

# **Effect of Cyclic Meditation on Job Stress Levels of Indian IT Professionals**

**Thesis submitted by**

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Towards the partial fulfilment of  
**DOCTOR OF PHILOSOPHY (YOGA)**  
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Under the Guidance of

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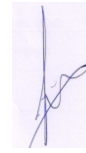


**SWAMI VIVEKANANDA YOGA ANUSANDHANA SAMSTHANA**  
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## DECLARATION

I hereby declare that this study was conducted by me at Swami Vivekananda Yoga Anusandhana Samsthana (S-VYASA), Bengaluru, under the guidance of Dr. Sony Kumari and Prof. K.B.Akhilesh, S-VYASA University, Bengaluru. I also declare that the subject matter of my thesis entitled EFFECT OF CYCLIC MEDITATION ON JOB STRESS LEVELS OF INDIAN IT PROFESSIONALS has not previously formed the basis of the award of any degree, diploma, associate-ship, fellowship or similar titles.

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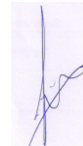
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Date:

Place:

Pammi Sesa Srinivas

**STANDARD INTERNATIONAL TRANSLITERATION CODE USED TO  
TRANSLITERATE SANSKRIT WORDS**

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

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# ABSTRACT

## Introduction:-

Over the last two decades, Information Technology (IT) based industry in India has transitioned from million dollar industry to billion dollar industry. This industry grew from USD 100 million in the financial year 1992 to USD 108 billion in the year 2013 as per NASSCOM 2013 annual report. Over 100 million English speaking population, computer awareness to students in early college times, favorable government policies and low cost geographical advantage, are some of the reasons for this growth. Majority of revenues for Indian economy in private sector are driven by IT sector as per NASSCOM 2014 annual report. As most of Indian IT professionals work for IT based global service providers, they need to tune to the customer demands in meeting aggressive targets as well as to adjust to the customer country time zones. One cannot ignore “short-term contract” nature of IT job, causing Job Anxiety for Indian IT professionals. Due to the characteristics of job performed by IT professionals, they are often getting victims of Job stress conditions. Job Anxiety is a major component in driving the Job stress for Indian IT professionals. This has taken a huge toll on the physical and mental health levels of IT professionals. Acid peptic diseases, excessive alcoholism, asthma, diabetes, tension head-ache and hypertension are some of the diseases experienced by IT professionals. In a cross-sectional study performed on 1071 professionals on IT and ITES professionals working in Bangalore, alarming facts were found: 31% of IT/ITES professionals are hypertensive with approximately 5% having malignant levels of hypertension (Giridhara babu et. al, 2013). This study further suggests that hypertension in IT/ITES professionals occurs a decade earlier compared to the rest of India and two decades earlier compared to developed countries. World Health Organisation along with International Labor Organisation in a 2000 year report, also warned that the stress

originating from work conditions is going to be 21<sup>st</sup> century health epidemic for working professionals and stressed the need to work on measures to improve the mental health conditions for working professionals. Research interest on emotional intelligence at workplace is slowly increasing as it may influence the coping techniques adopted by working individuals when stressful conditions were encountered. Though studies performed on Job conditions impact on Indian IT professionals, are slowly increasing in the field of research, there are little studies performed on Job Anxiety and Emotional quotient of Indian IT professionals. Yoga is the ancient Indian science, which can bring positive health levels to individuals by increasing self-awareness and mindfulness (HR Nagendra, 2007). One may improve emotional intelligence with increased self-awareness and mindfulness (Hasmukh Adia et al., 2010). In the current experimental study, effect of Cyclic meditation (a yoga based practice), on Job anxiety, emotional intelligence and perceived stress of Indian IT professionals was measured using appropriate standardized questionnaires. The target of the study is to measure the effect of cyclic meditation on Job stress levels of Indian IT professionals. Current study also targets to measure the correlation between Job Anxiety, Emotional Intelligence and perceived stress among Indian IT professionals.

**An understanding about stress from the ancient Indian Literature Standpoint:-**

Western thought process was built up on matter based paradigm, whereas ancient Indian thought process was built up on consciousness based paradigm ( Nagendra, 2003). Ancient Indian literature consisting of Upanishads, srimad Bhagavad-Gita, Patanjali Yoga sutra etc., provided holistic understanding about personality and health of human beings. Tattiriya Upanishad provides holistic understanding about existence of five layer body for each life force and also mentions that *Monomaya kosha* ( the mental body) hosts emotions, likes and dislikes for the life force. Patanjali Yoga sutra provides understanding about five fold modifications of the mind which can return pain or pleasure. Srimad Bhagavad-Gita, details

on the consequences of attached thinking to any object which eventually leads to destruction and health loss. Patanjali Yoga sutras provide understanding about how yoga can help to still the modifications of the mind. Modifications of the mind if not controlled would lead to imbalance to the mental body. As per Yoga philosophy, stress is defined as 'imbalance' in any layer of the body. Mandukya Upanishad in one of its verses provides methods on how to reach equilibrium state of the mind which can make the mind free from imbalances i.e stress and thereby helping the man-kind to reach perfect state of 'mental-health'. Cyclic Meditation, a yoga based practice was developed by Swami Vivekanda Yoga Anusandhana Samstahana on the principles of Mandukya Upanishad.

### **Scientific Literature Survey:-**

Step wise survey was performed on the relevant modern scientific literature about Job stress and its consequences. As a first step, early literature available on stress and job stress was reviewed including General Adaptation Syndrome defined by Seyle(1976). Popular models like Demand- control model, Person – Environment model and high effort –low reward model were reviewed to understand the causes of mental strain due to job stress. Literature on various factors like personality, organisation and Job anxiety were reviewed to understand their effect on perceived job stress for an individual. Outcomes and consequences of Job stress from early research were also reviewed. Relevant Literature on coping and emotional intelligence was also reviewed. Literature review on emotional intelligence was also performed to understand the significance of managing own/other's emotions at workplace for working professionals. This is followed by extensive review of available literature on Indian IT professionals' job stress conditions. In a study performed on professional stress, depression and alcohol use among Indian software professionals, it was observed that the software employees are professionally stressed due to job conditions and are at 10 times higher risk for developing depression and also there is a significant increase in the incidence

of psychiatric disorders ( Darshan et al., 2013). Relevant literature review on the effect of yoga based life style was carried out which helped to understand that yoga based life style results in, reduction in systolic and diastolic Blood Pressure. It was also understood that cyclic meditation a yoga based practice helps to ignite dominance of parasympathetic activity and there-by helping to reach homeostasis conditions after encountered stressful situations. Based on the literature review done, a theoretical model was developed to understand that effect of cyclic meditation practice on job stress levels of Indian IT professionals.

**Aim: -**

The aim was to study the effect of cyclic meditation on Job stress levels of Indian IT professionals.

**Objectives:-**

- To evaluate the effect of cyclic meditation on emotional quotient of IT professionals.
- To evaluate the effect of cyclic meditation on Job Anxiety levels of IT professionals.
- To evaluate the effect of cyclic meditation on Perceived stress (Job stress) of IT professionals.
- To evaluate the relationship between emotional quotient, job anxiety and perceived stress for professionals working in Indian Information Technology Industry

**Materials and Methods:-**

**Participants: -** Participants are IT professionals working in Bengaluru, India office of, one of the Multi National Company. Company Name is Infineon India Technologies India Pvt Ltd, having its office in EPIP Zone Phase-II, white field, Bangalore. This company has head-quarters in Munich, Germany and has research and development centers in Austria, U.K,

Singapore, Germany and India. The study is performed on two groups namely control group and Intervention group ( i.e yoga group). Yoga group consists of 48 participants and Control group consists of 48 participants. Participants have age range between 24 years to 49 years with an average of 31 years in intervention group and 32 years in control group.

**Research Design:** - This is a pre-post study design. Quantitative approach was adopted for obtaining the data during pre-post stages of the design. Voluntary written feedback shared by few participants of Yoga group at the end of study period was also used to check the converge of the results obtained from yoga group using quantitative measures.

**Intervention:** - Cyclic Meditation Practice is used as the intervention for the yoga group. Cyclic (CM) meditation is a unique practice which incorporates mind and body movements with awareness. Cyclic meditation is a technique which combines "stimulating" and "relaxing" practices, based on a statement in ancient yoga texts ( Mandukya Upanishad), suggesting that such a combination may be especially helpful to reach a state of mental equilibrium. Intervention is of 35 minute duration for each session. Yoga group was supplied with a session of cyclic meditation practice on a working day. Current study was carried between 15<sup>th</sup> septemeber2014 to 28<sup>th</sup> November 2014, making effective study period is of 8 weeks duration. Control group was requested to practice physical exercises like walking of equal duration for the duration of the study period.

**Assessment Tools:** - Below three assessment tools were used.

- Emotional quotient questionnaire (EQ test) developed by Dr. N.K. Chada and Dr Dalip Singh measuring psychological dimensions such as Emotional Sensitivity, Emotional Maturity, Emotional competence and Emotional Quotient, was used.

- The Perceived Stress Scale (PSS) developed by Cohen et al. (1988) was used to measure the perceived stress. It is a measure of the degree to which situations in one's life are appraised as stressful.
- Job Anxiety Scale (JAS) questionnaire developed by A.K.Srivatsava was used to measure the Job Anxiety for this study.

### **Data Extraction and Analysis**

- All statistical analyses were performed using the Statistical Package for Social Sciences, SPSS (version 16.0). To see the significance of the change within the group wilconson signed rank test used where as to check the significance between the groups, Man-whitney test was used. Pearson correlation test was used to observe possible correlations between Emotional Quotient, Job anxiety score and perceived stress scores on baseline data of both yoga and control groups together. For Qualitative approach of collecting participant experiences due to intervention, interested participants were requested to document their experiences voluntarily.

### **Results and Discussion**

It was observed that after 8 work week intervention of cyclic meditation,

- Mean value of Emotional sensitivity in yoga group increased by 14.78%, were as Emotional Maturity witnessed an increase of 12.88 %. Aggregate Emotional Quotient of intervention(i.e yoga) group increased by 15.03%. It was also observed that Perceived stress levels also decreased significantly in the intervention group. Changes in all components of Emotional quotient and Perceived stress were significant. ( $p < 0.01$ ).
- Mean value of Job anxiety levels as a whole recorded reduction in intervention group (19.51%). Mean value of Job security component recorded

a reduction of 21.61% where as Self-esteem concerns recorded a reduction of 24.11%. Changes in all sub-areas of job anxiety in yoga group were significant. ( $p < 0.01$ ).

- Based on correlation study results, it was observed that among Professionals working in Indian Information Technology Industry, there exists a relationship between Emotional Quotient, Job Anxiety and Perceived stress. It also indicated that Job Anxiety is negatively correlated with Emotional quotient and is positively correlated with perceived job stress.
- In the Qualitative approach of collecting participants experiences due to intervention, it was observed that participants from yoga group felt less-tensed and stressed at work compared to before the intervention period. Participants were able to handle the work related meeting efficiently and are able to make constructive arguments with team mates. Some participants also experienced improvement in problem solving skills.

### **Limitations: -**

Limitations of current study were elaborated which could be used as reference for future scope of similar studies on application of Yoga based practices on IT professionals.

## **Conclusion: -**

The current study contributes to literature in several ways. Till date, there was no study performed on alleviating Job stress levels of Indian IT professionals using yoga based practices. Results obtained are encouraging and indicate that Cyclic Meditation helps to increase the emotional quotient, decrease Job Anxiety, thereby helping to alleviate Job stress levels for IT professionals. Current study, by providing initial insights into usefulness of yoga based practices for Indian IT professionals helps to open gates for future research on the application of yoga to Indian IT professionals.

## **Suggestions for future studies:-**

It was suggested that, future studies on the use of Yoga based practices on Job performance and Job satisfaction could be carried out. It was also suggested that current study could be performed with mix of professionals from different sectors of IT industry to deliver more generalized results to IT industry on the effect of Yoga practices in altering perceived Job stress. As part of this current study, an integrated model on understanding impact of Job stress was advised. It was suggested that this integrated model to be validated under different industry set-ups using yoga based practices as mind nurturing practices

# **CHAPTER 1**

## **1. INTRODUCTION**

In this chapter, topics like overview on Indian IT Industry, outlook for Indian IT industry for the year 2020 and beyond, major work characteristics in Indian IT industry, possible impact of work characteristics on Indian IT Professionals and World Health organisation insights on mental health & work were discussed in detail. Potential causes for Job stress as identified by UK Trades Union Congress were also elaborated. It was also examined on whether symptoms of illness due to job stress conditions in Indian IT professionals were already visible. Yoga being ancient Indian science for mental and physical well-being of mankind, brief understanding about yoga practices was also provided. Rational for this study was provided, highlighting the need to study effects of Yoga based practices on Job stress levels of Indian IT professionals.

### **1.1 An overview on Indian IT Industry**

Over the past decades, Information Technology (IT) industry in India has been a story of unparalleled growth. With over 100 million English speaking educated population in India, and with favorable government policies, it was easy initially for Indian IT industry to align with businesses in United States in late 1990s (Saxenian, 2004). The success of Indian IT professionals in the United States was also a significant factor in the development of IT industry sector in India in its early stages. The stream of US-educated Indian professionals who joined IT industry in silicon valley and met technical, managerial and entrepreneurial success, created positive image of the capabilities of Indian IT professionals. According to Saxenian (2004), Indians headed around 970 Silicon Valley technology companies, accounting for \$50 billion (USD) in sales and nearly 26,000 jobs by the year 2000. The

Indian diaspora also expedited body shopping, by show casing the talents of Indian IT professionals and fostering relations between IT industry firms in United States and India. Some have returned back to India to work for multi nationals which have established Indian subsidiaries, while others have launched firms in India. A few straddle both countries, able to speed the transfer of know-how about emerging markets and technologies, and willing to nurture long term relationship across borders. Indian based technologists and entrepreneurs also forecasted the wave of IT industry growth about to sweep India, just in time and worked hard for establishment and growth of Indian IT industry. With momentum gained from US, Indian IT industry also proliferated into businesses of UK, Continental Europe, Latin America and Asia pacific gradually, fueling its growth rate. According to NASSCOM 2013 annual report on *Indian IT industry*, India's cost competitiveness in providing IT services, which is approximately 3-4 times cheaper than the US, continues to be its unique selling proposition (USP) in the global sourcing market. The IT industry has not only transformed India's image on the global platform, but has also fuelled economic growth by energising the higher education sector especially in engineering and computer science (Kumar Nagesh, 2001).

**Supporting role by Indian government:-** According to Bhatnagar Subhash (2006), although the story of Indian IT industry is a story of private initiative, the Indian government played a significant role with public funding of a large, well trained pool of engineers and management personnel who could forge the Indian IT industry into a world class treasure in a short time. Early government support came from few visionary civil servants who championed the cause and helped the industry find its way through a labyrinth of regulations, making exemptions where ever possible. Later policies encouraged local firms and encouraged direct foreign investments. Government targeted IT exports, once the market identified the industry potential and created necessary institutions. As early as 1972, the

Department Of Electronics introduced a policy of duty free imports of computer- systems, if the importers would promise to export software and services worth twice the value of imported computers within a specified time. This policy helped a number of leading companies in its inception stage. In the 1980s the department gave Information Technology based developers a further boost by initiating friendly policy for IT based services/ products. It formed IT based products/ services export council and liberalized import rules for materials needed for the industry (Kumar Nagesh, 2001). In the late 1990s, the government created major task forces comprising chief executives of leading Indian IT companies to study the current and future needs of Indian IT industry sector and recommend actions and acted on most of the recommendations. The prime minister's task force on IT, formed on May 22, 1998 submitted 108 recommendations in an IT action plan aimed at increasing IT based exports to US\$ 50 billion by 2008 and creating one million new jobs over five years (Office of the Prime Minister, Government of India, 1999).

Some of the Recommendations also included

Blanket approval for overseas acquisitions from export earnings.

Zero duty on all IT products by 2002 by advancing International Trade Administration (ITA) schedules.

Broadening definition of Software to include entire range of IT based products and services as per WTO-ITA norms

The Department of Electronics also became ministry of communication and Information Technology .This was followed by IT Act to address large number of issues faced by IT industry. With the beginning of economic reforms in the early 1990s, efforts were made to attract foreign as well as domestic investments (Bhatnagar Subhash, 2006). Foreign

companies were permitted to establish fully owned subsidiaries in the electronics export processing zones. Within the ministry of Finance, there was greater recognition of India's comparative advantage in the sector, as it abolished entry barriers for foreign companies, made fast, low-cost data connection facilities, reduced and rationalized duties, taxes and tariffs. The Reserve Bank of India also did not lag in promoting IT industry. According to NASSCOM annual report 2002, The Reserve Bank of India also adopted several measures to support IT industry .Some of them are

Simplification of the filing of the Software Export Declaration Form

Acquisition of overseas parent company shares by the employees of Indian company

Companies whose software sales were over 80 percent could grant stock options to non-resident and permanent (resident employees

Foreign exchange could be freely remitted for buying services

Companies which executed contracts in "computer Software" abroad could use income up to 70 percent of the contract value to meet contracted related expenses.

Ministry of Human Resource Department of central government of India, recognizing the growing need of manpower in IT industry took following actions in early 1990s (Bhatnagar Subhash, 2006)

Create and Expand Computer Science Departments in Existing Engineering colleges.

