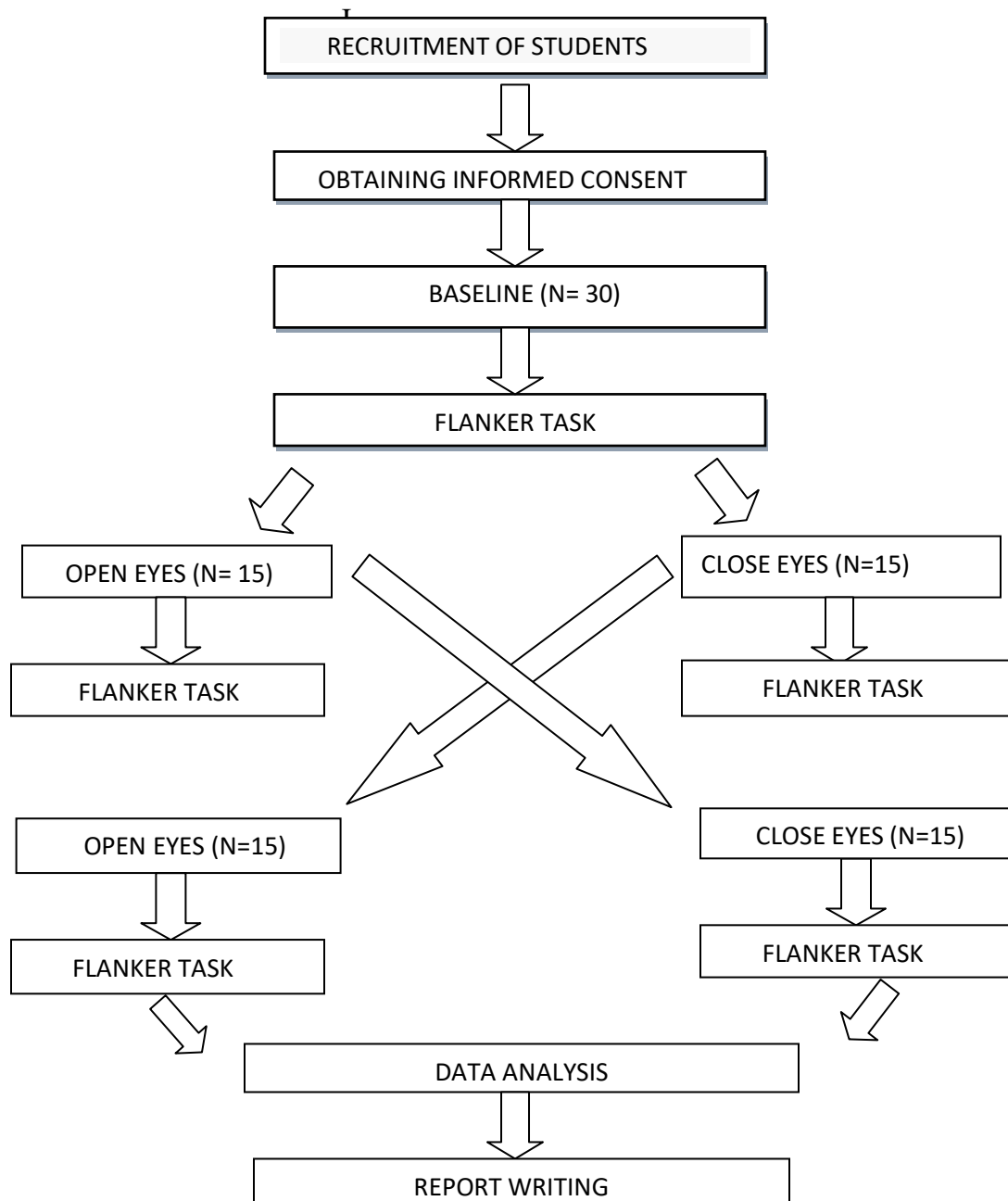
Alpha was set at 0.05 eve of significance.

CHAPTER 6

RESULT

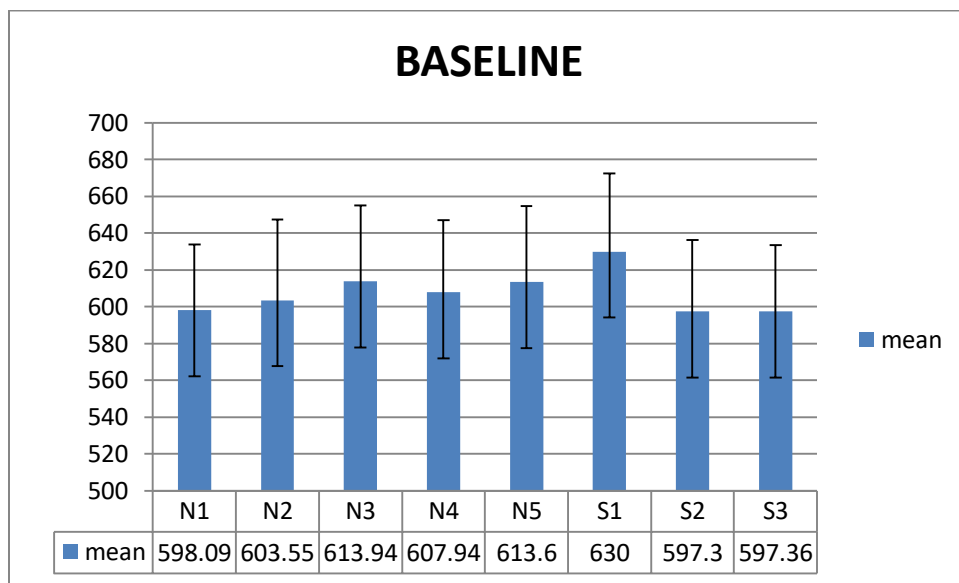
Data collection started from 14th February, 2019 till 14th march, 2019.

FLOW CHART



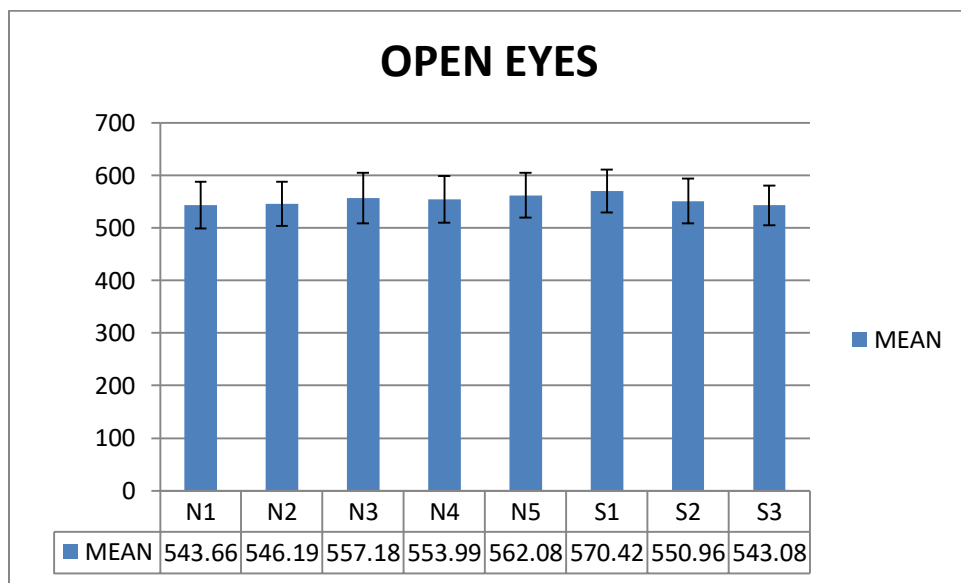
BASELINE

CONDITION	MEAN	SD
N1	598.085	35.584
N2	503.547	43.946
N3	613.942	40.9465
N4	607.942	38.9899
N5	613.599	41.1712
S1	629.996	42.4472
S2	597.305	38.838
S3	597.336	35.967



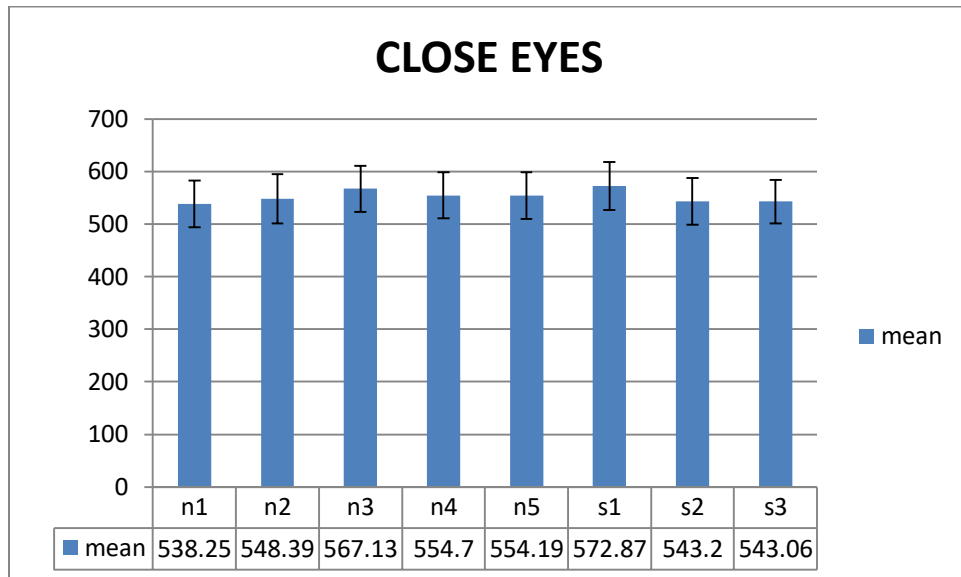
OPEN EYES

CONDITION	MEAN	SD
N1	543.6599	44.6157
N2	546.191	41.9576
N3	557.18	47.9698
N4	553.994	44.2738
N5	562.079	42.7952
S1	570.42	40.5054
S2	550.9575	42.646
S3	543.0755	37.6847



CLOSEYES

CONDITION	MEAN	SD
N1	538.25	44.8601
N2	548.3921	46.6967
N3	567.13	43.3106
N4	554.189	43.6341
N5	554.189	43.9417
S1	572.8749	45.4989
S2	543.195	44.7013
S3	543.0581	41.4947



The expression mean RT of all 5 noise condition and 3 spacing condition were submitted to repeated measure ANOVAs. Significance was set at $p < .05$ for the analysis. One way repeated measure ANOVA was run to find any significant change. Effect size was calculated using partial eta square (η^2_p). All the condition was found statically significant.

Further to find form where the difference is coming from and to follow it up further, post hoc analysis was done on all significant interactions with bonferroni correction. It was done for three conditions:

- 1) BASELINE AND CLOSE EYES
- 2) BASELINE AND OPEN EYES
- 3) OPEN EYES AND CLOSE EYES

Bonferroni correction was followed and new alpha value was found to be 0.016. ($p = 0.05/3$).

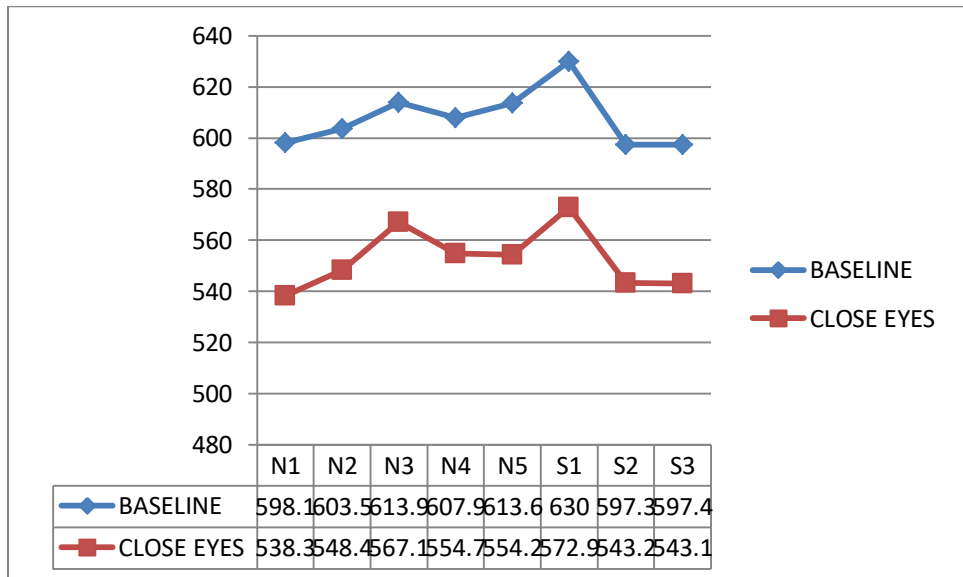
$p < 0.016$ = reject the null hypothesis

$p > 0.016$ = fail to reject the null hypothesis

BASELINE AND OPEN EYES

All noise and spacing condition of baseline was compared with all noise and spacing condition of open eyes and it was found to be statistically significant for all conditions. There was a significant improvement in the mean reaction time with yoga practice done with open eyes than compared to no yoga practice done.