Eased policies in order to enable private sectors to open up Educational institutions without public funding. A large number of engineering colleges were opened in the private sector.

Introduced quality control systems for engineering colleges and other IT training institutions, such as the All India Council for Technical Education and accreditation system run by professional bodies such as the computer society of India to monitor private training institutions.

Encouraged the private sector to open training institutions to make talented pool available for IT industry.

**Software Technology Parks (STPs):-** According to Bhatnagar Subhash (2006), creation of National Association of Services and Software Companies (NASSCOM) in 1988 and later establishments of STPs in later 1990s represented a fundamental approach to policy making for the software industry .An important institutional intervention was the establishment of STPs to provide infrastructure to provide companies to export IT based services and products. One of the STPs' key contributions is providing high-speed data communication services to IT industry. The Software Technology Parks of India (STPI) also has international gate ways. For the last mile users can connect through point-to-point and point-to-multipoint microwave links, and terrestrial fibre/copper cables were used, where feasible.

**The role of NASSCOM:** - The National Association of Services and Software Companies (NASSCOM), India's software industry association, was founded in 1988 and has been a vocal and potent force in lobby for policy reforms, including rules limiting access to capital markets, issuance of stock options, easing rules on foreign currency transactions and improving telecom infrastructure. NASSCOM played a significant role in establishing a brand image for India in the global IT service/product markets by participating in global trade fairs and events and organising learning events in India that feature prominent speakers from major markets (NASSCOM Annual report, 2004). Through its annual reports, NASSCOM has become most reliable source of data and information about the Indian IT Industry. As per

NASSCOM Annual report 2013, this industry is the largest private sector employer in India by providing direct employment to 3.5 million people and indirect employment to 9.5 million people as of 2013. This industry also played a significant role in improving Indian economy figures by capturing 23-25 % of its export share. As per NASSCOM , 2013 annual report on Information Technology enabled industry market, revenue grew from USD 100 million in the financial year 1992 to USD 108 billion in the financial year 2013.

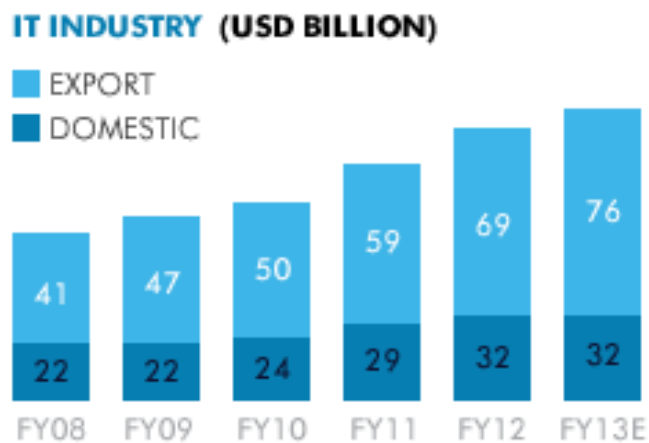


Figure 1.1:- Market Size of IT industry in India (Source: - NASSCOM, Annual Report 2013)  
 The Indian IT and ITeS industry is divided into four major segments namely IT services, business process management (BPM), software products & engineering services, and hardware. For further understanding on major IT segments, below popular definitions from Internet were provided for clarity purposes.

IT services: - IT services refers to the application of business and technical expertise to enable organizations in the creation, management and optimization of or access to information and business processes

Business process management: - Business process management (BPM) is the discipline of managing processes (rather than tasks) as the means for improving business performance outcomes and operational agility. Processes span

organizational boundaries linking people, information flows, systems and other assets to create and deliver value to customers and constituents.

Software products: - Merchandise consisting of a computer program that is offered for sale. Software products are virtually used in almost all of the industry, in today's technology driven world. Couple of the examples could be safety critical industry like automotive as well as entertainment industry like gaming.

Engineering services: - Engineering Services are a broad spectrum of consulting, engineering and analytical services to aid and support companies with the complex questions and issues that arise in today's global supply chain environment.

Hardware services/products: - Services and products relating to the machines, wiring, and other physical components of a computer or other electronic system.

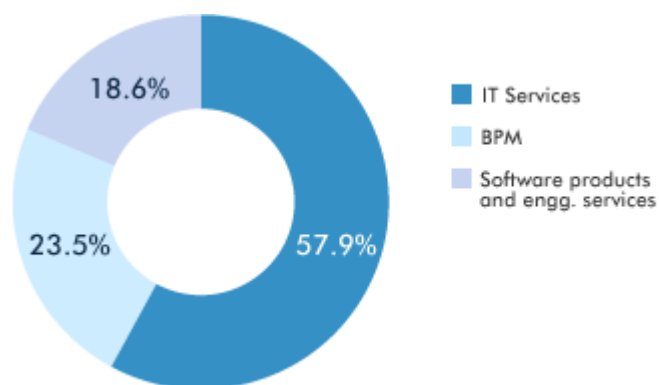


Figure 1.2 Sector wise break up of IT revenue(Source: NASSCOM Annual report, 2013)

According to NASSCOM Annual report 2013, IT services has 57.9% share of total revenues from IT industry, where as BPM has a share of 23.5% share . Software products , Engineering Services and Hardware have a share of 18.6 % .

**Outlook for IT and ITeS Industry:-** Sustained technology spending globally, and increasing GDP growth and spending in India are expected to be primary drivers of growth (Somesh K Mathur, 2005). According to NASSCOM annual report 2014, post year 2020, growth drivers in addition to traditional IT and BPO services large companies (in the Fortune 500) in US and EU will arise from Small and Medium Businesses (SMBs), public sector, healthcare, media, and utilities. A significant portion of the growth would be driven by markets in BRIC countries, APAC, Japan, and rest of the world. A shift would occur in terms of customer expectations, led by innovation, end-to end offerings, risk management, and compliance. It is expected that the ‘outsourcable’ market would expand from the current US \$ 500 billion to about US \$ 1.5 to 1.6 trillion by 2020. Sustained GDP growth, increasing public sector spends, and adoption of IT by industry would drive the domestic component of the market. It is also estimated that, this industry has a potential to provide 30 million employment opportunities by the year 2020. Given these factors, it is expected that the Indian IT and ITES Industry would record about US \$ 220 billion in exports and US \$ 60 billion domestically by 2022, totalling to about US \$ 260 billion growing at a Compound Annual Growth Rate (CAGR) of 12.8%.

## 1.2 Major characteristics of Job in the Indian IT Industry

Based on a study done by Carol Upadhya & Vasavi(2006) on “Work, culture and sociality in the Indian IT industry”, Job in the IT industry has five major characteristics, namely,

**Mobility:** IT Professionals are required to be highly mobile, circulating between India and ‘onsite’ as well as between jobs within India and abroad. The phenomenon of ‘virtual migration’ (offshore, online work) can be seen as a form of ‘immobile mobility’ in which labour moves without the body of the worker.

**Flexibility:** Because of the highly competitive and global nature of the IT industry, it requires a flexible workforce. Flexibility is reflected in the IT Industry labour market and in the emergence of new forms of employment, for instance in the extensive use of temporary contract labour and the high level of fluidity in the job market. Within companies as well, flexibility is maintained through ‘resource management’ systems such as ‘the bench’.

**Individualisation:** The emergence of individualised employment relations is seen in the absence of collective identity among IT work force. The high level of attrition and the tendency to build careers by job-hopping are also symptoms of individualisation in the IT industry. This in turn is linked to the volatility of the global IT market, the consequent lack of job security, and the emergence of the ‘entrepreneurial employee’ who must constantly upgrade his or her skills in order to remain marketable.

**Culture adaptation:** - Another distinctive feature of work culture in the IT industry is the deployment of culture itself as a management tool and as a mechanism of control over labour. Through the discourse of culture that operates in the global IT labour market, Indian IT professionals are categorised in terms of their culturally specific

work habits, which are contrasted with those found in the West. Indian IT professionals are required to adapt their behaviour and attitudes to fit into the dominant model of 'global corporate IT work culture'.

**Time Zone adjustments:** - Most of the revenues of Indian IT industry come from IT services (57.69 %). Though domestic Indian IT market is continuously increasing in its size, majority of clients for Indian IT industry are still from United States, United Kingdom and Europe. In this web- connected world, time is the most precious thing for all the customers round the globe for IT professionals. This means Indian IT professionals need to continuously align to the customer country time-zones for quality delivery of projects taken up. As IT based projects are generally short-term, IT professionals may need to re-align to different time zones if they change to different country customer bases.

Though characteristics of work mentioned are referred to IT professionals, they are equally applicable to Indian urban professionals working in Hi-Tech industry.

### **1.3 Effect of Job characteristics on Indian IT Professionals**

According to Archana et al. (2011), job characteristics of Indian IT industry poses significant challenges on its professionals making them susceptible to job stress and burn out. In below section, effect of major Job characteristics on Indian IT professional would be reviewed briefly.

**Impact of Mobility:** - Mobility generated lot of domestic/overseas travel for Indian IT professionals. Though it generated lot of interest and curiosity for Indian IT professionals, as travel brings different thinkings closer, it also has impact on personal lives of IT professionals in the long run. Professionals who also have responsibility of raising kids/ taking care of elders continuously go through constant pressures to balance between work priorities and personal priorities. It is not uncommon these days, that life partners working in IT industry even delay having kids to be successful in this dynamic IT industry. Overall, continuous mobility may create disturbing scenarios for IT professionals, which may hinder their ability to perform well against their job expectations causing Job stress in the long run.

**Impact of Flexibility:** IT professionals need to be flexible about change of customer requirements during project execution as well as needed to accommodate squeezing project schedules to survive in this highly competitive IT industry. IT professionals need to be ready to work for longer hours on a continuous basis. IT professionals also needed to be ready for situations of no job/ no project situations. When this situations prolong for longer duration, it can potentially bring high sense of Job Anxiety. The new norm of the IT industry is to use temporary contract work force which brings lot of Job insecurity for IT professionals. While flexibility of IT professionals helps the business sense of IT industry, it also causes Job insecurity leading to Job stress to IT professionals.

**Impact of individualization:** - As Job insecurity prevails in all walks of Indian IT professionals, they need to continuously upgrade their information Technology relevant skills in order to remain marketable. Indian IT professionals are moving in the direction of “Self-identity” as against “group- identity”. Each IT professional always want to run ahead of others in this rat race created by competitive IT industry. This puts enormous pressure on the individuals as it may harm “human relations “at work. Strained human relations at work may cause emotional turbulences and may cause loss of control on the work taken up for IT professionals in the short/long run.

**Impact of Cultural adaptation:** - It was observed in successful IT professionals that, one of their qualities is to be able to adapt to customer friendly culture as well as global corporate cultures. While it is natural for some professionals to adapt but for some it may prove very difficult. For example “discussing business over beer” may be normal in few cultures outside India, but for few individuals coming from some sections of India it may prove to be difficult, based on their belief systems as well as on their upbringing. Sometimes it may happen that even if a professional has adequate understanding about project to be taken up, client may not award the project due to mis-match in cultures. So any issues in culture adaption may cause job insecurity as well as Job stress for IT professionals.

**Impact of Time Zone adjustments:** - “Quality Project delivery/Service to customers on time”, is the top priority for Indian IT professionals. Quality Project delivery requires regular sync up meetings with customers from time to time, starting from concept phase of the project till project delivery. As most of the customers are generally at different time zones, Indian IT professionals generally tend to adopt to customer time zones, as most of IT services performed by Indian IT professionals is still “ low in the value chain”. This means lot of odd hour working conditions for Indian IT professionals. This disturbs the

sleep/food times for Indian IT professionals. So Time Zone adjustments done by IT professionals over long periods of time cause life style disorders. This kind of life style dis-orders do result in sickness and illness, causing slippages in the quality of the task performed.

#### **1.4 Job Stress definition and potential causes.**

According to US National Institute for Occupational Safety & Health (1998), **Job stress** can be defined as the harmful physical and emotional response that occurs when the requirements of the job do not match the capabilities, resources or needs of the worker. Job stress can cause poor mental health and can increase rates of work-related injuries and accidents.

#### **Potential causes of Job Stress:-**

As per UK Trades Union Congress (2000), some potential causes of Job stress are

Overwork

Lack of clear instructions

Unrealistic deadlines

Lack of decision-making

Job insecurity

Isolated working conditions

Surveillance

Inadequate child-care arrangements

## **1.5 Job conditions leading to potential Job stress for Indian IT professionals**

Though effect of major job characteristics on Indian IT professional was discussed earlier, let us examine in detail on job conditions leading to Job stress for Indian IT professionals.

**Overwork:** - As mentioned before, majority of the Indian IT professionals may end up in over/long working hours to meet customer demands and aggressive project schedules.

**Lack of clear instructions:** - Sometimes Indian IT firms, do not demand clear expectations from customers in a hurry to win the customer contracts. This results in lack of clear instructions for Indian IT professionals while executing projects. Many a times, IT professionals need to re-align with customer base for understanding clear expectations for successful project execution. This resyncing with customers on expectations and preferred execution styles may not always be fruitful, yielding to Job stress for Indian IT professionals.

**Unrealistic deadlines :-** In this competitive market of IT service contracts, which ever company bids for earlier project delivery times has a higher chance of winning the service contract. In a hurry to increase the revenues, sometimes Indian IT firms may end up committing for early project delivery. This may translate to unrealistic deadline for professionals working for that company. However some of the successful IT firms are negotiating realistic deadlines by showing quality in deliverables.

**Lack of decision Making :-** All said and done, although the IT industry is ‘moving up the value chain in revenue generation’, most of the projects taken up by Indian IT companies continues to be low-end, This means that customers do give little room in decision making for Indian IT professionals on an average. For capable Professionals, lack of decision making authority creates lot of discomfort and affects quality delivery of tasks.

Job-Insecurity: - As discussed before, new forms of employment is already practiced heavily by Indian IT companies i.e. “usage of temporary contract labour”. This is mainly practiced so that companies are not liable for its work force for longer periods. Jobs of temporary contract nature create immense sense of job insecurity for its work force. This greatly hinders future planning both at professional level and personal level for the IT professionals. Indian IT professionals unfortunately are not exempted from this sense of “round- the clock” Job Insecurity.

Isolated working conditions: - Most of the times, Indian IT professionals work in isolation from customer bases and sometimes also in different time zones. Face to face contact with customers is not encouraged for the reasons of travel cost as well as visa costs, though virtual meetings on internet/phone are arranged for critical phases of projects. This ends up in isolated working conditions for Indian IT Professionals for most parts of the project execution and delivery.

Surveillance: - Most of the IT projects contracts taken up by Indian IT firms are still in low end value chain of IT industry as Indian IT firms are mostly concentrating on the IT based services than products. So, Indian IT professionals are generally under continuous surveillance both by employing IT firms and concerned customers in terms of meeting project timelines with committed quality. This gives little flexibility for Indian IT professionals to try out new ways of dealing with the project execution as they cannot avoid weekly targets surveillance.

Inadequate child-care arrangements: - Very few companies have facilitated child care arrangements for its professionals in Indian IT industry. Also, in the mind sets of Indian IT firms, it still did not sink enough that professionals it employs also need to take care of their personal lives and child care. Though “work-life balance “is a new buzz word in the town for Indian IT industry, it is still not strictly followed by the Indian IT firms. This creates lot of stress for Indian IT professionals as balancing between professional life and personal life is not always easy task.

Based on the descriptions provided above, it could be concluded that on an average, Indian IT professionals are going through Job stress situations. Job stress when experienced for prolonged periods of time would cause mental ill health as it disturbs the hemostasis for the person.

### **Visible mental ill health symptoms in Indian IT Professionals**

Many Indian IT professionals are becoming victims of diseases like diabetes malicious, hypertension etc., mainly caused by stress situations handled at work place. In a cross-sectional study performed on 1071 professionals on IT and ITES professionals working in Bangalore, alarming facts were found: 31% of IT/ITES professionals are hypertensive with approximately 5% having malignant levels of hypertension (Giridhara babu et. al, 2013). This study further suggests that hypertension in IT/ITES professionals occurs a decade earlier compared to the rest of India and two decades earlier compared to developed countries.

## **1.6 WHO's view on Work & Mental Health**

World Health Organisation (WHO) and International Labour Organisation (ILO) came up with a report titled “Mental Health and Work: Impact, Issues and Good Practices” in the year 2000. This report elaborates following things:

There is growing evidence of mental illness due to work conditions. Mental health problems are among the most important contributors to the burden of disease and disability worldwide. Five of the 10 leading causes of disability worldwide are mental health problems. They are as relevant in low-income countries as they are in rich ones, cutting across age, gender and social strata. Furthermore, all predictions indicate that the future will see a dramatic increase in mental health problems.

The burden of mental health disorders on health and productivity at workplace has long been underestimated. The United Kingdom Department of Health and the Confederation of British Industry have estimated that 15-30% of workers will experience some form of mental health problem during their working lives. In fact, mental health problems are a leading cause of illness and disability (UK Department of Health, 1993).

The European Mental Health Agenda of the European Union (EU) has recognized the prevalence and impact of mental health disorders in the workplace in EU countries. It has been estimated that 20% of the adult working population has some type of mental health problem at any given time (Finnish Ministry of Social Affairs and Health, 1999).