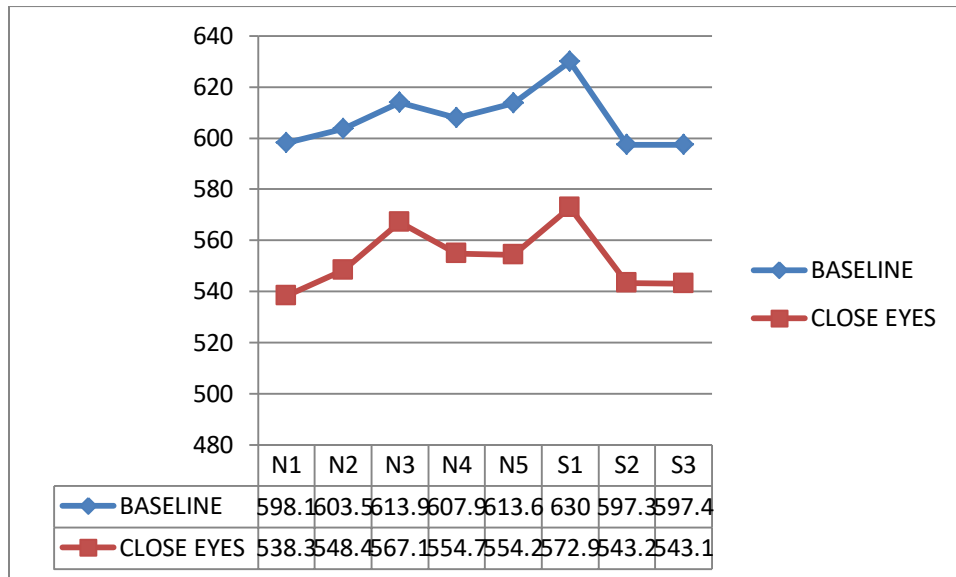
CONDITION	t VALUE	p VALUE	COHEN'S d
N1	5.57	0.001	1.03
N2	5.52	0.001	1.03
N3	5.51	0.001	1.02
N4	6.29	0.001	1.17
N5	5.63	0.001	1.04
S1	6.57	0.001	1.22
S2	5.10	0.001	0.95



BASELINE AND CLOSE EYES

All 5 noise condition of baseline and spacing of baseline were compared to all five noise condition of close eye and it was found to be statically significant for all conditions. There was improvement in the mean reaction time with yoga practice compared to no yoga practice.

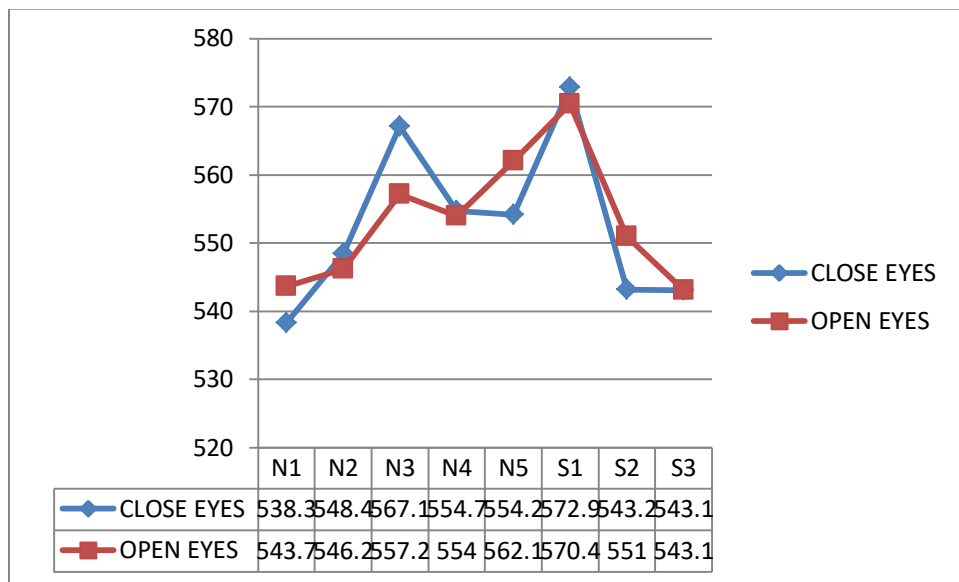
CONDITION	t VALUE	P VALUE	COHEN'S d
N1	8.06	0.001	1.50
N2	6.90	0.001	1.28
N3	5.14	0.001	0.95
N4	7.50	0.001	1.39
N5	9.19	0.001	1.71
S1	7.12	0.001	1.32
S2	8.14	0.001	1.51
S3	8.27	0.001	1.54



OPEN EYES AND CLOSE EYES

All 5 noise condition and spacing condition of open eyes was compared with all noise conditions and spacing condition of close eyes. All the variables were found insignificant.

CONDITION	t VALUE	P VALUE	COHEN'S d
N1	0.57	.572	0.11
N2	-0.22	.830	-0.04
N3	-0.91	.373	-0.17
N4	-0.07	.942	-0.01
N5	0.84	.409	0.16
S1	-0.27	.788	-0.05
S2	0.82	.418	0.15
S3	0.00	.998	0.01



NOISE IDENTICAL TO THE TARGET (N1) :

The response time will be the shortest when the target is flanked with the noise letter same as the target letter. When eyes close, eyes open and baseline condition are compared for noise condition 1, the result (figure 1) shows that the reaction time is the shortest in the eye closed condition with mean and SD (58.25 ± 44.8601).

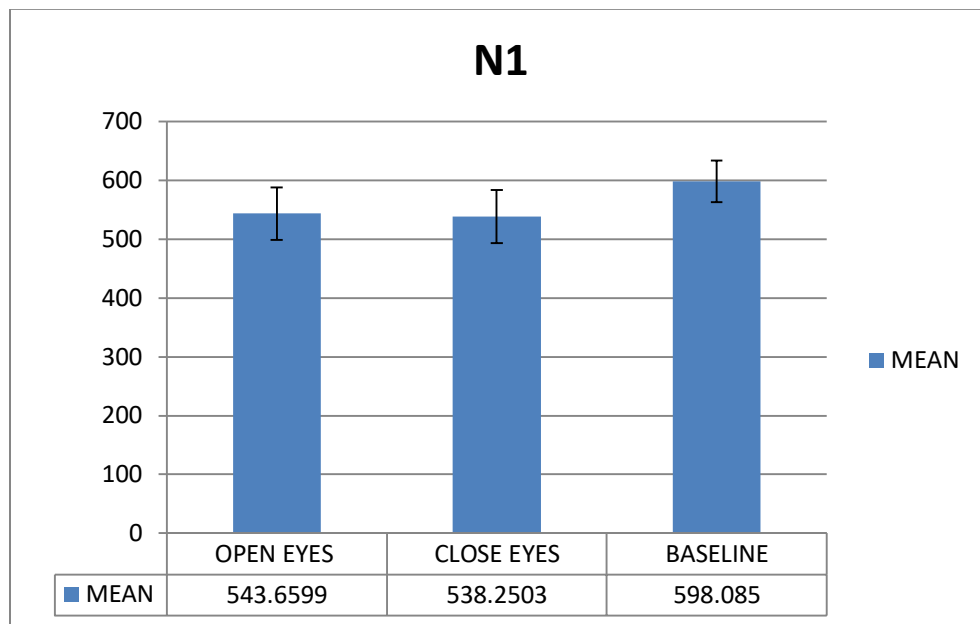


Figure 1

NOISE RESPONSE COMPATIBLE (N2):

The target letter is flanked with the noise letter of the same response set; the latency will be slow according to Eriksen and Schultz.