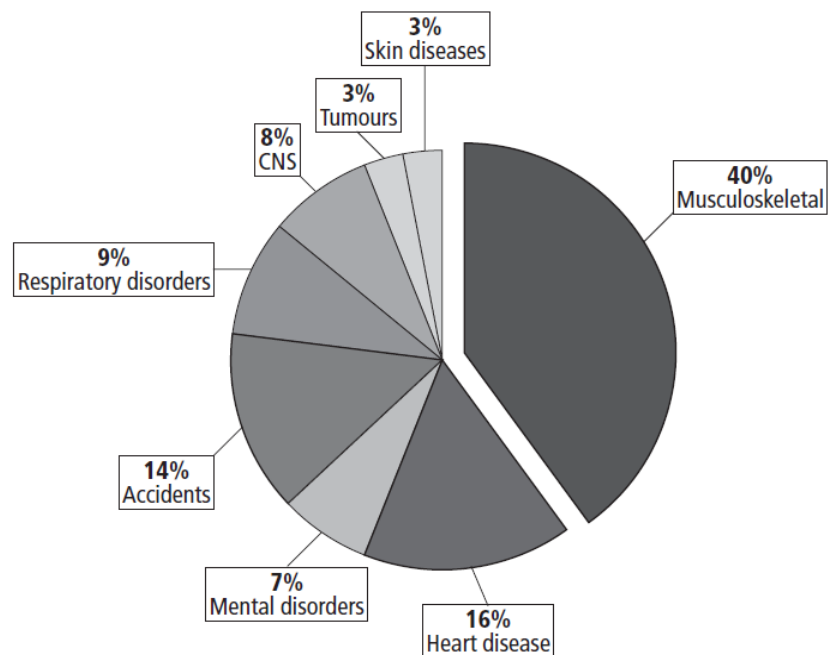
In the USA, it is estimated that more than 40 million people have some type of mental health disorder and, of that number, 4-5 million adults are considered seriously mentally ill (NIDRR, 1993). Depressive disorders, for example, represent one of the most common health problems of adults in the United States workforce.

The impact of mental health problems in the workplace has serious consequences not only for the individual but also for the productivity of the enterprise. Employee performance, rates of illness, absenteeism, accidents and staff turnover are all affected by employees' mental health status. In the United Kingdom, for example, 80 million days are lost every year due to mental illnesses, costing employers £1-2 billion each year (The Mental Health Foundation, UK, 2000).

In the United States, estimates for national spending on depression alone are US\$ 30-40 billion, with an estimated 200 million days lost from work each year (Conti DJ et al., 1994).

Depending on the age of onset of a mental health disorder, an individual's working capacity may be significantly reduced. Mental disorders are usually one of the three leading causes of disability, together with cardiovascular disease and musculo-skeletal disorders.

**Costs of occupational and work-related diseases**



Source: Takala J. (ILO) Indicators of death, disability and disease at work. African Newsletter on Occupational Health and Safety, December 1999, 9(3):60-65.

Figure 1.3: Break up of cost of occupational and work-related diseases

## **1.7 Major Variables in understanding Job Stress for Indian IT Professionals**

**Job Anxiety:-** According to D. Nayak et al. (2014), IT professionals' environment of job is highly time-bound, client-concerned and technology concentrated. The trends in turn, attached with many factors, contribute to high Job anxiety. These factors are extremely diverse, including change of technology, client communication, fear of uselessness, family support, long working hours, and work overload etc. Job Anxiety is a major component in moderating the Job stress. Clinical psychologists say that, people working in the field of information technology (IT) go through a lot of Job anxiety which in turn causes stress, depression and loneliness because of their work environment and often display feelings of inadequacy, lowered self-esteem and dissatisfaction.

**Emotional Intelligence:-** According to its contemporary meaning, occupational/Job stress is a complex, dynamic process in which various factors (stressors) and modifying variables are interrelated (Siegrist J,1996). According to Bulik(2005), whether a stressor ( i.e stress producing condition) produces an enduring health outcome or not depends on the extent to which the person perceives the condition as stressful and responses to it. His or her perception and response are affected by a number of modifying variables, mainly by personal resources. These resources seem to become very important factors that determine the experience of occupational/Job stress and its related effects. Gardner and Stough (2003) revealed negative relationship between Emotional intelligence and occupational/job stress. In another study, Bar-On et al. (2000) indicated that police officers scored significantly higher on emotional intelligence were less vulnerable to experienced stress and better coped with it.

Ability to recognize people's emotions and to regulate one's own emotions seem to be very important at work. This ability, defined as emotional intelligence (EI) construct, has been introduced by Salovey and Mayer (1990). It refers to one's ability to be aware of one's own

feelings, to be aware of other feelings, to differentiate among them, and to use the information to guide one's own thinking and behaviour. A temporary definition of emotional intelligence according to these authors indicates that it is an ability to recognize the meanings of emotions and the relationships, and to reason and problem- solve on the basis of them. Emotional intelligence is involved in the capacity to perceive emotions, assimilate emotion-related feelings, understand the information of those emotions and manage them” (Nikolau et al., 2002).

**Perceived Stress:-** In a study performed on management population of retail organisation, it was found that managers who scored higher in Emotional Quotient scored low on perceived stress and experienced better health and well-being, and demonstrated better workperformance ( Mark Slaski and Susan Cartwright, 2002). Another relevant study performed on relationship between emotional intelligence and work outcomes by Abraham Carmelli, (2003) indicated that emotional intelligence augments positive work attitudes, altruistic behavior, reduction of perceived stress and work outcomes.

Based on the above, it could be reasonably concluded that Job Anxiety, Emotional intelligence and perceived stress components are three important components in moderating Job stress for IT professionals.

## **1.8 Brief understanding on Yoga based Practices**

With world yoga day being announced as June 21 by United Nations, the whole world is particularly looking at how concepts of Yoga based approach could help alleviate modern day problems of man-kind. Yoga is the ancient Indian science which involves a conscious process to gain mastery over the involuntary system (Nagendra, 2002). Yoga in its original form consists of diverse practices, such as physical postures (*Asanas*), regulated breathing (*pranayama*), meditation, understanding the spiritual basis of life and ethical practices (Nagendra & Nagarathna, 2003). Physical body Practices target to make the body flexible by making blood flow smoothly in the human circulatory system. Physical postures called asanas, also makes the joint juicy so that they can withstand physical pressures, like sitting before computer for longer hours. The Breathing practices would cleanse the breathing apparatus of the human body. Regular breathing practices would help to avoid health issues caused due to blockages in the air flows in the body (Nagendra & Nagarathna, 2003). With meditation practices, one is able to focus on any object/subject of choice for longer periods of time. This also means that one can get control over “what thoughts can come in” and “what thoughts need to wait”. This kind of control over thoughts helps to bring “balanced state” of mind. With spiritual basis of life and ethical practices, one can look into the issues of work and life in totality. It helps to bring solutions at quicker pace as one gets into roots of the issues faced and works on correcting issues at roots. Yoga based practices aim at reaching balanced state of mind, when practiced regularly. According to Nagendra (2003), Cyclic Meditation is a Yoga based practice aimed to achieve “balanced state of mind” for its participants.

## **1. 9 Rational for the current study**

As mentioned earlier, Indian IT based product/service sector has huge potential to provide direct/indirect employment to around 30 million people by the year 2020. Slowly low cost advantage for India in IT product services is coming down, with increased salaries for professionals and rising infrastructure costs for companies. Indian IT industry is no more looking for “Coding Coolie Professionals”, but rather “Solution Architect Professionals”. Like in any established industry, a pyramid structure of hierarchy is being adopted by IT based companies to drive solution based products, in IT based services offered. However, to be reliable service board for the world IT globe, Indian IT professionals have to be robustness enough to handle the stressful situation at work place. Job stress for Indian IT professionals is expected to continue and rise, with many developing countries making systematic plans to take Indian IT revenue shares. So there is no running away from the work characteristics for IT professionals. IT professionals need to look for ways to creatively handle job stress both at personal level and at organisation level, failing which they would fall in the sphere of ill health impacts of Job stress. Yoga is about creating self-awareness and mindfulness in any situation. Mindfulness brings about various positive psychological effects, emotional reactivity, self-regulation and antidotes against common forms of psychological distress (Keng, Smoski & Robins, 2011, Hayes & Feldman, 2004). There is a need to study effect of Yoga based practices on Job stress levels of Indian IT professionals. Outcomes of this study, is of great value for Indian IT professionals, IT firms as well as for Indian Government to make India advance as pioneer in this “Digital Age”.

## **CHAPTER 2**

### **2. UNDERSTANDING ABOUT STRESS FROM THE ANCIENT INDIAN LITERATURE VIEW POINT**

With World Health Organization(WHO) and International Labor Organization(ILO) highlighting the paramount attention needed in this 21<sup>st</sup> century to improve mental health conditions of work force across globe , most developed countries are taking a serious look at methods of improving ‘mental-health’ of their countrys’ work force so as to reduce the effects of stress emanating from workplace. Mental health action plan for Europe and European pact for wellbeing at work place are in this direction (European Commission, 2008). In developing countries also, much debate on improving mental-health is bound to result in serious actions, to sustain the economy growth. Ancient Indian literature including Upanishads and Bhagavad-Gita explained long ago, the significance of ‘health’ in general and ‘mental-health’ in specific. As per ancient Indian texts, Mind (Manas) is the instrument for thinking ,feeling and perceiving (Subhash Sharma, 2007) . Ancient Indian texts help to understand the causes behind disturbances occurring to mind (reasons causing stress situations) as well as effects of these disturbances on body/psyche (consequences of ill health at physical level and mental level). Ancient Indian Literature suggests ways and methods to mankind on how to maintain & improve “mental - health” by bringing mind into “equilibrium state”.

## 2.1 Outline of this chapter

This chapter is built up from relevant sutras from below ancient Indian texts to build understanding about mental health and stress.

- ❖ तैत्तरीय उपनिषद्
- ❖ पतंजलि योगसुत्रा
- ❖ श्रीमद्भगवद्गीता
- ❖ माण्डुक्य उपनिषद्

This chapter starts by giving holistic concept about layers of human body. It also gives understanding about mental body i.e body of mind. It then focuses on modifications that are applicable to the mind. This chapter gives an understanding on how attached thinking, feeling and emotion may actually turn into illness at physical level as well psychological level, there by bringing significance of “ non- attachment” in thinking. It then gives understanding about characters of the any person which were categorized as “Gunas”, which influence the mind perception of external objects. It also gives brief understanding about a state beyond Gunas. It then explains stress and understanding of stress at various human sheaths. It introduces concept of Yoga from works of Swami Vivekananda and targets to provide brief understanding about methods to control modifications of the mind. This chapter ends by providing brief understanding about practices suggested to reach equilibrium state of mind where mind can be stress-free.

## 2.2 Holistic concept of the human Sheaths (layers) existence

According to तैत्तरीय उपनिषद्, each person is made up of five sheaths namely Annamaya kosha , Pranamaya kosha, manomaya kosha, vijnanamaya kosha and anand maya kosha ( T N Sethumahadevan, 2011).

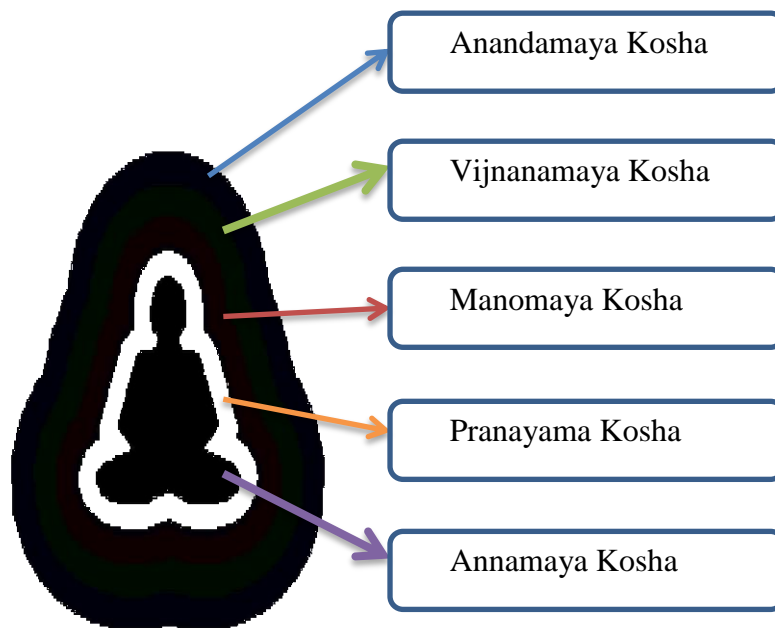


Figure2.1 :- Panchkosha Model based on Taitiriya Upanishad

As per western philosophy, the whole life force is created on matter based paradigm, however as per ancient Indian Upanishads, the life force is created on consciousness based paradigm (H R Nagendra ,2003).

According to T N Sethumahadevan (2011), below is the brief explanation on each kosha:

Annamaya kosha (the physical body) runs on “Anna” (food) and is responsible for actions done as part of daily routine, for example walking, running, lifting etc.

Pranamaya kosha ( the breath body) runs on “ prana” ( air) and is responsible for supplying oxygen to the cells of physical body ( Annamaya kosha)

Manomaya Kosha (The mind body) runs on works of mind (manas) and is responsible for emotions, likes/dislikes etc.

Vignanamaya kosha (The knowledge body) runs on the knowledge gathered from right source/ wrong sources and is responsible for developing discrimination power ( buddhi).

Anandamaya Kosha (The blissful body) is a place of total equilibrium, tranquillity and harmony.

Human focus generally stays initially in the lower level of consciousness (refer to Figure2.1) and after understanding effects of focus on lower level bodies, it tends to shift to higher level bodies. A person with विवेक generally tends to shift their consciousness to higher level bodies sooner than others. विवेक is the discriminating ability of the person to know what is real and what is temporary ( Subhash Sharma, 2007).

Below table gives brief understanding on layers of consciousness in the human body of existence.

Table 2.1:- Human sheaths of existence

Human Sheaths of existence (कोश)	Layers of consciousness
अन्नमय कोश	Physical Layer of Consciousness
प्राणमय कोश	Vital Layer of Consciousness
मनोमय कोश	Astral Layer of Consciousness
विज्ञानमय कोश	Wisdom Layer of Consciousness
आनन्दमय कोश	Blissful Layer of Consciousness

Every layer of body has impact on other layer. They are very connected layers of the same consciousness at different levels. It is also to be noted that higher level sheath has more impact on lower level sheath when compared to the impact of lower level sheath on the higher ones ( T N Sethumahadevan, 2011). This could be understood like this, “an injury while playing though is at physical layer of the body (अन्नमय कोश), it also has impact on the higher layers of the body for example at Mental body level (मनोमय कोश). Similarly “an unrest” at mental body level (मनोमय कोश) has impact on physical layer of the body (अन्नमय कोश) as well.

## 2.3 Modifications of the Mind

Mind (Manas) is the instrument for thinking ,feeling and perceiving . Thoughts (वृत्ति) are modificationn of mind as described by sage patanjali( Swami Satchidananda, 2012). Patanjali is a great sage , who collected principles behind yoga concepts and formulated binding principles, famously called as Patanjali yoga sutras. According to interpretation of these yoga sutras by Swami Satchidanda (2012), mind goes through five modifications. The five fold modifications of mind are right knowledge,wrong knowledge, fancy,sleep and memory.

**प्रमाणविपर्ययविकल्पनिद्रास्मृतयः ॥**

Pramanaviparyayavikaplanidrasmrutayah || Patanjali Yoga Sutra| 1|6||

““The fivefold modifications of mind are right knowledge,wrong knowledge,fancy,sleep and memory””.

According to Swami Satchidanda(2012), five categories of apparent movements of the mind are:

1. Proven theory, which is often assumed to have been reliably proved and therefore to constitute right knowledge; (or, rationalization of the movement of thought).
2. Unsound thinking or wrong knowledge, assumptions, presumptions, beliefs (deductions and inference may also be included here); (or verbal condemnation of the movement of thought as wrong).
3. Fancy or hallucination or imagination totally unrelated to any proven or assumed theories, which may also include the delusion that one is already out of the movement of thought.

4. A state of dullness or sleep; or succumbing to the movement of thought, feeling it is impossible to go beyond it.
5. Memory, or the recollection of a teaching or an experience which gives rise to the notion that it is possible to go beyond the movement of thought; such a notion forms an image.

**प्रत्यक्षानुमानागमाः प्रमाणानि ॥**

pratyakshaanumanaagamah pramanani || Patanjali Yoga Sutra| 1|7||

“Direct cognition, inference and testimony are the sources of knowledge”.

Theories are said to derive their proof from one or the other of the following sources:

- (1) Direct perception, sense-experience, or intuition.
- (2) In the absence of direct proof or experience, indirect proof is deduced from the right or wrong application of principles of logic chosen by oneself, which often lead to vague generalizations or presumptions that “since the theory comes from a usually reliable source, it must be correct ” (Swami Satchidananda, 2012).
- (3) Scriptural or other trustworthy testimony or authority - where, again, one accepts as proof the statements of those whom one has accepted as the authority, such acceptance being blind and fanatic.

**विपर्ययो मिथ्याज्ञानम् अतद्रूपप्रतिष्ठम् ॥**

viparyayo mithyajnanam atadroopapratishtham || Patanjali Yoga Sutra| 1|8||

“Wrong conception is false knowledge which is not based on its own form”.

Unsound thinking or wrong knowledge is based on error or on mistaken identity, where the cognition is unreal and faulty and hence the knowledge is faulty, too, and where there is no agreement between the expression and the experience, between the substance and the description.

**शब्दज्ञानानुपाती वस्तुशून्यो विकल्पः ॥**

shabdajnaananupati vastushoonyo vikalpah || Patanjali Yoga Sutra| 1|9||

“Following upon knowledge through words but empty of an object is fancy”.

Fanciful or hallucinatory expressions and even experiences or imaginations are "sound without substance", empty words and phrases or descriptions which have no corresponding reality, however realistic or inspiring or satisfying they may appear to be: hence they are the most deceptive and least trustworthy (Swami Satchidananda, 2012).

**अभावप्रत्ययालम्बना वृत्तिर्निद्रा ॥**

abhaavapratyaayaalambana vrittirnidra || Patanjali Yoga Sutra| 1|10||

“Sleep is the vrittis of absence of mental contents for its support”.

Sleep is also one state of mind. Sleep is a condition of mind which hides or conceals the knowledge of the external world.

अनुभूतविषयासंप्रमोषः स्मृतिः ॥

anubhootavishayasanpramoshah smritih || Patanjali Yoga Sutra| 1|11||

“Not letting the experienced objects escape from the mind is memory”.

Memory is the fifth vritti of the mind. It so of two kinds: conscious memory and subconscious memory. Conscious memory involves the recollection of things already experienced, recall of past experiences. Subconscious memory is experienced during state of dream.

वृत्तयः पञ्चतय्यः क्लिष्टा अक्लिष्टाः ॥ ५ ॥

vrittayah pangchatayyah klishtha aklishtah || Patanjali Yoga Sutra| 1|5||

“There are five classes of modification, painful and not painful.”

According to Swami Satchidananda (2012) five types of thoughts described above can be neutral or painful. These apparent movements or states or moods of mind, which are concepts, ideas or images in it, can all be grouped under five categories, irrespective of whether they are experienced as painful or not-painful.

## 2.4 Attached Thinking, Feelings, Emotions & illness.

Attached Thinking is the one, which makes one think about external sense object continuously with a desire to possess the same, in sometime. According to Subhash Sharma (2007), Vedanā is a word in Sanskrit for "feeling". In general, Vedanā refers to the pleasant, unpleasant and neutral sensations that occur when our internal sense organs come into contact with external sense objects and the associated consciousness. Bhāvana is a word in Sanskrit for "Emotion". It refers to both positive and negative ones. The difference between emotion and feeling is that feelings are easier to identify because they are faster. An emotion might be a deeper experience because it might affect more of you, but that is only because it is mixed into the rest of your system. That is, a depression affects more of you than just an isolated feeling of sadness. In other words, people can only have a few feelings at a time, but they can have many emotions at the same time. Emotions are mixed, but to feel something you have to be able to identify what it is or it is going to be so intense that you would be able to identify what it is. Emotions just feel deeper because it is all your feelings being affected at once. Since emotion is all your feelings being affected at once, emotions are stronger than feelings. Feelings however are a more directed focus. When you feel something you can always identify what that one thing is. When you have an emotion, the emotion is more distant, but stronger. All your feelings must feel a certain way about whatever is causing the emotion. So that one thing is affecting your entire system. Feelings can then be defined as immediate unconscious thought and emotions as unconscious thought. Emotions are "power thoughts" because it affects an individual at deeper level. When we feel depressed, sad, unhappy at mental level and when we feel pain, heat, cold, irritation, touch & smell at physical level. It deals with the annamaya kosha and also encompasses other koshas.

Feeling takes place more at grosser and surface level. Emotions are of two types; positive such as happiness, magnanimity, Prema, bhakti surrender etc, and negative emotions such as kâma,krodha,lobha,mooaha etc. It deals with the Manomaya and further vijïanamaya, änanadamaya kosha. When once mind comes under influence of strong emotions to possess the external object, it goes through cycle of Kama( strong desire), krodha ( great anger), delusion, loss of memory and loss of discrimination power and eventually making the person perish ( Swami Krishnananda, 2006).

**ध्यायतो विषयान्पुंसः संगस्तेषूपजायते**

**सङ्गात् संजायते कामः कामात्क्रोधोभिजायते ॥**

Dhyayato vishanpunsah sangasteshopajayate

sangaat sanjayate kamah kamatkrodhobhijayate ॥ Srimadbhavatgeetha | 2|62|

“Thinking of sense objects, attachment to them is formed; from attachment arises desire to possess: and from longing, anger emerges”.

**क्रोधाद्भवति संमोहः संमोहात्स्मृतिविभ्रमः**

**स्मृतिभ्रंशाद् बुद्धिनाशो बुद्धिनाशात्प्रनश्यति ॥**

krodhadbhavati sammohah sammohatsmrutivibramah

smrutibranshaat buddhinasho buddhinashatpranashyati ॥ Srimadbhavatgeetha | 2|63|

“From anger comes delusion, from delusion loss of memory, from loss of memory comes the ruin of discriminative power, from loss of discriminative power and discrimination, the person perishes”.

When smriti (memory) is lost, memory of our environment, our identity, etc is lost. Then discriminative faculty which alone can tell us what to do and not to do, completely goes away, and then we go down step by step. We must know this nature of mind, then we can fight against it and build up a more healthy and stable personality. It is good to know these evil possibilities so that we take adequate precaution, strengthen our discriminative faculty, and never allow it to be eroded by the energy coming from the sensory system. The sensory system should be controlled by the Buddhi: buddhi should not be controlled by the sensory system (Subhash Sharma, 2007). An emotionally intelligent person should know how to control sensory system and overcome its tendencies intelligently.

रागद्वेषवियुक्तैस्तु विषयानिन्द्रियैश्चरन् ।  
आत्मवर्षेर्विधेयात्मा प्रसादमधिगच्छति ॥

raagadveshaviyuketshu vishayanindrayecharan

atmavarche videyaztma prasadmahigacchati || Srimadbhavatgeetha | 2|64|

‘But the self-controlled person, moving among sense objects with the senses under control, and free from attraction and aversion, attains tranquillity’. Such a person who has control over attraction, aversion attains to tranquillity. Then only comes the capacity to deal with life in a balanced manner. Self-regulation and balanced attitude is one of the most important aspects of for mental well-being (Swami Satchidananda, 2012).

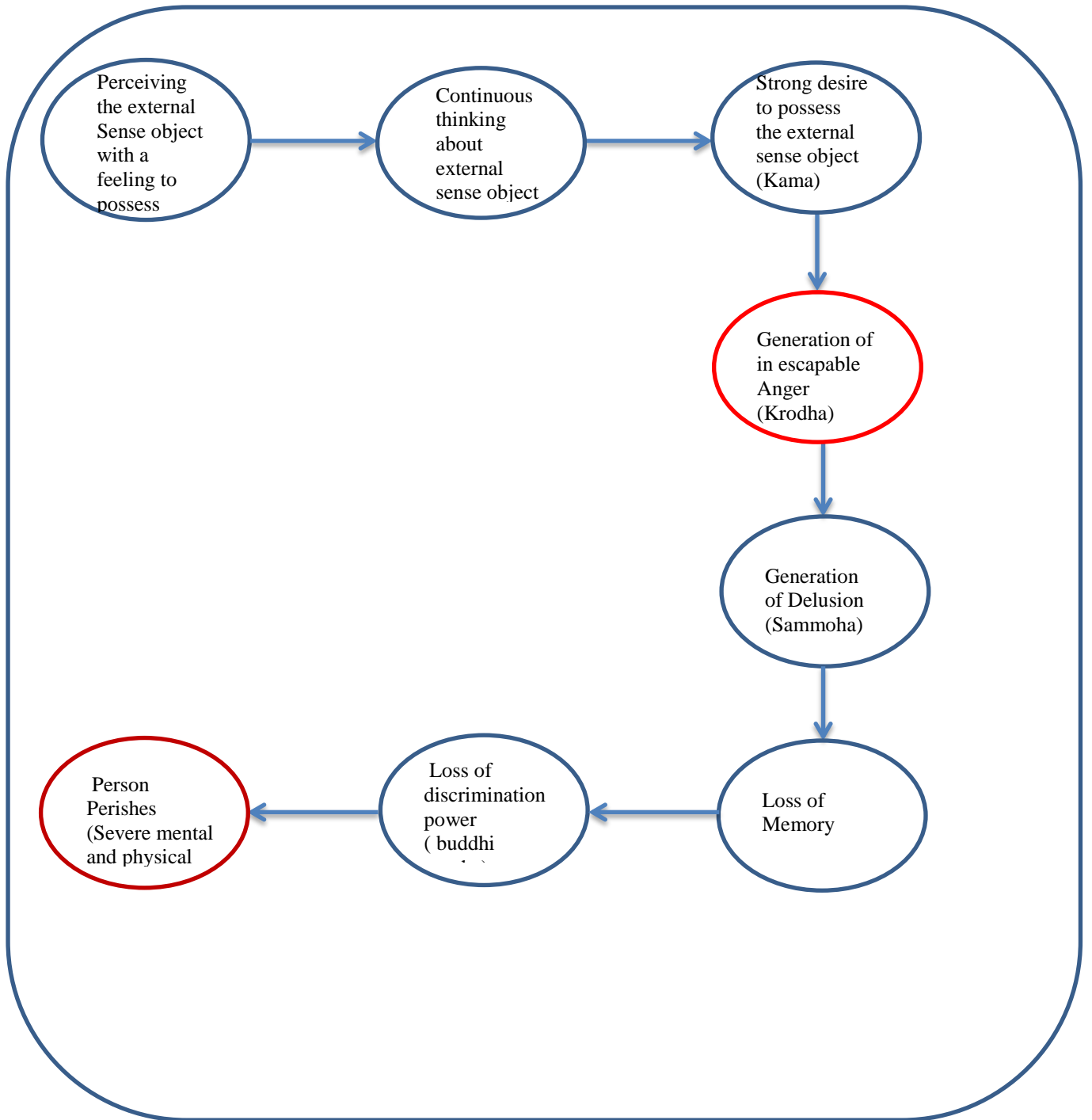


Figure2.2 - Flow from attached thinking to Destruction

## 2.5 गुणा ( characters of a person)

According to Subhash sharma (2007), we all are born with Gunas (understand as qualities) and they govern our actions,our behaviour,structure of body,food we eat etc.so study of Gunas is very important to understand forces driving mental health in depth, as mental health is the one, which causes reaction to stressful situations enforced upon.The Guna model of personality is based on Sāmkhya philosophy. There are three Gunas namely Tamas, Rajas and Sattva. Different persons may have different levels of the dominance of Sattvä,Rajasä and Tamasä Gunas. These three Gunas are the subtle qualities of nature that underlie matter, mind and life. They are the energies through which not only the surface mind, but our deeper consciousness functions. All objects in the universe consist of various combinations of the three Gunas. Cosmic evolution consists of their mutual interaction and transformation. These three Gunas are also one of the prime themes of Ayurveda thought. They form a deeper level than the biological humours and help us understand our mental and spiritual nature and how it functions. All individuals have, mixed amount of these three properties or attributes or Gunas but one predominant Guna determines an individual's personality as Saattvika, Raajasika and Taamasika. There are 16 personality types based on the predominance of the Gunas that are explained in Aayurveda. The predominant Gunaa type is major and other two may be minor or minimal or dormant. Gunas are like genetic codes.

The grossest is Tamasic personality whose actions are described below.

अनुबन्ध क्षयं हिंसाम् अनपेक्ष्य च पौरुषम् ।  
मोहाद् आरभ्यते कर्म यत् तद तामसमुच्यते ॥

Anubandham khnayam hisaam anapaikhnya ca paurunam|

Mohaad aarabhyate karma yat tat taamasam ucyate| Srimadbhavatgeetha |18|25||

“That action which is undertaken from delusion,without heeding to the consequence of loss,injury and ability is declared to be Tāmasika”.

Raajasik psersonality is described as below .Rajas means to shine.

यत्तु कामेप्सुना कर्म साहङ्कारेण वा पुनः ।  
क्रियते बहुलायासं तद्राजसमुदाहृतम् ॥१८.२४॥

Yattu kaamepsunaa karmaa saahankareea vä punah|

Kriyate bahulayasam tadrajasam udahaitam| Srimadbhavatgeetha |18|24|

“But the cation which is done by one craving for desires or gain with egoism or with much effort,that is declared to be Rājasika”. Persons with Rajas predominance are sharp, brilliant and dynamic “go getter”.They are however propelled to action by their drive of selfishness.

The best is Sattvik with concern & love for others.

नियतं सङ्गरहितं अरागद्वेषतः कृतम् ।  
अफलप्रेप्सुना कर्म यत् तत् सात्त्विकमुच्यते ॥

Niyatam sangarahitam araagadvenatau kaitam |

Aphalaprepsunaa karma yat tat saattvik mucyate|| Srimadbhavatgeetha |18|23|

“An action which is ordained,which is free from attachment,which is done without love or hatred by one and not desirous of the fruit,that action is declared to be saattvika”.

These three Gunaas are; pure activity (*Sattva*), Activity (*Rajas*), and Inactivity (*Tamas*). According to Subhash Sharma (2007), the concept of *Sattva* is that of ‘selfless purity’, the *Tamas* of ‘foul darkness’ and *Rajas* of ‘shining brightness’. When the mind is purified (*Sattva*) from all its agitations (*Rajas*) and the intellect is cleansed of criminal lust (*Tamas*), then the personality experiences inward peace and happiness. The psychological being in every one of us continuously comes under the influence of these moods. These three reflect differently among different people in the same way as the water poured into hundred different bottles look different not because of water but because of shape and colour of each bottle. These different proportions influence every individual and results in the distinct flavours every time in each personality. IT Professionals must therefore know precisely what are their nature and behavior of these moods and also must learn the art of subjectively diagnosing them in oneself. For example, an IT Professional under the influence of *Tamas* would lose capacity to discriminate between the right and wrong and would act as if under the influence of hallucination or stupefaction. An IT Professional should therefore be sensitive enough to recognize the various influences under which one is forced to function from time to time. This will help him/her to discard all wrong impulses, immoral tendencies, unethical urges and animal passions and keep himself/herself balanced in righteous living. Even an intelligent IT Professional will need repeated consolation, when being extremely agitated by any dire emotion.

Isvarakrishna, the author of Samkhya Karika, the scripture most referred to by scholars due to its authority, describes the nature and characteristics of Triguna, in verse 12 and 13th. The term prakasa, pravrtti, niyama in the 12<sup>th</sup> verse are also interpreted and translated variously by authors, as illumination, activity and restriction/restrain; as awareness, activity and inertia cited in Larson & Bhattacharya (1987). Shastri (1930) translates this Karika as follows. "Sattva is considered to be buoyant and bright, Rajas to be stimulating and mobile; Tamas alone is heavy and enveloping; their functioning for the goal (of the spirit) is like (the action of) a lamp".

**सत्त्वं लघु प्रकाचाकं इस्तमुपस्तंबकाम्चालं च रजः**

**गुरु वरनकं एव तमहप्रदिपवच् चात्तो वृत्तिः॥**

Sattvam laghu prakāçakam istamupastambakamcalam ca rajah|

Guru varanakam eva tamahpradipavac carthato vrittih||13||

Characteristics and manifestation of trigunas in various text and the interpretation by scholars of the past and the present are in relation to etymology. Since the meaning, nature, and functions and manifestations of Trigunas are available in great detail with clarity in the "Aswamedhika Parva" of the Mahabharata in chapter 36 to 39 and in the 14<sup>th</sup> and 17<sup>th</sup> chapter of Bhagvadgita, which have great psychological relevance in understanding human nature these source may be given central importance. This conceptual analysis leads to following conclusions: the meaning and nature of Triguna are attached and dependent to one another. All the three are simultaneously exist in everything in the universe. including

animate, inanimate and the mind. Therefore, manifest form of sattva, rajas and tamas can be categorised into manifestation in the universe and manifestation in human nature.

## **2.6 Characters of a Person beyond Guna**

There is considerable material in the Gita to give guidance to those who want to achieve success in worldly activities, which itself ultimately leads on to spiritual realization. One's state of mind affects one's efficiency in action. Only a person with a detached mind can function really efficiently. According to Subhash Sharma (2007), Srimad Bhagvad Gita shows the way to train the mind to achieve excellence, indeed perfection, in action. It deals with the development of the individual as an integrated personality. As a result, the Gita is an ideal guide for those aspiring to build a perfect personality. In Indian philosophy, the concept of mental healthiness is developed in a different context. The person who is always mentally healthy is categorized as a Sattvic personality, Sthitaprajna or Gunateet. The characteristics of Gunateet and Sthitaprajna are similar to those of an mentally tranquil state personality. In the Bhagvad Gitaa the characteristics of Sthitaprajna and Gunateeta are well described. They explain how to deal most effectively and efficiently with crucial stress situations in life without getting attached to the situation. One needs to go beyond the Gunas- Gunathetha sthiti which is powered by unfailing wisdom base of jnanaYoga. The Sattva (values) gets a foundation of wisdom by an all-encompassing wisdom explained in Upanishads, Gitaa, etc. All Sattvic action leads us to freedom from all bondages, towards silence, peace, harmony, bliss, power to govern ourselves in the right directions in all such conflicting stressful situations (Swami Satchidananda, 2012).