On comparing eyes open, eye closed and baseline condition, the result (figure 2) showed that the reaction time was the least when eyes was open with mean and SD (546.191 ± 41.9576).

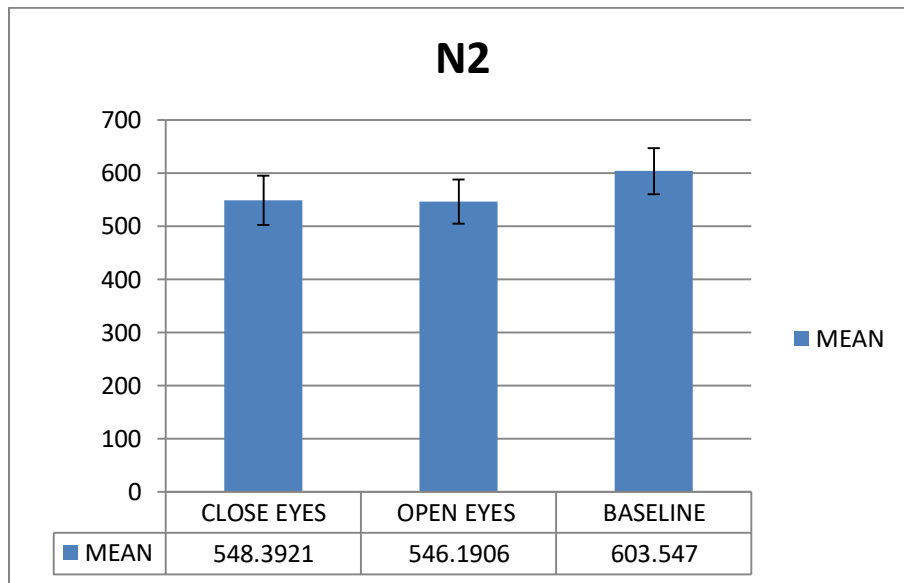


Figure 2

NOISE RESPONSE INCOMPATIBLE (N3):

The latency will be the longest when target letter is flanked by the noise from the opposite target set because the letter is competed not only for internal recognition but also for lever movement. On comparing open eyes, close eyes and baseline condition the result (figure 3) showed that the response time was less for open eyes condition with mean and SD (557.18 ± 47.9698).

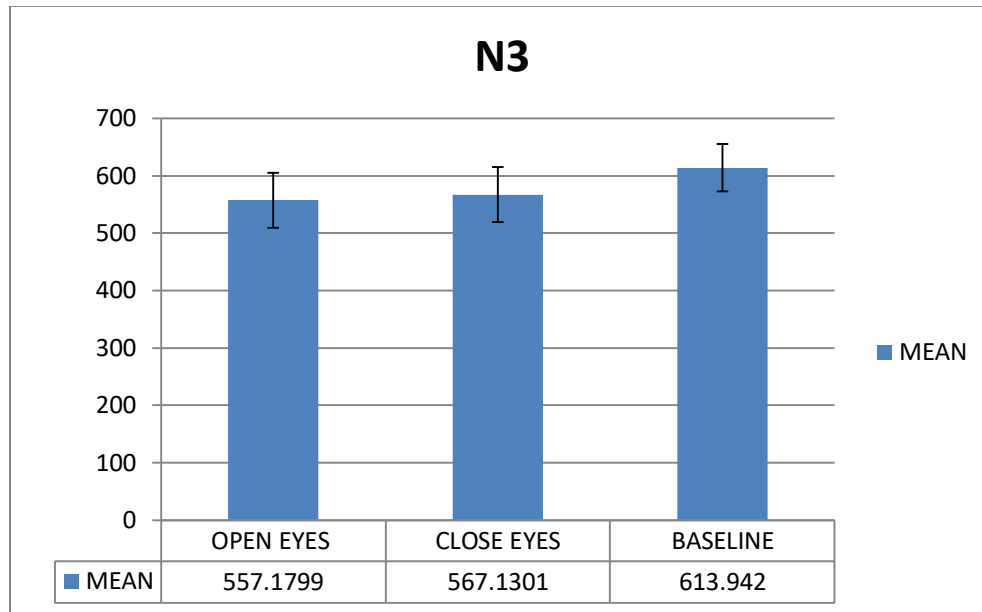


Figure 3

NOISE SIMILAR TO TARGET SET (N4):

The latency will be slow for the condition noise similar to target set because of slowed target recognition. When open eyes, closed eyes and baseline condition are compared, the result (Figure 4) showed that open eyes condition showed less reaction time with mean and SD (553.9937 ± 44.2738).

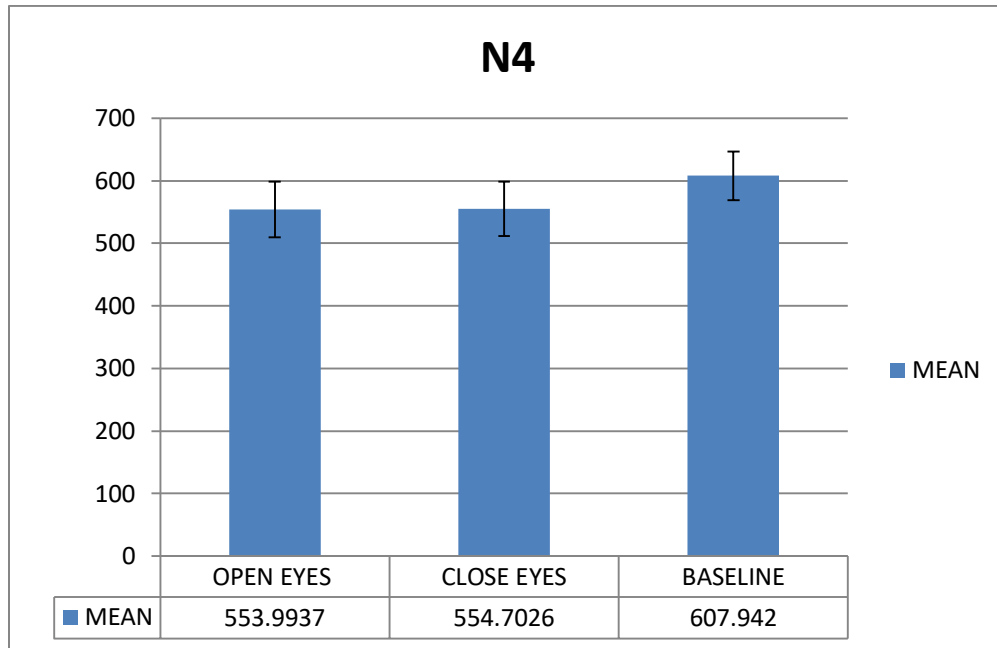


Figure 4

NOISE DISSIMILAR TO THE TARGET (N5) :

The latency will be shorter compared to noise similar to the target since, letter recognition will be faster. When open eyes, close eyes and baseline condition are compared for noise dissimilar to the target, the result (figure 5) showed that there was less reaction time for closed eyes condition.