Powered by that wisdom traditions of values the person moves from Sattvic level to the level of a Sthitaprajna (Gitā) described below:

प्रजहाति यदा कामान्सर्वान्पार्थ मनोगतान  
आत्मन्येवात्मना तुनाँउ स्थिथप्रज्ञाशौचते ॥

Prajahāti yadā kāmānsarvānpārtha manogatān|

Ätmanyevätmanā tuñöaù sthitaprajñastadocyate || Srimadbhavadgeetha | 2. 55||

‘When one completely casts away, O Partha, all the desires of mind, satisfied in the self alone by the self, then he or she is said to be one of steady wisdom.’

Sthitaprajna is the quality that results when a person has overcome all desires in the heart.

When the infinite Self is clearly experienced, it is completely satisfying. Desires for things of this world disappear when the significance of this state is intelligently understood: nothing can equal its value. Such freedom from petty desires will obviously improve a person’s emotional balance. This verse points to the highest level of such possibility. The highest maturity of the human mind prevents it being dragged away by desirable objects from outside. This is achievable by every human being, by proper discrimination; by realizing one’s own true nature as infinite, immortal, and divine. A very beautiful parable: when you raise your whole life on this rock of the Atman, nothing can shake it. This is called a steady character (sthitaprajñā). Then a person has high character strength arising from spiritual awareness. This steady state arises when the Gita ideas are properly understood. They are meant to be lived in active life. Men and women become “form of purusha” in the true sense of the term, and not mere creatures, who can be thrown off balance by some external force. We must learn to think and feel for things and persons in a big way. For success in life, we need steadiness of mind, which means healthiness of mind.

## 2.7 Stress as per Yoga Philosophy

According to Yoga Philosophy, Stress means imbalance ( HR Nagendra, 2003). At the mental and physical level, excessive speed and demanding situations cause pain, leading to disease and ailments. Multiple thoughts at the same time in mental plane cause the imbalance, giving no room to think about rationality of thoughts. According to HR Nagendra (2003), imbalances at the mental level manifest as upsurges in emotions, and cause strong likes and dislikes. There is invisible connection between all five layers of the body. Imbalance in any layer of the sheath (barring 'Anandmaya Kosha' as it is place of 'perfect place of balance') has cascading effect on the other sheaths of the body. However imbalance in the higher level layer like 'Vignanamaya kosha' causes more imbalance in lower level layers like 'Manomaya Kosha', 'Pranamaya Kosha', and 'Annamaya Kosha'. Imbalances in lower level layers like 'Annamaya Kosha' causes relatively less imbalance in higher level layers like 'Pranamaya Kosha', 'Manomaya Kosha' and 'Vignanamaya Kosha'. अविद्या( Ignorance) causes imbalance in the 'Vignanamaya Kosha'. Ignorance hinders everybody to be able to distinguish between what is real and what is unreal. Ignorance stops everybody to be able to differentiate between what is permanent and what is temporary. Strong emotions like राग, द्वेष, मोह, मद, मात्सर्य, काम, क्रोध् etc. cause imbalances in the Manomaya kosha. Imbalances in 'Manomaya Kosha' would cause disturbances and imbalances in 'prana flow' ( life force) at Pranamaya Kosha level. Imbalances in 'Pranamaya kosha ' bring imbalance in the physical body. These imbalances in 'Pranamaya Kosha', would settle down as visible ailments in 'Annamaya Kosha'.

According to HR Nagendra(2003), these settled imbalances in ‘ Annamaya Kosha’ effect one (or) all of following

An overused tissue/organ/system

Genetically defective tissue/organ/system

Already weak organ/tissue/system due to external factors.

For example, systems like digestive system, circulatory system, reproductive system etc would be effected. For example organs like heart, liver would be effected. If a person, unfortunately gets effected due to external factors like accident/ bacteria, then before body immune system completely can cure the illness, this ‘tops-down’ passed imbalance to the ‘Annamaya Kosha’, aggravates the existing illness. Imbalances in ‘ Manomaya Kosha’ also may settle down as diseases and they are ‘non- communicable’ in nature like ‘ Diabetes, Hyper Tension,cardio vascular diseases’ etc.

Table 2.2:- Imbalance causes at each Human sheath

Layer of the body	Imbalance causes
Blissful Layer of Consciousness	No imbalance. Perfect balancing point for body, mind
Wisdom Layer of Consciousness	Ignorance. ( in ability to differentiate between real and temporary)
Astral Layer of Consciousness	Strong likes and Dislikes
Vital Layer of Consciousness	Imbalances in breath flow
Physical Layer of Consciousness	Un healthy tissue/organ/system at the physical body level.

## 2.8 Methods to control modifications of the Mind

According to the year 2012 reprinted edition of the book “Patanjali Yoga Sutras Sanskrit text with Transliteration, Translation & Commentary” by *Swami Vivekananda*, योग (Yoga) can help to control the modifications of the mind.

योगश्चित्तवृत्तिनिरोधः ॥ २ ॥

yogashchittavrittinirodhah| Patanjali Yoga Sutra| 1|2||

“Yoga is restraining the mind-stuff (Chitta) from taking various forms (Vrttis)”

*Swami Vivekananda* interpretation of above sloka is as follows

“We have to understand what *Chitta* is, and what are these *Vrttis*. For example I have this eye. Eyes do not see. Take away the brain centre which is in the head, the eyes will still be there, the retina complete, and also the picture, and yet the eyes will not see. So the eyes are only a secondary instrument, not the organ of vision. The organ of vision is in the nerve centre of the brain. The two eyes will not be sufficient alone. Sometimes a man is asleep with his eyes open. The light is there and the picture is there, but a third thing is necessary; mind must be joined to the organ. The eye is the external instrument. We need also the brain centre and the agency of the mind. Carriages roll down a street and you do not hear them. Why? Because your mind has not attached itself to the organ of hearing. First there is the instrument, then there is the organ, and third, the mind attachment to these two. The mind takes the impression farther in, and presents it to the determinative faculty *Buddhi* which reacts. Along with this reaction flashes the idea of egoism. Then this mixture of action and reaction is presented to the *Purusa*, the real Soul, who perceives an object in this mixture. The organs (*Indriyas*), together with the mind (*Manas*), the determinative faculty (*Buddhi*) and egoism (*Ahamkara*), form the group called the *Antahkarana* (the internal instrument).

They are but various processes in the mind-stuff, called *Chitta*. The waves of thought in the *Chitta* are called *Vrtti* (“the whirlpool” is the literal translation). What is thought? Thought is a force, as is gravitation or repulsion. It is absorbed from the infinite storehouse of force in nature; the instrument called *Chitta* takes hold of that force, and, when it passes out at the other end it is called thought. This force is supplied to us through food, and out of that food the body obtains the power of motion, etc. Others, the finer forces, it throws out in what we call thought. Naturally we see that the mind is not intelligent; yet it appears to be intelligent. Why? Because the intelligent soul is behind it. You are the only sentient being; mind is only the instrument through which you catch the external world. Take this book; as a book it does not exist outside, what exists outside is unknown and unknowable. It is the suggestion that gives a blow to the mind, and the mind gives out the reaction. If a stone is thrown into the water the water is thrown against it in the form of waves. The real universe is the occasion of the reaction of the mind. A book form, or an elephant form, or a man form, is not outside; all that we know is our mental reaction from the outer suggestion. Matter is the “permanent possibility of sensation,” said John Stuart Mill. It is only the suggestion that is outside. Take an oyster for example. You know how pearls are made. A grain of sand or something gets inside and begins to irritate it, and the oyster throws a sort of enameling around the sand, and this makes the pearl. This whole universe is our own enamel, so to say, and the real universe is the grain of sand. The ordinary man will never understand it, because, when he tries to, he throws out an enamel, and sees only his own enamel. Now we understand what is meant by these *Vrttis*. The real man is behind the mind, and the mind is the instrument in his hands, and it is his intelligence that is percolating through it. It is only when you stand behind it that it becomes intelligent. When man gives it up it falls to pieces, and is nothing.

So you understand what is meant by *Chitta*. It is the mind-stuff, and *Vrttis* are the waves and ripples rising in it when external causes impinge on it. These *Vrttis* are our whole universe. The bottom of the lake we cannot see, because its surface is covered with ripples. It is only possible when the rippled have subsided, and the water is calm, for us to catch a glimpse of the bottom. If the water is muddy, the bottom will not be seen; if the water is agitated all the time, the bottom will not be seen. If the water is clear, and there are no waves, we shall see the bottom. That bottom of the lake is our own true Self; the lake is the *Chitta*, and the waves are the *Vrttis*. Again, this mind is in three states; one is darkness, which is called *Tamas*, just as in brutes and idiots; it only acts to injure others. No other idea comes into that state of mind. Then there is the active state of mind, *Rajas*, whose chief motives are power and enjoyment. "I will be powerful and rule others." Then, at last, when the waves cease, and the water of the lake becomes clear, there is the state called *Sattva*, serenity, calmness. It is not inactive, but rather intensely active. It is the greatest manifestation of power to be calm. It is easy to be active. Let the reins go, and the horses will drag you down. Anyone can do that, but he who can stop the plunging horses is the strong man. Which requires the greater strength, letting go, or restraining? The calm man is not the man who is dull. You must not mistake *Sattva* for dullness, or laziness. The calm man is the one who has restraint of these waves. Activity is the manifestation of the lower strength, calmness of the superior strength. This *Chitta* is always trying to get back to its natural pure state, but the organs draw it out. To restrain it, and to check this outward tendency, and to start it on the return journey to that essence of intelligence is the first step in *Yoga*, because only in this way can the *Chitta* get into its proper course.

Although this *Chitta* is in every animal, from the lowest to the highest, it is only in the human form that we find intellect, and until the mind-stuff can take the form of intellect it is not possible for it to return through all these steps, and liberate the soul. Immediate salvation is impossible for the cow and the dog, although they have mind, because their *Chitta* cannot as yet take that form which we call intellect. *Chitta* manifests itself in all these different forms - scattering, darkening, weakening, and concentrating. These are the four states in which the mind-stuff manifests itself. First a scattered form, is activity. Its tendency is to manifest in the form of pleasure or of pain. Then the dull form is darkness, the only tendency of which is to injure others. The commentator says the first form is natural to the *Devas*, the angels, and the second is the demoniacal form. The *Ekagra*, the concentrated form of the *Chitta*, is what brings us to *Samadhi*.” Just to brief out the interpretation done by *Swami Vivekananda*, mind plays an important role in perceiving things of the external world. For example, eyes of the body form an instrument while the organ to sense vision is in the brain centre. Mind attaches the instrument to the organ and creates the picture of the “ external object”. Mind also presents this picture to discriminative faculty called“ Buddhi”. If the Mind gives distorted picture of “external object”, Buddhi would not be able to work as expected as its input is distorted. So any modifications of the mind while attaching instrument to organ can potentially lead to distorted image of external object and there by becomes the reason for reactions that would occur as response. This is something like perceiving “rope” as “snake”. Even though eyes and brain centre is working healthy, due to current state of the mind at the time of perceiving, wrong object could be perceived. Gunas which were described earlier, would cause modifications to the state of mind.

Due to continuous modifications of the mind, mind can exist in any one of the four forms namely - scattering, darkening, weakening, and concentrating. Concentrating form of the mind can give correct picture of the “external object” so that buddhi can work without error. Yoga is a method which helps to come to concentrated form of the mind there by restraining mind to take other forms.

अभ्यासवैराग्याभ्यां तन्निरोधः ॥ १२ ॥

Abhyasavairagyabhyan tannirodhah|| Patanjali Yoga Sutra| 1|12||

“Their control is by practice and non-attachment.”

Interpretation of this sutra, as per *Swami Vivekananda* is like below

“The mind, to have this non-attachment, must be clear, good and rational. Why should we practice? Because each action is like the pulsations quivering over the surface of the lake. The vibration dies out, and what is left? The *Samsharas*, the impressions. When a large number of these impressions is left on the mind they coalesce, and become a habit. It is said “habit is second nature;” it is first nature also, and the whole nature of man; everything that we are, is the result of habit. “

As per above interpretation by *Swami Vivekananda*, modifications of the mind can be restrained by practice and non- attachment. Previous impressions left on the mind play a huge role in generating “ modifications of the mind”. This impression left on the mind has to be purified by practice and non attachment. Like a crystal clear lake, mind has to pass the information to Buddhi , so that the true nature of the person (i.e blissfulness) can come out.

when the true nature of the person ( Blissfulnes) come out, then it

Clears 'विज्ञानमय कोश' from Ignorance

Clears "मनोमय कोश from strong emotions

Clears Prana flow imbalances in प्रणमय कोश

Clears Physical imbalance in अन्नमय कोश

## 2.9 Practice Suggested to reach Equilibrium state of Mind

Mandukya Upanishad (माण्डुक्य उपनिषद्) is the shortest of all Upanishads and is assigned to Atharveda(अथर्ववेद). It is listed as number 6 in the Muktika canon of Upanishads (उपनिषद्). It discusses the syllable AUM (ॐ), presents the theory of four states of consciousness, asserts the existence and nature of Soul/Self (आत्म ). Here we discuss about the four states of Consciousness as described in माण्डुक्य उपनिषद् as described by Nikhilananda (2006).

### Four states of consciousness:-

As human being, we generally experience three states of consciousness, namely जागृत, स्वप्न and सुषुप्ति. We rarely experience the fourth state i.e तुरीय.

The waker state of consciousness called jagrut (जागृत):- The waker state of consciousness is turned outward. In this state, Self is shining through the senses, mind, intellect, illumining their respective objects. This consciousness works at the gross body level.

The dreamer state of Consciousness called Svapna (स्वप्न) :- In the dream state ,The Self illumines only subtle objects, a replay of the *deep impressions(vasanas)* gathered in the waking state expressing in pictorial form. In the waking state these *vasanas* express as the waker's thoughts and feelings. Like the waker, the dreamer believes him or her and his or her world is real. The dreamer is equipped with the same instruments for experience as the waker: dream senses to consume dream objects, a dream mind to emote and feel a dream intellect to think dream thoughts, and a dream

ego to go about the business of experiencing the dream life. This consciousness works at the subtle body level.

The deep Sleep state of consciousness called Sushupti (सुषुप्ति) :- In the other States, consciousness flows outward and inward but in sleep it loses direction. The sleeper ego is extremely subtle, its presence indicated by the fact that we experience limitlessness and bliss. In the waking and dream states bliss is sporadic because it is broken by many divisions of thought and feeling. We know of the sleeper's experience because it reports a good sleep after transforming into a waker. Were the waker actually a different ego from the sleeper, or the dreamer, it wouldn't recall the experience of sleep or dream. This consciousness works at the casual body level.

Pure consciousness state called Turiya (तुरीय) : It is the background that underlies and transcends the three common states of consciousness. It is the true state of experience of the infinite (*ananta*, अनन्त) and non-different (*advaita/abheda*, अद्वैत / अबेध), free from the dualistic experience which results from the attempts to conceptualise (*vipalka*, विकल्प) reality. This is state of limitless awareness and limitless silence.

Though discussion above, is about consciousness, we limit our discussion to mind modifications as consciousness shines on the mind. So as we can see from above discussion that our mind is busy during Waker state as well as Dreamer state. In the deep- sleep state as ego goes to subtle state, mind activity is greatly reduced.

In Turiya state, mind goes into limitless silence. This is a state where mind loses its modifications and tries to get close to self of happiness. Given that mind drops its function of modification in Turiya state, the “ Anandmaya Kosha” shines on the “ Mental body” giving its strength to solve the problems of the mind when it comes to “ waker” state.

It is also explained in Mandukya karika on how we can reach the equilibrium state of mind to experience glimpses of limitless silence .

लये संबोधयेत् चित्तं विक्षिप्तं शमयेत् पुनः  
सकषायं विजानीयात् समाप्रमत्तम् न चालयेत् | माण्डुक्य उपनिषद्| 3.44||

*‘In a state of mental inactivity awaken the mind; when agitated, calm it; between these two states realize the possible abilities of the mind. If the mind has reached that state of perfect equilibrium then do not disturb it again.’*

As could be understood from above Shloka that we need to observe current state of mind.

When it is agitated , as it thinks about external world perceptions ( i.e waker state), calm it down so that we turn into subtle state of ego ( i.e sleep state). When you have calm down the mind , awaken it again to waker state ( i.e waker state). As you have done it repeatedly, then both waker state and sleep state of consciousness settle down to the underlying consciousness state ( i.e Turiya State). When once mind/consciousness reaches perfect state of equilibrium ( i.e Turiya state), do not disturb it so that infinite bliss and happiness could be experienced in silence of form. This state of Mind could be practiced by methods based on Yoga practices.