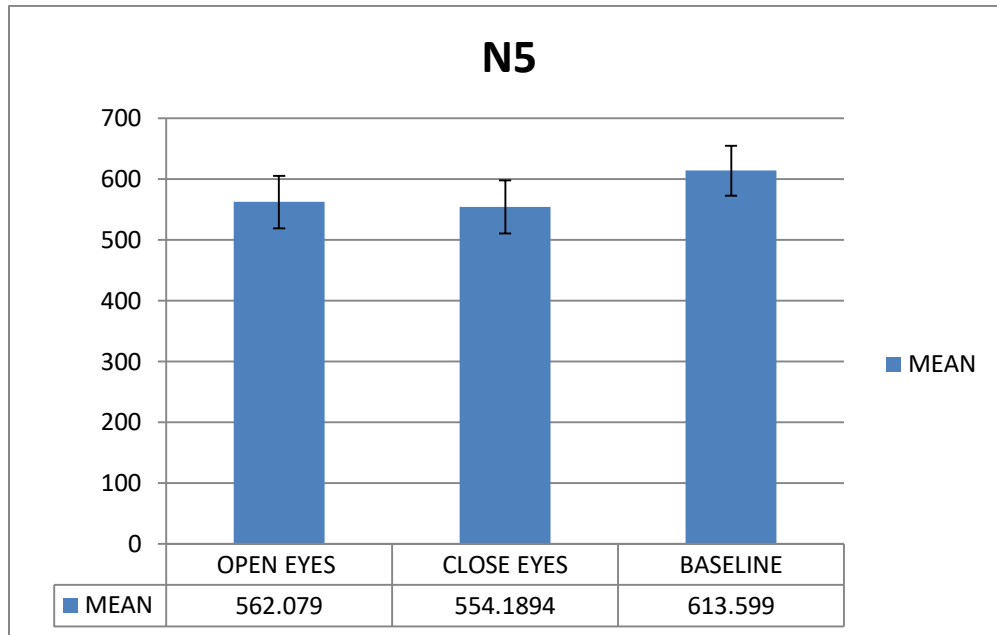


Figure 5

SPACING CONDITION OF 0.06 DEGREE (S1):

At .06 degree of spacing between the noise and the target letter, greater time is required for processing information since target and noise are very close to each other. When open eyes, close eyes and baseline condition are compared, the result showed that there is less reaction time required for open eyes condition with mean and SD (570.4197 ± 40.5054).

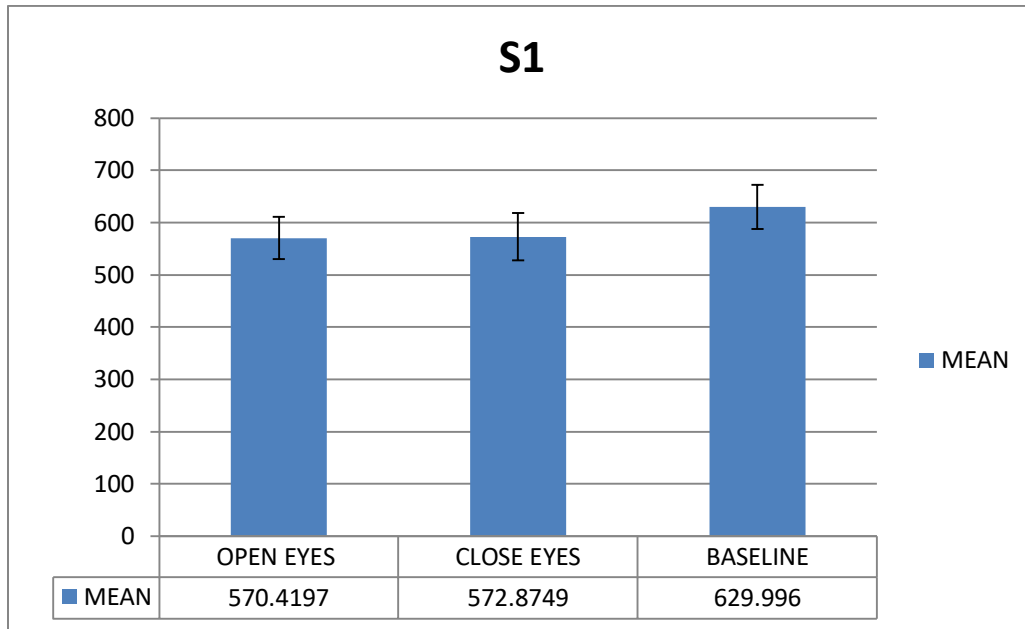


Figure 6

SPACING OF 0.5 DEGREE (S2) :

The location of the target and the noise letter will be more discriminable but the reaction time will be less than 0.06 degree of spacing. When eyes open, eyes closed and baseline condition are compared, the result (figure 7) shows less reaction for close eyes condition with mean (550.9575 ± 42.646).

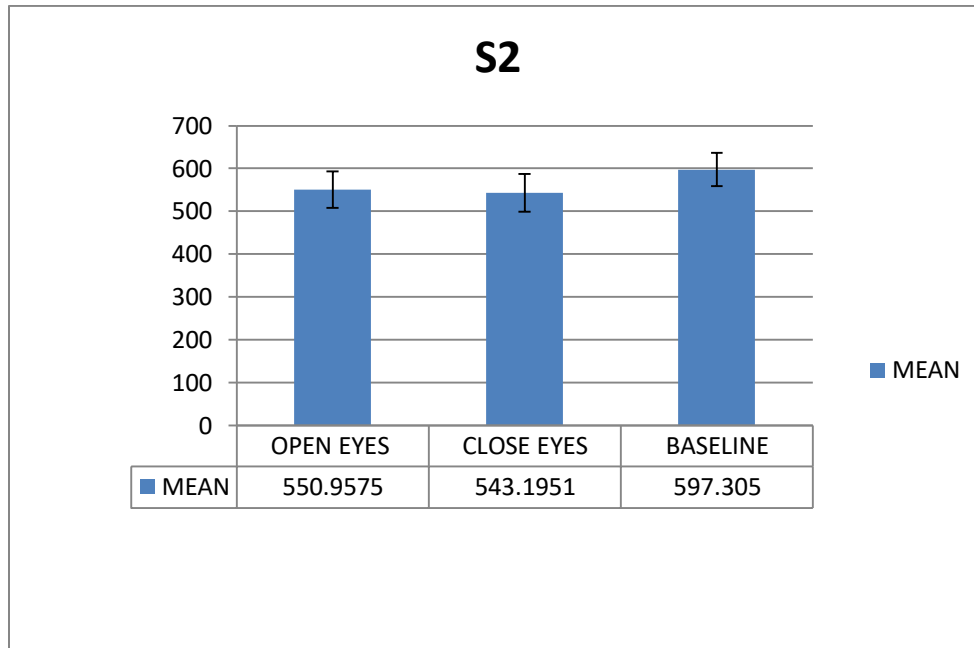


Figure 7

SPACING OF 0.1 DEGREE (S3) :