## CHAPTER 3

### LITERATURE SURVEY FROM SCIENTIFIC RESEARCH

#### 3.1 Early research on Stress and Job stress:

Stress emanating from workplace has been designated as one of the top ten industrial diseases in the US (British Psychological Society, 1988). Previous research supports the view that at least 25% of the working population is psychologically stressed at any one time (Willcox,1994). The study of stress begins with a difficulty of definition. 'Stress' is one of the most inaccurate words in the scientific literature because it is used to describe both the sources and the effects of the stress process (Williams, 1994). The word 'stress' is sometimes used to denote stressful events, sometimes to denote the effect of these events on work performance, and sometimes to denote an individual's reaction in terms of disordered health (MacLean,1985). Hans Selye is regarded by many as the father of stress research. His book *'The Stress Of Life (1956)'* did much to bring the concept into the public domain and his General Adaptation Syndrome (GAS) is one of the seminal concepts in the field of stress research. The General Adaptation Syndrome (GAS) states that, in response to a stressor, an initial 'alarm reaction' is followed by a 'stage of resistance' in which resistance to the original stressor builds up but ability to resist new stressors is lowered. Eventually a 'stage of exhaustion' sets in, which ends in catastrophic inability to cope with *any* form of stress (Selye, 1952).

Gray (1991) modelled the General Adaptation Syndrome diagrammatically as shown below in Figure3.1.

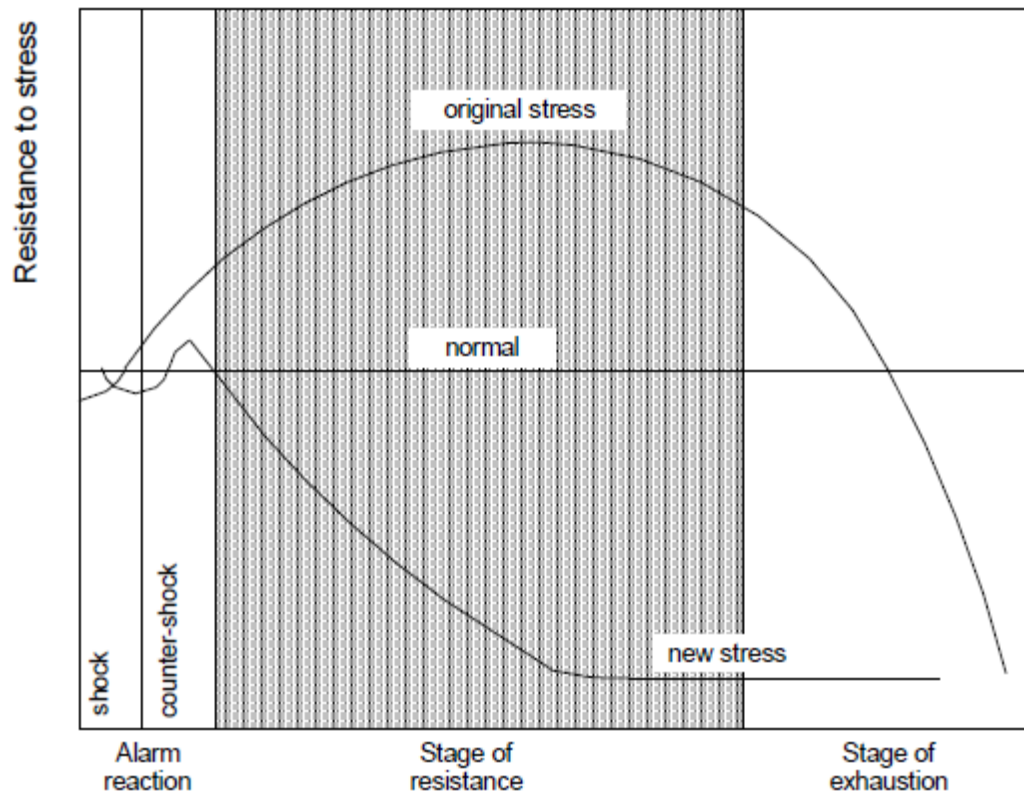


Figure3.1: - Selye's General adaptation Syndrome ( Source : Gray (1991))

There were many other definitions suggested to provide understanding about the stress. One of the earlier understanding on stress was, it is the nonspecific result of any demands upon the body, be the effect mental or somatic (Selye, 1976). Later it was argued that stress is a function of uncertainty, a perceived dynamic state involving uncertainty that occurs at the organizational, unit, group, and individual levels (Schuler and Jackson 1986). Understanding on definition of stress is further enhanced with stress being understood as a result of ineffective coping when demands made up on us ( internally/ externally) which we perceive as exceeding our adaptive resources.

If this stress is prolonged then lasting psychological and physical damage may occur (Taylor, 1992). These demands can come from the factors concerning work related or person related for the individual. The interlinking of work and non-work factors in their effects upon an individual has already been noted and is reinforced by one finding of a survey of 109 British companies by the mental health charity MIND (MIND, 1992) in which 63% of the companies surveyed said they believed that problems at work caused equal or more stress than personal problems. This prompts another definition, of *occupational* stress. Occupational stress is the sum total of factors experienced in relation to work which affect the psychosocial and physiological homeostasis of the worker (Weiman, 1977). The individual factor is termed a stressor and stress is the individual worker's reaction to stressors. To introduce some order to the terminology some writers have distinguished between 'stress', which they reserve mainly for inputs, and 'strain', which they apply to outcomes. Any force that puts a psychological or physical factor beyond its range of stability producing a strain within the individual could be understood as stress (Cummings and Cooper, 1979). To avoid misinterpretation of the terminology, casual factors of stress stimulus are called 'stressors' and the adverse reactions of the individuals to stressors is called 'strain' (Beehr and O'Hara ,1987). Strain could be understood as an overload condition experienced by an organism's control system when it attempts to maintain integrated functioning in the face of too many environmental challenges (Karasek and Theorell, 1990). Individual's ability to interpret a threat as a source of pressure and act to change his/her situation could be termed as coping (Williams, 1994). Two main paradigms were identified while understanding source of stress at workplace. These are transactional and interactional paradigms (Cox and Griffiths ,1995).

The interactional paradigm "focuses on the structural features of individuals' interactions with their work environment" whilst the transactional model is more concerned with the psychological processes underpinning those interactions and is "primarily concerned with

cognitive appraisal and coping. External stressors like work load, time pressure, or painful life changes as task demands are external demands, however, cannot operate on an individual unless they have been identified by him and internalized to become part of his set of internal demands (Schonpflug, 1983). Robbins (2001) defines stress as a dynamic condition in which the individual is confronted with an opportunity, constraint, or demand related to what he or she desires and for which the outcome is perceived to be both uncertain and important. A major contribution to understanding of stress originating from work was made by French, Caplan and van Harrison (1982) who defined the key elements in the person environment 'system' as [a] the extent to which an employee's abilities and attitudes meet the demands of the job, and [b] the extent to which the working environment meets the employee's needs, especially in respect of the encouragement the worker is given to make use of his or her knowledge and skills. French et al conclude that stress originating from work is likely to occur when there is a poor 'fit' in one or both dimensions. It should be noted that stress arises when the employee perceives there to be a mismatch. There may, of course, be discrepancies between objective or externally-observed reality and subjective perceptions. A range of stress symptoms can be attributed to uncertainty, noting that the event about which uncertainty exists may be associated with potentially important positive or negative outcomes (Schuler and Jackson 1986). The uncertainty "may partly underpin the effects of other hazardous job characteristics; for example uncertainty about desirable behaviours [role ambiguity] and uncertainty about the future [job insecurity] (Cox,1993). Uncertainty arises, at least in part, from non-involvement in the decision-making process and the information flows upon which such processes are based. Emotional distress, lowered self-esteem and job dissatisfaction result from nonparticipation [in decision-making] of workers (Sauter, Murphy and Hurrell 1992). Job Stress can be caused by environmental, organizational and individual variables. Organizational-based factors have been known to induce job stress for employees at the

workplace (Greenhaus & Beutell, 1985). A Major investigation on Job stress concluded that participation may be an important organizational mechanism for allowing employees to improve their adjustment to the demands of the job by having a say in the decisions which determine those demands (French, Caplan and van Harrison 1982). Participation in decision-making does not necessarily imply control, only some degree of input, although the two factors are often considered together. Actual control represents power to make decisions for oneself and its effects are observable. Murphy (1988) distinguishes between “perceived control [belief] and instrumentality [one can do something to influence the aversiveness of the event]. Controllable events hurt less than uncontrollable events.” Karasek and Theorell (1990) argue that high levels of skill give a worker control over which specific skills to apply (skill discretion) and maintain that “skill utilization and decision authority are so closely related in empirical studies.

### 3.2 Popular Models giving understanding about Job stress

**Demand-control model:** - Robert A. Karasek, Jr. (1979), researched heavily on mental strain caused by Job stress. He primarily looked into two key elements of job characteristics at gross level. Job Demand

and Job control/discretion were identified by him as two modifiable factors for job strain. As per this model, jobs are divided as

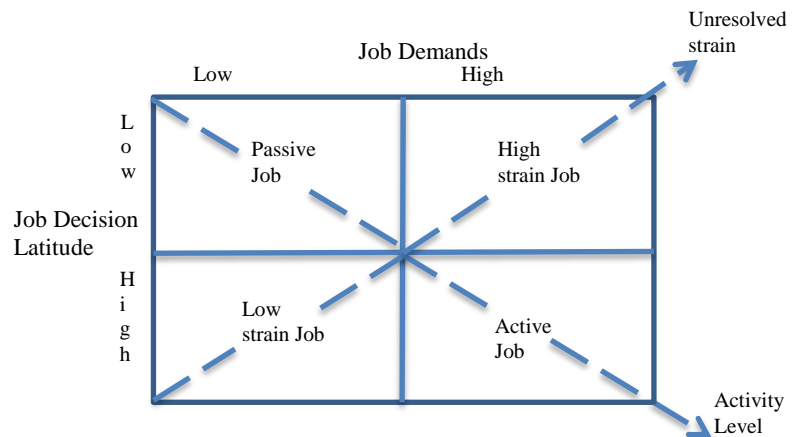


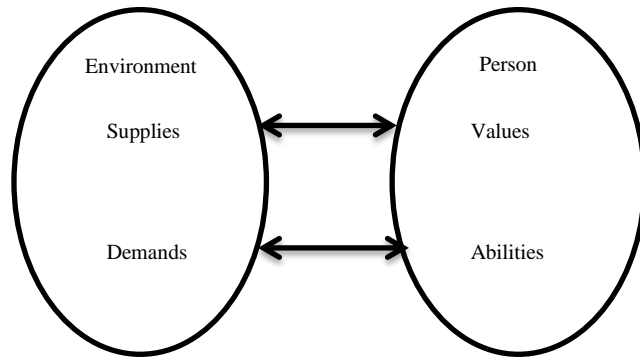
Figure3.2 :- Demand Control Model ( Source: R A Karasesk(1979))

passive jobs, high strain jobs, low Strain Jobs and active jobs. Passive jobs are those jobs which have low demands expected from Job and also have less control in decisions making in Job. This calls for less activity level from the worker as demands are low, hence it is called ‘passive job’. Certain type of jobs where individual would have ‘high’ control on decision making at job and also work demands from job are less, these are classified as low strain job. Other types of job, where work demands from job place are high , but control making capability is low, these are treated as ‘High strain jobs’ as it would cause higher mental strain. Final types of jobs as per this model are ‘Active Jobs’. In these jobs, both job demands and control at job place are high. This model argues that, this causes less strain on the mind as individual have more control on decision making at work place. This model revolves around two axis, which are shown diagonally here, which are ‘Unresolved Strain’ as well as ‘Activity level’. More job

strain is caused to the individual if job demands are high, but job controls to the individual are low as per Robert (1979).

**Person –Environment Fit Model (P-E model):-** The P-E fit model characterizes stress as misfit between person characteristics (e.g abilities, values) and Environment (e.g demands, supplies). There are two versions of

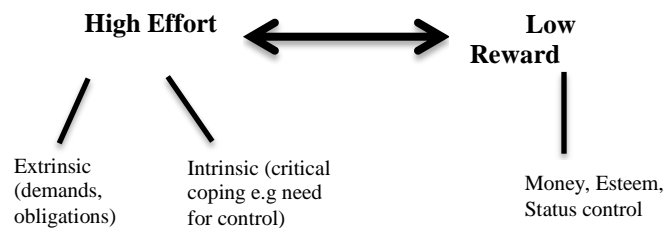
this model which further elaborates this concept namely S-V fit and D-A fit. In S-V fit version, the correspondence between environment supplies and person



goals, motives and values was Figure3.3:- Person Environment model ( Source: Cooper(1981))

discussed, where as in D-A fit version, the correspondence between environmental demands and person abilities, skills. As per this model S-V or D-A misfit causes negative psychological, physiological and behavioural patterns which could be collectively labelled as strain.

**High Effort – Low Reward imbalance model:-** Johannes Siegrist (1996), after reviewing many studies related to mental strain due to job stress, including Demand Control Model and Person Environment model, came to conclusion that reciprocity is the crucial element, which was not considered well in earlier related studies. He argued that, basic exchange capability (reciprocity) in



social life plays a crucial role in any individual's life. Occupational status of an adult plays an important role to maintain or modify the capability of reciprocity.

He maintained that the work role in adult life defines a crucial link between self-regulatory functions such as self-esteem, self-efficacy and social opportunity structure. This causes individuals to invest high effort on job to be in a position to expect high rewards, which in turn increases their reciprocity capability. This model argues that any negative imbalance between efforts spent and rewards gained would cause a state of emotional distress. This model coined a term called status control defining it is as an essential component to modify self-mastery, self-efficacy and self-esteem in any individual's life. Sustained emotional distress causes symptoms of fear, anxiety or irritation, which negatively effects ability to maintain status control. High effort at workplace is spent by workers to meet extrinsic demands and/or intrinsic needs. Extrinsic ones are the demands on the job, and intrinsic ones are the motivations of the individual worker in a demanding situation. Rewards were categorized as money, esteem and status control.

As per this model, money as a reward plays an important component to maintain/enhance the reciprocity capability. Status control at workplace, could be understood as ability to maintain control at work place which is aimed at avoiding job security threats as well as increasing opportunities at work place.

### **3.3 Personality factors and Job stress**

It was also observed that personality characteristics play a key role while perceiving stress scenario. The impact of a stressor is not invariant as personality [extroversion/neuroticism, anxiety, self-esteem], behavioral style, needs and values, ability and experience, ethnicity, age, and physical condition of the individual can play modifying role (Sutherland and Cooper, 1988). Payne (1988) groups these “individual difference” variables into genetic characteristics (physique, constitution, reactivity, sex, intelligence, introversion), acquired characteristics (social class, education, age), and dispositional characteristics (trait anxiety/neuroticism, Type A, self-esteem/self-image, locus of control, flexibility, coping style, extroversion). Williams (1994) finds three areas of individual difference: Type A/B personality, locus of control and hardy personality. The influence of these concepts on the understanding Job stress has been considerable.

Type of Person Behaviour: - In 1974 Friedman and Rosenman published the results of a major longitudinal study of the relationships between personality variables and coronary heart disease (CHD). Type A Behaviour Pattern could be understood as an action-emotion complex observable in any person who is aggressively involved in a chronic, incessant struggle to achieve more and more in less and less time, and if

required to do so, against the opposing efforts of other things or other persons (Friedman and Rosenman, 1974). Powell (1987) summarises characteristic over Type A behaviours to include drivenness, extremes of competitiveness, aggression, easily aroused irritabilities, work orientation, preoccupation with deadlines, and a chronic sense of time urgency. Type A individuals appear to be guarded, alert, and intense, with rapid and jerky body movements, tense facial and body musculature, and explosive speech. Friedman and Rosenman (1974) defined the opposite of Type A, someone who is completely free of all the habits and exhibiting none of the traits of the Type A personality, as Type B. Powell (1987) finds this unsatisfactory. Williams (1994) follows Powell in suggesting that there are two contrasting sub-components of Type A behaviour which should be considered separately: the “achievement-striving pattern” and the “impatient irritability pattern.” The former is positive and leads to successful performance outcomes, the latter is negative and may lead to adverse health outcomes.

Locus control: - The concept of locus of control (Rotter, 1966) is rather simpler to describe. Locus control deals with both internal control as well as external control. Internal control is when you feel that you make things happen. External control is when things happen to you. It’s the difference between managing your life and having it managed for you (Williams, 1984). The concept of locus of control is based on social learning theory (Bandura, 1982). An individual learns from his or her environment through “modelling” the past experience. Reinforcement of certain behaviours affects expectancy and expectancy leads to behaviour.

Phares (1976) found that in contrast to externals, internals exert greater efforts to control their environment. That is to say, people who believe they can exercise control over their situations make greater attempts to do so. Phares(1976) believes that, as a consequence, people with internal locus of control perceive less stress in their environments than externals.

Hardiness:- Hardiness could be understood as a stronger commitment to self, an attitude of vigorousness towards the environment, a sense of meaningfulness, and an internal locus of control (Kobasa ,1979). In further studies (Kobasa, 1985),she identified three key characteristics of hardy personalities: commitment, control and challenge. She defined commitment as the ability to believe in the truth, importance and interest of what one is and what one is doing and thereby the tendency to involve oneself fully in the many situations of life, including work, family, interpersonal relationships and social institutions. Control is the tendency to believe and act as if one can influence the course of events and challenge is the belief that change, rather than stability, is the normative mode of life. As a result of extended research it was concluded that -among people facing significant stressors, those high in hardiness will be significantly less likely to fall ill, either mentally or physically than those who lack hardiness or who display alienation, powerlessness and threat in the face of change(Kobasa, 1985).