The target letter can be identified and can be discriminated from the noise letter with ease. The reaction will be least for the spacing condition 3 because of the distance the noise letter and target are more. Baseline, open eyes and closed eyes were compared and the result (figure 8) was that the reaction time was almost same for open eyes and close eyes but it was less for close eyes condition with mean and SD (5543.0581 ± 42.4947)

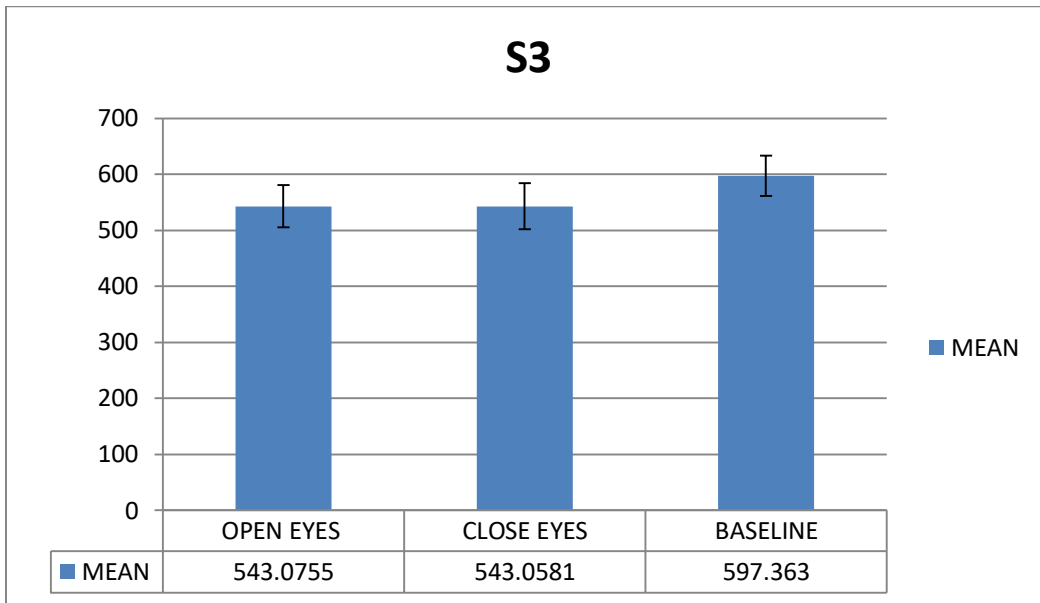


Figure 8

CHAPTER 7

DISCUSSION

In a study conducted by (Madanmohan et al., 1992) had a sample size of 27 student volunteers who were given yoga, pranayama training for 12 weeks. The study was done to study the effect of yoga practice on visual and auditory reaction time(RT), maximum expiratory pressure, hand grip strength, maximum inspiration pressure, breath holding. Single group pre-post study was done and it showed that there was a significant ($p < 0.001$) decrease in the visual RT (from 270 ± 6.20 (SE) to 224 ± 5.76 ms) as well as auditory RT (from 194.18 ± 6.00 to 157.33 ± 4.85 ms). Also all the other variables showed positive result. Hence, 12 week of yoga training result in reduction in RT and improves respiratory pressure and breath holding time.

In a study (Malathi & Parulkar, 1989) was conducted to find the change in auditory and visual reaction time on 83 subjects who have never practiced yoga before. The subjects were randomized into two groups: Group A whose audio and visual reaction time was determined after 1 hour of practice and Group B whose auditory and visual reaction time was determined after 6 weeks of practice. Although both the groups showed a reduction in the RT but group B (VRT of 205.6 ± 8.79 to 178.36 ± 30.30 and ART of 178.60 ± 21.4 to 168.12 ± 19.8) showed a greater reduction ($p < 0.001$) in RT than compared to Group A (VRT of 182.67 ± 15.73 to 176.58 ± 23.58 and ART of 146.30 ± 11.20) with $p > 0.05$.

We conducted this study to see the change in Reaction Time in the yoga practice done with eyes open, eyes close and baseline effect on female subjects through Flanker task for all the three days visit of the subject to the lab. For this study the design was one way repeated measure ANOVA and post hoc analysis was tabulated. There was a significant change in all the five noise condition and all three spacing condition ($p < 0.001$).

Further to evaluate from where the change is coming from post hoc analysis with bonferroni correction was applied for three condition and those were baseline and eyes close, baseline and eyes open and eyes open and eyes close. The result showed that there was a significant change in baseline and eyes close ($p < 0.001$), baseline and eyes open ($p < 0.001$). The result found for open eyes and close eyes condition was not found to be significant.

The objective was to study the effect of yoga practice on reaction time, to analyze the significant difference in reaction when yoga practice is done with eyes open, close and baseline, to study the difference in reaction time of the eyes open, eyes close and baseline condition. The tools used for this practice were flanker task (a computer based test).

The data of the subject (30 females) were collected three times for all three conditions and was analysed to find the effect yoga practice done with open eyes, close eyes and baseline condition.

The finding was discussed with the reference of the hypothesis. Yoga practice has immediate effect on reaction time. The effect of open eyes and close eyes were nearly same for females. Hence, females have less control over noise management.

CHAPTER 8:

CONCLUSION

The study was aimed to find any difference in practicing asana with closed eyes, open eyes and baseline condition. The subjects participated in the study were 30 females. The present finding of the study showed that yoga have immediate effect on reaction time for both, eyes open and closed condition, from baseline condition with very high significant value ($p < 0.001$).

Further, open eyes and closed eyes and baseline were compared in all five noise condition and three spacing condition and the result was found that reaction time is more for the baseline condition but it significantly decrease for open eyes and close eyes. Whereas, open eyes and close eyes showed nearly same result. For noise same as target, noise dissimilar to target, 0.5 degree of spacing and 0.1 degree of spacing close eyes have less reaction time. For other four conditions, the reaction time was less for open eyes. Hence, females have less control over the noise management.

CHAPTER 9

9.1 STRENGTH OF THE STUDY

- This type of the study is useful to create awareness about the effect of yoga practice with eyes open, eyes close and baseline condition on reaction time among the female subject in the university.
- It shows a very high significant change in the value of RT.
- Multiple dimension approach of yoga practice module for reaction time from different ancient yoga scriptures.
- There were no dropouts

9.2 LIMITATION OF THE STUDY

- Sample size was small (n=30)
- Confounding variables couldn't be controlled.
- Only female subjects were recruited for the study

9.3 RECOMMENDATION

More sample size will help to find out the difference between eyes close, eyes open and baseline for all the noise condition clearly in this study.