Other personality attributes: - Along with above various other personality attributes like neuroticism, trait anxiety etc are also believed to be playing a key role while perceiving stress scenario Payne (1988).

### **3.4 Organisation factors and Job stress**

Uncertainty at work place also causes stress. Schuler and Jackson (1986) attributed a range of stress symptoms to uncertainty, noting that the event about which uncertainty exists may be associated with potentially important positive or negative outcomes. Cox (1993) believes that uncertainty may partly underpin the effects of other hazardous job characteristics; for example uncertainty about desirable behaviours [role ambiguity] and uncertainty about the future [job insecurity]. Career factors also play key role in work life. According to Burke (1988), one of the most dramatic changes in organizations during the past few years has been the change of traditionally secure managerial and professional jobs into insecure ones. In today's world of anxiety, workers often are "anxious" about their current/ future job. The charity MIND in its survey of 109 British companies (MIND, 1992) found that 88% of its respondents cited recession, fear of redundancy and pressure to perform as the main causes of Job anxiety, which caused them stress from work place. Coe (1993) in a survey of 2500 members of the Institute of Management [with a 40% response rate] found that 71% were either "very anxious" or "anxious" about the possibility of redundancy, 76% either "very anxious" or "anxious" about lack of job security and 75% either "very anxious" or "anxious" about lack of career opportunities. Winkfield (1995) surveyed 1231 people in full or part-time work and found that 41% were "very or fairly concerned" about being redundant or being unemployed in the next twelve months, whilst 24% felt "less or much less secure" in their jobs than they had one year before. Burke (1988) draws attention to "the small amount of data that exists" which indicates that the effects of job insecurity appear to be similar to job loss itself. Cox(1993) identifies two prominent sources of stress arising from an individual's role within an organisation; role ambiguity and role conflict.

He defines role ambiguity as occurring when a worker has inadequate information about his or her work role. Role conflict occurs when individuals are required to play a role which conflicts with their values, or when the various roles that they play are incompatible with one another (Cox, 1993). Relationships and interpersonal factors also play a modifying role on job stress for individuals. Poor relations with colleagues, supervisors and subordinates at work have been identified as important risk factors for stress-related problems (Sauter, Murphy and Hurrell 1992). The nature of the task assigned to workers also plays an important role in job stress. The nature of the task performed has critical implications for psychological well-being. In particular, narrow, fragmented, invariant and short-cycle tasks that provide little stimulation, allow little use of skills or expressions of creativity and have little intrinsic meaning for workers have been associated with job dissatisfaction and poor mental health (Sauter, Murphy and Hurrell, 1992). Overload, that is, having more work to do than one can comfortably handle, appears to have a more direct connection with strain. Margolis, Kroes and Quinn (1974), in a study of 1496 workers found that overload correlated positively with several indicators of stress reactions, including low motivation, low self-esteem and absenteeism. A variety of physical and environmental factors can have an effect on the stress experienced by a person in the workplace.

### **3.5 Job anxiety and Stress**

In the present “age of anxiety” one’s path to success has been rendered extremely difficult owing to both environmental variables and psychological characteristics of the individual ( AK Srivatsava, 1977). Researchers working in the field are in agreement that anxiety is a mental state primarily driven by apprehensions and fear. Anxiety can either be stimulus related, referred as state anxiety or general in nature referred as trait anxiety (B. Muschalla . et al, 2013). Grinker(1966) also pointed out that methods of producing anxiety also depends on the personality traits of the individual. For the woman/man of modern age, being in paid working positions is becoming increasingly important. People prefer to engage in some job where they generally end up spending more number hours in day. Anxiety which pertains to job life of an employee who gets unnecessarily fearful, apprehensive, pessimistic and emotional regarding components of his/her own work may be referred to as ‘job anxiety’(H.N.Prasad,1994). Job anxiety could also be understood as general feeling of fear and apprehensive mind set of the employee regarding various job-components in relation to his /her frame of reference or his/her psychological make-up ( AK Srivastava, 1977). Job anxiety is also a form of state anxiety, driven by job related stimulus. With prolonged stress, workers would be anxious to complete the tasks with quality failing which they succumb to fear of current job/ opportunity termination. This leads to Job Anxiety. Job anxiety is state anxiety than a trait anxiety.

According to Eysenck (1983) Job anxiety has a moderating effect on task performance. Based on an experimental work done, he further elaborates that

Job Anxiety leads to increased task-irrelevant cognitive activities (eg:- worry).

Job Anxiety leads to increased effort during task performance most of the time.

Job Anxiety reduces digit-span performance (working memory capacity).

Job Anxiety interacts with task difficulty, with adverse effects of anxiety growing as task difficulty increases.

Job Anxiety induced by failure impairs the retrieval process

Low levels of Job anxiety can have motivating effect, however high levels of Job Anxiety would impair the task performance (Cox, 1993). Jones et al (1988) for example found a positive correlation between levels of Job anxiety in health care staff and the number of medication errors made. This is in accordance with Eysenck ( 1983) observation.

It is observed that job anxiety may influence perceived stress at workplace. It is also observed that job anxiety has moderating effect on role stress (Srivastava ,1985) . There are few studies done about association of job anxiety with depression, perceived stress, work phobia and job satisfaction. It was also observed that personality characteristics of individuals influence anxiety traits in the individuals.

Below is the literature survey done to understand existing studies performed related to Job anxiety.

AK Srivastava (1977) did a detailed study on components influencing 'Job-Anxiety' and came to an understanding that Job-Anxiety is influenced by both work life and personal life. He concluded that components like security, recognition, human relations at work, reward and punishment, self-Esteem, future Prospects and capacity to work influence Job anxiety.

During a study performed on pre-registration house officers, it was observed that stress, anxiety and depression scores were significantly correlated with neuroticism score in both men and women. It was also observed that personality characteristics of neuroticism were a predisposing factor for stress and anxiety in junior doctors (D Newbury-Birch et al., 2015).

A study performed on Library employees, revealed that degrees of job anxiety are related to job satisfaction in different ways. This study also further confirms the theory that interpersonal relations have moderating effect on job anxiety (H N Prasad, 1994).

A study done on self- perceived Job insecurity, based on representative data from 17 European countries, reveals that job insecurity is also driven by not only by social structural or institutional differences , but also by cultural characteristics (Marcel Erlinghagen, 2007).

It is also noticed that Job anxiety can also lead to work related phobia, which is panic when approaching or thinking about work. It was observed, from a study performed on primary care patients with chronic mental disorders, that work-related anxiety may play significant role on work related phobia (Beate Muschalla et al.,2014).

A study performed on male assembly automotive workers in Malaysia revealed that depression, anxiety and stress are important mental outcomes in stressful working settings.It was further suggested that reduced psychological job-demand, Job – insecurity and hazards conditions factors may improve self-perceived depression, anxiety and stress (Bin Abdin Edimansyah et al., 2007).

A quantitative study performed on automotive workers in Malaysia, revealed that depression, anxiety and stress due to work conditions has mediating role on perceived quality of life (Bin Nordin Rusli et al., 2008).

A study performed on employees from different professional settings of Germany, revealed that Job anxiety is different from trait anxiety and Job anxiety could lead to work avoidance and sickness absence (B. Muschalla, 2013). A quantitative study performed on automotive workers in Malaysia, revealed that depression, anxiety and stress due to work conditions has mediating role on perceived quality of life (Bin Nordin Rusli, 2008).

### **3.6 Outcomes and consequences of Job stress from early Research**

Stress itself is not an illness, rather it is a state. However it is a very powerful cause of illness. Long-term excessive stress is known to lead to serious health problems (Teasdale and McKeown, 1994). Cox (1993) reviews a number of studies in the field of psychoimmunology which strongly suggest a connection between the experience of stress and changes in the operation of the immune system, which Cox considers as a possible mechanism by which stress may lead to ill-health. The experience of stress does not necessarily have pathological sequel, but stress may affect health. At the same time, however, a state of ill health can act as a significant source of stress, and may also sensitise individuals to other sources of stress by reducing their ability to cope. Within these limits, the common assumption of a relationship between the experience of stress and poor health appears justified (Cox, 1993). There is a body of evidence to support this assumption. Russek and Zohman (1958) compared young (25-40) CHD patients with a healthy control group and found that whilst only 20% of the control group reported prolonged stress related to work, where as 91% of the CHD patients did so. Weiman (1977) reports a study of 1540 officers of a "large financial institution" who were subjects of periodic health checks including a questionnaire on stress emanating from job. It was found that, there was a significantly higher incidence of disease when particular stressors are operating. It was also evident that disease/risk occurs more frequently when workers were either under-stimulated or overstimulated, as hypothesized by Selye (Weiman ,1977).Correlations between job stress/strain and serious illness are thus shown in a wide variety of studies over generations of researchers. As with other aspects of human health, though, the association is one of probability, not of certainty.

Some of early researchers were also in confusion to attribute visible health symptoms to stress coming out of work place (job stress). Fletcher(1988) described the issue as he perceives , “It is difficult to estimate the size of any problem when the outcome variables have multifactorial ‘causes’ and one is particularly interested in one aspect of aetiology (i.e work stress). This is not an issue peculiar to the psychological investigation of disease. It should be borne in mind that the standard physiological and medical risk factors for coronary heart disease or lung cancer are not good predictors of the degree or incidence of the clinical manifestations of the disease. For example, Eysenck has pointed out that only 10% of smokers die of lung cancer and 10% of people who die of lung cancer are non-smokers. In addition, the 10-year incidence of CHD will be made up of 40% who have no evidence of significant risk factors, and only 10% of those with such risks will have developed CHD.”

Whilst heart disease is one of the more dramatic effects of stress/strain, Cooper (1994) points out that: “it must be remembered that heart disease is only one of the physical manifestations of an unhealthy organisation, research shows that there are many more possible diseases and negative healthy outcomes (eg gastro-intestinal disorders, immune system failures, neurological problems, etc.)” Alfredsson, Karasek and Theorell (1982) studied 334 men under 65 with myocardial infarction (including deaths), with 882 matched controls. They report an increased risk of myocardial infarction from a combination of “hectic work pace” and low decision latitude and/or few “possibilities for growth.” Murphy (1988) lists a “host of physiological changes” which may occur when an individual is faced with uncontrollable events or situations (or ones perceived as uncontrollable), including increased heart rate, increased hormone production and decreased immunological activity, comparing these responses to the ‘fight or flight response’.

In a major study of 1600 Swedish working men in 1968, it was found that 20% of workers “who described their work as both psychologically demanding and low on a scale measuring latitude to make decisions” reported heart disease symptoms (Karasek and Theorell, 1990). In a later study of 1461 employed men by Karasek et al (1981), it was found that low decision latitude “expressed as low intellectual discretion and low personal freedom” was associated with increased risk of cardiovascular disease, as was “a hectic and psychologically demanding job.” Cox (1993) comments that it is not clear from the literature whether change per se is stressful or hazardous to health and well-being, or whether “its possibly stressful nature is due to the uncertainty and lack of control which it often represents.” Winkfield (1995) surveyed 1231 people about their attitudes to change at work. 57% agreed that they could cope with changes “if they knew what was going on.” 35% agreed that they were under more stress now because of changes, although 45% agreed that changes at work meant new opportunities. The work from Winkfield is valuable to demonstrate on how change is perceived differently by each individual. One of the other causes of stress coming from workplace or occupation is increase in accident rates at work place. Carter and Corlett (1981), in a review of the literature on mental health and involvement in accidents, reported that the mental state acquired from work, whether he/she was fatigued or over-aroused, alert or distracted, has been the most frequently suggested reason for accident-causation during workhours. Cartwright et al (1993) studied accidents involving company car drivers from three subsidiaries of a major company, and related them to stress levels. They found the highest rates in the subsidiary which also returned higher levels of occupational stress, poorer physical health, poorer mental health and lower job satisfaction.

They concluded that the significantly higher levels of occupational stress plays major role in predicting accident rates at work place. Prolonged exposure to stress can lead to burn out. An individual's negative emotional experience leading to a chronic process, experienced as exhaustion on a physical, emotional and cognitive level could be termed as burn out (Sonnentag et al, 1994). Burn out may also cause withdrawal and decreasing involvement in the job, especially by persons who have been highly involved in their work. Sonnentag et al associate burnout with workplace stressors especially in professional groups with high motivation potential. The implications for organisations , which create stressful workplaces for its employees may be economic as well as humane. Cox (1993) identifies from the literature, several effects of stress which he believes may be of direct concern to organisations. Some of these, such as reduced availability for work involving high turnover, absenteeism and poor time keeping. He classifies these symptoms as essentially 'escape strategies. Others involve what is described as 'presenteeism' - people continue to report for work but their performance and involvement is poor. Cox suggests that this may result in impaired work performance and productivity, with consequent increases in client complaints. Fingret (1994) also emphasizes the damage caused to organisations by presenteeism, claiming that occupational health practitioners and psychologists are well aware of significant levels of stress and psychological maladjustment which have not resulted in significant sickness absence. Fingret argues that this may be even more damaging to business efficiency that the absences which though carrying physical illness labels, are in fact related to lack of mental well-being.

Cooper (1994) refers to the huge costs about people turning up to work who are so distressed by their jobs or some aspect of the organizational climate that they contribute little, if anything, to their work. In organisations which bank on creativity and initiative, job stress effects may be even more pronounced. The relationship between characteristics of the workplace and health has been primary subject of research interest, and it is also observed that both work related stressors and non-work related stressors effect mental health of the individual independently (Clark C et al, 2102). When stress experienced at workplace (Job stress) is higher than the individual's tolerance level, then task performance is also found to be impaired. This is in accordance with Selye (1982) theory that under stress people often perform at higher levels, but if the stress continues for prolonged time, exhaustion sets in and leads to a range of problems. Sommerville and Langford (1994) surveyed 54 site-based managers of construction projects and found evidence that workplace stressors contributed to conflict. They suggested that attention to reducing stressors would have a beneficial effect in reducing the incidence of conflict. Workplace stress may also have a deleterious effect on personal and family relationships (Gutek, Repetti and Silver, 1988). Costs arising from employers' responsibilities for the well-being of their employees may also become significant. Cox (1993) believes that the UK courts will be increasingly willing to hold employers liable for stress-related health problems. Aiken (1995) argues that an employer has a duty to provide a safe system of work, which may include taking account of work place stress issues where they are known to exist. As personal and organizational costs of Job stress/strain are high, the burden on the wider economy is also significant.

Stress and lack of well-being in the workplace cost around 25.9 billion GBP per annum in terms of sickness absence, presenteeism and labour turn over in UK; and finally, that with people living substantially longer, the cost of dementia over the next 30 years will rise from the current cost base of 17 billion GBP to 50 billion GBP. (Cooper, 2010).

### **3.7 Coping and Job stress**

Coping could be understood as cognitions and behaviours adopted by the individual following the recognition of a stressful encounter, that are in some way designed to deal with that encounter or its consequences (Dewe, Cox and Ferguson, 1993). Edwards (1988) presents a theoretical approach to coping, resting on a central assumption that stress produces negative impacts on well being and a motivation to reduce these impacts. Edwards argues that initially, coping effort is directed towards changing situations or people which are causing stress. If these attempts prove effective then stress is reduced and well-being improved. There is an important secondary effect in that successful coping as it helps to move the locus of control towards the internal, and thereby increases the confidence with which future coping attempts will be made (Williams, 1994). Coping usually represents either an adjustment to the situation/stressor or an adjustment of the situation/stressor (Cox and Griffiths, 1995). An individual's stress reaction depends on how he or she "interprets or appraises" (consciously or unconsciously) the significance of a threatening or challenging event. This cognitive appraisal involves assessment of the demands being made upon the individual, the constraints under which he/she has to cope, the support he/she receives from others, and personal characteristics and resources (Cox and Griffiths, 1995).

When there is insufficient information required for appraisal, or the meaning of the available information is unclear, then ambiguity or uncertainty affect the coping process. Lazarus and Folkman (1984) assert that ambiguity is itself a source of threat. Faced with ambiguity “person factors shape the understanding of the situation,” so that, for example, people with low trait anxiety report a significantly greater expectancy of avoiding shocks than those with high trait anxiety (Lazarus and Folkman, 1984). Cox and Griffiths (1995) define coping resources as “energy, knowledge, attitudes, behavioural style (or personality) and skills (including social and cognitive skills).” Moos and Billings believe that self-concept is highly significant in determining the effectiveness of coping. Self concept includes specific elements such as locus of control and “sense of mastery” which seems to be a very similar attribute to locus of control. It also includes “competent self,” (a set of favourable self-attitudes) and “self-efficacy.” People with high levels of self-efficacy “may be more active and persistent in their efforts to handle threatening situations” whilst people with lower levels may be more inclined to favour avoidance strategies (Moos and Billings, 1982). Bandura’s Social Cognitive Theory (SCT) (1997) also stresses on Self-efficacy to play an important role in coping procedure adopted to confront stressful situations. The SCT advocates that individuals tend to undertake behaviours that they believe will result in a better outcome. Defined as the belief in one’s competence to cope with a broad range of stressful or challenging demands, general self-efficacy is a very important factor in shaping the meaning that people ascribe to situations ( Bandura, 1997).