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APPENDICES

APPENDIX-1

SIGNED INFORMED CONSENT FORM

Title of the project : “immediate effect of yoga practice done with eyes open, eyes close and baseline on reaction time with female subject.”

Investigator : Rishu, M,Sc candidate

Name of the guide : Dr. VikasRawat

Name of the participant: _____

Date and time : _____ and _____

ABOUT THE PROJECT:

In order to understand the effect of yoga practice done with open eyes, close eyes and baseline on reaction time.

First day, the student will do the flanker test without any intervention; second day student have to perform a set of 9 asana either with close eyes or open eyes (randomized) and perform the flanker task immediately. On students third visit they have to perform the same set of asana (if done with close eyes then with open eyes and vice versa) and perform the flanker task immediately.

Please note

- All the information obtained during the study will be kept confidential.
- You may withdraw from the study at any point unconditionally.

Thereby, I have understood the above and consent voluntarily to participate in the study.

Date: _____

Signature of the student

Predictor	df_{Num}	df_{Den}	<i>Epsilon</i>	SS_{Num}	SS_{Den}	<i>F</i>	<i>p</i>	η^2_g
(Intercept)	1.00	28.00		27283045. 99	82030.97	9312.65	<.001	.99
N1	1.82	50.95	0.91	63525.08	65063.25	27.34	.000	.30
(Intercept)	1.00	28.00		27875233. 84	88510.58	8818.23	.000	.99
N2	1.83	51.30	0.92	61254.98	74277.95	23.09	.000	.27
(Intercept)	1.00	28.00		29208035. 60	80028.93	10219.12	.000	.99
N3	1.91	53.57	0.96	53286.14	83869.70	17.79	.000	.25
(Intercept)	1.00	28.00		28480657. 11	91849.72	8682.21	.000	.99
N4	1.78	49.76	0.89	55193.54	58911.19	26.23	.000	.27
(Intercept)	1.00	28.00		28926944. 07	94875.84	8536.99	.000	.99
N5	1.70	47.73	0.85	60379.44	57930.73	29.18	.000	.28
(Intercept)	1.00	28.00		30397402. 27	92481.92	9203.17	.000	.99
S1	1.95	54.68	0.98	65908.61	61871.31	29.83	.000	.30
(Intercept)	1.00	28.00		27656619. 90	90632.00	8544.28	.000	.99
S2	1.74	48.61	0.87	49650.61	58476.00	23.77	.000	.25
(Intercept)	1.00	28.00		27396893. 18	74467.63	10301.29	.000	1.00

MyTitle

APPENDIX - 2

RAW DATA

id	base_n1	base_n2	base_n3	base_n4	base_n5	base_s1	base_s2	base_s3
108	587.7777778	584.671875	623.09375	589.162963	596.7846154	613.8831169	583.8627451	587.7651007
109	656.359375	643.4925373	651.4814815	675.2654867	665.75	682	643.9387755	661.9032258
103	599.6428571	652	634.3396226	632.1949153	640.9304348	642.4328358	639.2910448	618.4701493
113	561.9857143	562.4027778	581.5147059	562.2661871	574.9637681	584.9006211	550.4417178	570.4539877
116	543.1076923	560.7352941	575.6716418	578.751938	559.124031	595.7094595	551.9542484	548.8789809
117	607.2539683	634.015625	626.5322581	613.8787879	613.9603175	638.0921053	594.1180556	619.384106
118	623.46875	616.7878788	606.0793651	629.984375	616.372093	654.316129	609.1946309	594.2054795
119	639.9	639.7910448	597.5438596	622.616	622.4786325	630.9407407	622.5135135	620.0559441
121	633.3166667	638.5901639	630.8305085	623.664	643.023622	658.2937063	620.9652778	622.337931
122	607.1060606	622.6060606	677.245614	631.5934959	642.0866142	676.8239437	619.8851351	611.6979866
123	601.2075472	570.7966102	578.6031746	577.7345133	591.3859649	590.1285714	582.0451128	578.7984496
126	563.3134328	572.8285714	577.3846154	559.1911765	578.530303	591.3636364	559.2955975	559.1592357
127	536.1833333	542.8507463	548.2833333	553.4108527	573.0546875	581.5174825	549.5734266	534.3924051
141	591.21875	574.3030303	590.9242424	609.2781955	629.2755906	625.6842105	589.0653595	599.0993377
142	623.1692308	649.5797101	658.8484848	644.3507463	643.1603053	689.8410596	618.5660377	625.0967742
143	573.5606061	583.6119403	579.1111111	592.5354331	584.6984127	595.4437086	584.9863946	572.5827815
144	611.0307692	596.4153846	589.9047619	621.9186992	588.9212598	624.777027	587.7241379	595
145	642.9032258	649.0615385	659.8852459	651.648	656.7190083	674.8380282	640.3333333	643.2068966
146	661.9558824	727.8709677	710.65	725.1724138	749.8191489	743.5714286	717	696.1416667
147	606.4754098	628.3148148	671.0408163	625.5288462	618.59	664.8130081	613.9344262	602.0081301
148	563.1052632	537.625	544.4117647	565.5882353	594.1818182	548.4210526	549.2051282	598.452381
149	567.8656716	548.2835821	589.2741935	560.8787879	561.5461538	582.1677852	556.4117647	554.3589744
150	540.4714286	556.5074627	587.6056338	565.8978102	551.2773723	595.225	547.1118012	537.7080745
156	566.4354839	569.3387097	627.5932203	585.0725806	602.8099174	603.0437956	585.4295302	585.1338028
157	646.1311475	619.9846154	664.7142857	629.0390625	649.53125	661.3133333	641.4868421	619.1888112

162	626.375	627.625	648.6129032	629.4838909	646.7903226	665.414966	625.6827586	617.7260274
165	584.0333333	629.2272727	588.4259259	579.1157025	605.1271186	610.8194444	583.5555556	593.4714286
166	569.4047619	574.6444444	585.45	583.752809	574.4117647	606.4257426	562.5257732	564.631068
168	609.7076923	588.90625	599.2698413	606.5083333	619.078125	637.6758621	591.7533333	592.2206897

id	openeyes_n1	openeyes_n2	openeyes_n3	openeyes_n4	openeyes_n5	openeyes_s1	openeyes_s2	openeyes_s3
108	509.8253968	517.9	535.1774194	519.3106061	543.9140625	534.8571429	519.8724832	526.5704698
109	524.2093023	544.3333333	558.3589744	573.8387097	547.32	550.6526316	560.4642857	547
103	531.8611111	527.4166667	560.4788732	529.5833333	539.6944444	557.3952096	528.9047619	524.3869048
113	531.8611111	527.4166667	560.4788732	529.5833333	539.6944444	557.3952096	528.9047619	524.3869048
116	546.2878788	539.7014925	543.3623188	542.3088235	564.2391304	560.8553459	539.9411765	545.9695122
117	566.4714286	560.5074627	592.7352941	591.1785714	576.7883212	593.10625	584.5	560.7
118	536.6612903	538.71875	503.6551724	535.2845528	543.1788618	561.1357143	526.8965517	514.862069
119	621.40625	631.9384615	647.8870968	642.9534884	646.1832061	656.442953	628.7697368	634.82
121	495.1639344	496.7076923	516.5614036	516.8837209	511.9285714	533.0551724	503.5933333	491.4965035
122	628.0153846	621.5909091	656.2153846	633.762963	631.3712121	655.9096774	618.4379085	626.5290323
123	567.9365079	586.8461538	587.7741935	592.4758065	589.6178862	596.2535211	588.0965517	576.1
126	521.2028986	511.5285714	524.5151515	522.5151515	519.1642857	542.29375	510.1582278	507.3647799
127	544.3934426	560.6231884	587.6393443	577.5419847	559.1796875	591.3809524	557.7961783	551.1164384
141	513.59375	506.3731343	496.5357143	529.6528926	516.6806723	531.8059701	506.2857143	510.2054795
142	564.0447761	553.9016393	627.7301587	612.5891473	590.5079365	626.7876712	576.9793103	576.6516129
143	532.5079365	538.8484848	547.6393443	556.7709924	556.9022556	554.7619048	542.1666667	551.8980892
144	510.0833333	502.4328358	526.4920635	546.6766917	512.4285714	531.4256757	518.5586207	518.3910256
145	573.4852941	566.2173913	609.734375	589.4285714	589.6690141	596.2738854	590.8198758	572.6518987
146	633.2537313	614.6714286	636.238806	644.9296875	635.7984496	656.8866667	634.1528662	614.0064935
147	506.25	541.875	521.8596491	549.1009174	549.5	558.59375	539.9069767	514.0930233

148	553.1111111	560.9516129	554.3968254	548.531746	545.6141732	572.662069	539.1891892	541.3783784
149	562.7887324	585.6029412	614.7301587	586.6074074	590.0222222	613.3846154	585.35	564.1338462
150	494.2535211	522.7887324	536.0289855	513.3356643	528.0422535	533.2994012	513.0909091	511.3658537
156	530.6271186	544.0757576	550.7857143	533.6934307	539.28125	554.9139073	522.375	537.6821192
157	507.2807018	504.1724138	498.6071429	503.7288136	496.5740741	513.0671642	493.7424242	497.8931298
162	430.037037	467.3018868	484.4782609	476.2826087	635.7984496	531.4256757	472.8095238	493.7424242
165	621.40625	496.7076923	516.5614036	476.2826087	635.7984496	531.4256757	584.5	560.7
166	541.6451613	536.4375	557.9032258	544.3083333	552.969697	553.3426573	543.0671141	545.7297297
168	566.4714286	631.9384615	503.6551724	546.6766917	512.4285714	591.3809524	618.4379085	507.3647799

id	closeeyes_n1	closeeyes_n2	closeeyes_n3	closeeyes_n4	closeeyes_n5	closeeyes_s1	closeeyes_s2	closeeyes_s3
108	458.953125	488.5333333	498.3898305	501.5217391	493.9193548	497.6111111	487.375	486.4225352
109	509.6142857	553.3880597	531.5507246	545.1954887	554.5611511	546.5541401	533.4240506	545.595092
103	540.1044776	538	605.1964286	557.2	559.7868852	569.4275362	551.6304348	555.7971014
113	489.9857143	473.5833333	515.971831	484.4507042	497.4397163	510.652439	480.8433735	484.3072289
116	497.09375	507.2352941	516.7575758	520.7720588	495.9117647	524.4294872	501.0322581	498.1761006
117	584.9242424	619.1594203	615.328125	614.8880597	614.4885496	631.2026144	591.1935484	611.4871795
118	577.8253968	558.8970588	573.1515152	592.3030303	578.858209	592.9615385	563.3311258	579.6282051
119	564.1060606	581.9375	591.8833333	596.2824427	595.3308271	605.2133333	580.2281879	580.9290323
121	516.3970588	509.4366197	543.03125	534.8308824	526.5036496	551.8589744	517.0126582	513.1419753
122	561.4210526	564.8965517	620.9818182	587.0491803	582.8548387	601.705036	568.7536232	580.4892086
123	531.9032258	520.2698413	539.7962963	542.4297521	530.6779661	546.6056338	526.540146	528.0863309
126	482.5737705	509.8	516.8852459	507.0839695	514.4888889	529.2384106	489.3181818	504.8513514
127	563.1940299	558.9142857	601.6101695	569.237037	582.2424242	610.125	562.2884615	552.2580645
141	543.5142857	543.4328358	566.3230769	551.109375	555.4328358	578.7565789	550.3612903	528.4076433
142	587.8507463	583.9714286	586.7058824	579.8962963	582.2794118	633.8481013	560.5189873	555.7875

143	550.0289855	546.78125	593.9104478	555.4140625	567.8582677	581.9673203	553.3013699	552.0897436
144	505.8153846	520.4032258	543.8196721	519.5116279	527.6567164	546.46	513.0194805	510.6462585
145	561.2394366	555.9253731	568.7462687	573.9191176	580.6715328	584.427673	568.6772152	559.1987578
146	603.7887324	632.1343284	633.1060606	638.4782609	630.1037037	645.7770701	630.3641975	611.8670886
147	482.5737705	509.8	516.8852459	507.0839695	514.4888889	529.2384106	489.3181818	504.8513514
148	539.2428571	545.3225806	582.7096774	562.7703704	552.8931298	578.5359477	546	545.6644295
149	474.8636364	503.5757576	512	485.9318182	495.2857143	517.0533333	477.7861635	486.5923567
150	467.5915493	473.4366197	503.1111111	477.3566434	480.1223022	501.0424242	461.5481928	477.2545455
156	503.9558824	536.6231884	539.0327869	533.5968992	509.75	537.3907285	528.0129032	505.2941176
157	638.1714286	546.78125	648.6470588	642.9416058	636.3823529	669.6075949	643.5576923	627.8780488
162	569.6461538	577.1492537	605.6774194	591.8333333	602.3858268	613.8513514	589.4871795	570.8926174
165	563.6393443	567.7647059	594.15	581.4	557.9469697	581.7103448	566.6493506	567.4868421
166	551.5857143	547.8714286	556.4477612	549.0814815	538.9772727	571.2738854	538.490566	532.943038
168	587.6557377	592.2307692	624.9661017	582.8067227	612.1932773	624.8467153	582.5942029	590.6621622