### **3.8 Coping and Emotional Intelligence**

There is not much research done on effect of emotional intelligence in adopting effective coping strategies for stressful situations. Below are few of the available studies

In a study performed on 593 introductory psychology students, it was observed that participants who scored high on Emotional intelligence have used adaptive profile of coping with stress (Carmen Velasco et al., 2006).

Studies conducted with nurses or nursing students have shown that emotional intelligence is a skill that minimizes the negative stress consequences by making the individuals use “problem solving” coping techniques (B Monteus-Berges , JM Augusto 2007).

In a study performed on a general population sample of 253 predominantly Caucasian respondents, it was found that participants who scored high on emotional intelligence tend to use effective coping techniques to tackle stressful situations ( Paul Rogers et. Al, 2006). This is in accordance with Moos and Billings (1982) statement that people with high ‘self-efficacy’ are persistent to handle stressful situations in both work life and person life.

It was also found that low emotional intelligence employees are more likely than high emotional intelligence employees to experience negative emotional reactions to job anxiety and to adopt negative coping strategies (Peter J. Jordan et al., 2002).

With above studies, it could be concluded that Emotional Intelligence plays modifying role in adopting coping strategies which in turn influence the long term impact of stress on the individual.

### **3.9 Emotional Intelligence (EI)**

Mayer and Salovey (1997) define emotional intelligence as “the ability to perceive emotions, to access and generate emotions so as to assist thought, to understand emotions and emotional knowledge, and to reflectively regulate emotions, so as to promote emotional and intellectual growth.” Thus EI comes in four parts: identifying, assimilating, understanding, and managing emotions. It is not the opposite of intelligence; it is a meeting of head and heart. Emotional intelligence, defined as ability, is something new and unique. The popular claim that it is twice as important as IQ is misleading. “In some life domains emotional intelligence seems more highly correlated with positive outcome than in measuring of an IQ...soft domains where emotional self regulation or empathy may be more salient skills than are purely cognitive skills (e.g. marital success or health)” (Goleman, 1999). Since emotional intelligence is a kind of intelligence, it is worth reviewing work on E.Q. similar to I.Q. in job stress based research. Alfred Binet is often cited as the man who developed the first “intelligence test” in the form we know today. He is commonly known as the father of IQ testing. In 1905 he created the Binet-Simon scale (with Theodore Simon), the first intelligence test for students in French. Binet's test consisted of a series of 30 short tasks related to every day problems arranged in order of increasing difficulty. It was revised in 1908 and 1911. In 1927, Charles Spearman applied factor analysis to associations between

experimental intelligence tests available at that time, and proposed two distinct types of intelligence: a general ability (g) required for performance of mental tasks of all kinds, and special abilities associated with each kind of mental test. He held that 'general' intelligence was most important. Spearman's hypothesis was further developed by Thurstone, who, though he accepted the concept of the general factor "g" disputed its importance. Thurstone argued that, in reality "g" is a second order factor, which arises because the primary, first order factors are correlated with one another. Thurstone identified seven 'primary mental abilities', which he judged to be more important than "g". Not being supported by subsequent research, Thurstone's tests have been abandoned, but his main argument is still important. Intelligence is better described and measured by considering distinct, different mental abilities, rather than a single factor "g", which does not provide any information about specific intelligences. Steinberg's (1985) popular concept of multiple intelligence or multiple facets of intelligence, explained in more detail below. That said, the g factor has its importance and is usually associated with such aspects of "intelligence" as reasoning, problem solving, abstract thinking, and quick learning. It describes a mental aptitude rather than accumulated knowledge. Other forms of intelligence have been proposed: besides multiple intelligence, the best known are emotional intelligence, and practical intelligence (being 'street-smart', having localized knowledge and survival skills). Emotional intelligence is of fundamental importance, since it is closely connected to emotional stability, one of the five distinct and independent personality 'factors', recognized by current research methods in factor analysis.

The five personality factors are: emotional stability, extraversion, conscientiousness, agreeableness, and openness to experience. Each relates to a different aspect of personality. Research has shown that although shared environments do have a modest influence on IQ in childhood, these effects seem to disappear by late adolescence. Such findings suggest that siblings either do not share influential aspects of the rearing environment or do not experience them the same way. Both Sternberg and Gardner posited that everyone uses multiple forms of intelligence. Each is independent, relevant to, and predictive of, specific work or life outcomes. For example, Sternberg has developed a triarchic model of intelligence, in which he suggests that three intellectual abilities are important to success in academic, professional, and social life: analytical, creative, and practical intelligence respectively. Memory and analytic abilities are used in learning, comparing, analyzing, evaluating, and judging material; creative, synthetic abilities are used, when one produces something new from a synthesis of different material, or develops a novel interpretation of an ordinary situation i.e. being creative and innovative, possibly involving coping in new ways with various work and social situations; practical contextual abilities are those used to confront everyday problems encountered in day-to-day experience i.e. understanding how the world ‘works’ and how to get along in it, whether based on formal or informal knowledge. Practical intelligence is closest to being street smart. Gardner presented a related view of intelligence (1983). Recent research suggests that both Sternberg's and Gardner's models of “intelligence” are predictive of diverse measures of success and failure on the job and in life.

In modern science EI can be seen in Darwin's (1872) emphasis of the importance of emotional expression for survival and adaptation. Early in the 20th century, definitions of intelligence emphasized aspects such as memory and problem solving, involving cognition. Then researchers began to recognize non-cognitive aspects of intelligence e.g. the term social intelligence was used to describe the skill of understanding and managing other people. Wechsler had described the influence of non-intellectual factors on intelligent behavior, arguing that our models of intelligence would not be complete until we describe them.

Later in the 20<sup>th</sup> century, Gardner introduced the idea of multiple intelligence in his book, *Frames of Mind: The Theory of Multiple Intelligences* included Interpersonal intelligence (the capacity to understand the intentions, motivations and desires of other people) and Intrapersonal intelligence (the capacity to understand oneself, to appreciate one's feelings, fears and motivations). He pointed out that measures of intelligence, like IQ, fail to explain cognitive ability. It was recognized that traditional definitions lack the ability to explain performance outcomes. These concepts have all the hallmarks of emotional intelligence, without actually using that name. In particular, they suggest that the ability to handle feelings and emotions successfully requires two completely different kinds of brain function, cognition and affect, or intelligence and emotion. That these two different kinds of function should be connected turns out to have a good neuroscientific foundation. There are large bundles of nerve pathways connecting the midbrain, which concerns emotion, to the cortex where cognitive processes take place. Goleman specifically suggests that five different kinds of ability are involved in EI: self-awareness, self-regulation of emotions, motivation, empathy and social skills. A consequence of this variety of processes involved in EI is that it is very difficult to define. Mayer and Salovey (1997) suggest: "the ability to perceive emotions, to access and generate emotions so as to assist thought, to understand emotions and

emotional knowledge, and to reflectively regulate emotions, so as to promote emotional and intellectual growth.” Two better attempts are due to Handley and Rock. Handley defines EI as, “the ability to appropriately guide one’s emotional responses to events and to act on these emotions in a appropriate manner”, clearly related to Goleman's competency approach.

Rock (2000) proposes: “Emotional intelligence is the ability to engage our emotionality in intelligent ways in order to facilitate constructive outcomes in our relationships”. However, it is defined; Emotional Intelligence is of fundamental importance. It has a place distinct from IQ. Goleman points out that IQ loses its predictive power when everybody is smart (the restriction of range problem). While IQ is important, it does not cover all eventualities. EI is closely connected to emotional stability, one of the five distinct and independent personality ‘factors’, recognized by individual differences in psychology, and it is an important indicator of professional success or failure, as Goleman has repeatedly emphasized. Emotional intelligence is now an important aspect of corporate training. No company wants its managers to alienate staff. An interesting point is that there is a good basis in neuroscience for believing that EI training programs can be effective. The prefrontal cortex, amygdala and hippocampus, all involved in the perception, use and management of emotions, are all sites where plasticity occurs in animals. Such plasticity has also been observed in the adult human hippocampus. Plasticity means that new neural connections can be made and that learning can take place.

## **MEASURES OF EMOTIONAL QUOTIENT (EQ)**

The first study of "Emotional Intelligence" is in a 1985 PhD thesis: *A study of emotion: Developing emotional intelligence* by Wayne Payne. Payne did not publish his theory, so the first reference in the referred literature is Salovey and Mayer (1990). Bar-On (1988) coined the term EQ (emotional quotient) to describe his approach to assessing emotional and social competence. He applied his concept of EI to personality, health and well-being, and created the Bar-On Emotional Quotient Inventory, EQ-I, the first test of emotional intelligence published by a psychological test publisher (1997). Salovey and Mayer (1990) published an overview of emotional intelligence, concerning interactions between emotion and reasoning. Later, in the Mayer-Salovey-Caruso EI test (MSCEIT), they developed a comprehensive assessment, which has had a large impact on the field. In the popular imagination, the person most commonly associated with EI is Daniel Goleman, the Harvard psychologist, whose 1995 best seller, *Emotional Intelligence*, brought the field to prominence. Goleman popularized EI in terms of a model of organizational and job performance. After starting EI research in business and industry, he published two further books, *'Working with Emotional Intelligence'* (1998), and *'Primal Leadership – Realizing the power of Emotional Intelligence'* (2002). McClelland (1975) was perhaps the first to propose the concept of competence as a basis for identifying what differentiates outstanding from average performers at work. McClelland (1998) reviewed data from more than 30 different organizations and for executive's positions in many professions, from banking and managing to mining, geology, sales and health care. He showed that a wide range of emotional competencies (and a narrow range of cognitive ones) distinguished top performers from average ones.

The current upsurge of interest in emotions at the work- place owes largely to the ideas of Goleman (1996, 1998) who observed that getting others to respond in a desired way is the heart of Emotional Competence (EC). At the heart of EC are two abilities empathy, which involves reading the feeling of others, and social skills, which allow handling those feelings artfully. Our emotional intelligence (EI) determines our potential for learning the practical skills that are based on its following five elements i.e. self-awareness, self-regulation, empathy, adeptness in relationships, and motivation. EC shows how much of that potential we have translated into on the job capabilities. For instance, being good at serving customers is an EC based on empathy, likewise, trustworthiness is a competence based on self-regulation or handling impulses and emotions well. Both customer service and trustworthiness are competencies that can make people outstanding in their work. Simply being high in EI doesn't guarantee a person will have learnt the EC that matters for work; it means only that they have excellent potential to learn them. EC clusters into groups, each based on common underlying EI capacity The EC framework basically measures the two types of competencies self competence consisting involving self- awareness, self- regulation, and motivation and social- competence consisting two dimensions i.e. empathy and social skills. EC is a personal trait or a set of habits that leads to more effective or superior job performance. In other words, it is an ability that adds economic value to the efforts of a person at the workplace. Since emotional intelligence and emotional competence comprises a large number of abilities, which psychologists have studied for many years, another way of testing emotional intelligence is thus through tests of specific abilities. Seligman's SASQ (2004), designed to measure learned optimism, and has been impressive in its ability to identify high performing students, sales people, and athletes.

Indian Researchers have both used the available tests from the west and have also developed their own. There are three fully developed tests and many attempts to create new ones. The rationale of this effort is that emotions and their management are culture specific and tests developed in other culture have limited applicability. This is also echoed in the work of Geetu Orme in U.K. who while acknowledging that MEIS TM has high face validity despite its US origin finds that some of the results show that UK managers have lower EI scores than their US counterparts which is difficult to explain. It may be too early to conclude whether it will be possible to have one universal test for all ethnic groups which is sensitive or whether each distinct culture has to develop its own test instruments which are sensitive to its environment and values. When emotions become center -stage (the important role they play in linking personality with intelligence), culturally grounded processes assume critical importance. Reviewing researches in the area of EI, Thingujam (2002) rightly stated that “just because the items are understandable in India, does not mean that the conceptions of EI or the most culturally relevant items to measure these conceptions would be the same across cultures.” Cultural values and culture’s conception of personhood need to be included to account for both intelligence and personality. According to Geertz (1975), the western notion of the person as a ‘bounded, unique, more or less integrated motivational and cognitive universe, a dynamic center of awareness, emotion, judgment and action organized into a distinctive whole and set of contrastively both against such wholes and against its social and natural background is not considered universal as in the non-western cultures, self is construed as interdependent, socio-centric, allo-centric, ensemble, embedded, and constitutive.

In such societies collective sentiments and interests of family and caste predominate over the individual's autonomy and liberty. They subscribe to a biological, organic and holistic view of life, a sacred and liberative view of knowledge, social individualism and distributed notion of control. In contrast the western culture promotes an individual centered world view, emphasizes knowledge as a means of to control others and seek power and personalized control. According to Subhash Sharma (2007), emotional learning in the Indian context needs to be viewed as a life-long process of personal investigation (looking inward) towards the discovery of true-self. The Indian view of emotional learning may, therefore, be related to the construction of self through the process of self-perception and self –monitoring. The culture - specific ways of behaving are basic to the notion of EI. Through different religious and health customs, the Indian tradition has also emphasized some independent and inter-related concepts in relation to stress and suffering. The principle of detachment involves one viewing pleasures and suffering with equanimity. श्रीमद भगवतगीत combines these virtues of detachment and impulse control in a personality type, स्थितप्रज्ञा. Similarly the concept of निष्काम कर्म is central to cognitive functioning and health. Many Indian researchers have critically examined the various EI measures available, used them in local situations and reported the results. They are a mixed bag. For example, Sinha and Jain using Bar-On (1997) report that considered alone as a construct, may not be robust enough: but it had a significant impact on the organizationally relevant outcomes. Chadha, 2003's measure on Emotional Quotient is one of the few popular measures in Indian context in measuring Emotional Intelligence.

### **3.10 Job stress and Indian IT Professionals**

Most of Indian IT industry growth is in Service sector. IT professionals are always under constant pressure to deliver services efficiently along with being cost efficient. This requires to plan for ever changing customer requirements and forecast market demands in advance , so as to deliver services/products in “first time right” approach. In this web- connected world, time is the most precious thing for all the customers round the globe for IT professionals. This means Indian IT professionals need to continuously align to the customer country time-zones. As IT based projects are generally short-term, IT professionals may need to re-align to different time zones if they change to different country customer bases. As IT professional’s work involves heavily with computer terminals for longer durations, it results in less physical activity for these professionals. Lack of physical activity would lead to physical fatigue of the body and it would eventually cause the individual, stress at physical level. Longer working hours with video terminals has negative impact on the comfort of human-eye. IT related projects are generally “short-term contracts “with its duration ranging from few months to couple of years. Customers always want to demand more from IT professionals as they expect to have high returns in their business by using computer intensive processes. This demands IT professionals to continuously update their skill sets in using latest trends in IT based technologies, failing which they may loose business with customers. There is a growing recognition of the important role of mental health in the workforce and in the work place (Moodie and Verins, 2002). The relationships between psychological working conditions and common mental disorders have been studied internationally (Stansfeld and Candy 2006;).

Work can be defined as the application of mental or physical effort to a particular purpose. ( Anthony D LAMontagne, Tessa Keegel et al. 2010). Work is a central determinant of health and health inequalities, both promoting and detracting from health through a number of pathways(WHO 2003; LaMontagne and Keegel 2009). Job stress has also been strongly linked to poor physical ill health outcomes such as musculoskeletal disorders and cardiovascular disease ( Marmot,Bosma et al. 1997; Bongers, Kermer et al. 2002; Belkic, Landsbergis et al. 2004). Enormous increase in opportunities in Information Technology industry in India also resulted in increase of job stress among its professionals. According to the inaugural Asia Pacific edition of the Staying@Work survey conducted by global professional services company Towers Watson in the year 2014, few of the main reasons for stress among Indian Information Technology professionals are, (1)unclear/ conflicting job expectations, (2) uneven workload and (3) lack of work/life balance. According to the same survey *Stress is the number one lifestyle risk factor among the employees*, ranking above physical inactivity and obesity. In a study on Work Stress among Information Systems Professionals( Strine TW , et al, 2004)] ,it was found that employees reported the commonly experienced feelings such as frustration, pride in accomplishments, being overwhelmed, anxiety . According to the same study, common stress symptoms among Information system Professionals are decrease in energy, anxiety, muscle tension, headache, stomach upset, negative thinking and insomnia.

The existing work conditions generate lot of Job Anxiety and stress to most of India based IT professionals. Though some research work is already done on Job stress related components on IT professionals, more detailed work is needed. Below is brief review of literature on Job stress of IT Professionals in general and Indian IT professionals in particular.

In a cross-sectional study performed on 1071 professionals from IT and IT enabled Services, working in Bangalore (IT capital of India), alarming facts were found: 31% of professionals are found to be hypertensive with approximately 5% having malignant levels of hypertension (Babu GR et al., 2013). This is only tip of iceberg when it comes to health impacts of this unmanaged Indian IT industry growth for its professionals as one cannot ignore health issues like Asthma, back pain, peptic ulcer etc.

Darshan et al (2013) in their study on professional stress, depression and alcohol use among Indian software professionals, observed that the software employees are professionally stressed due to job conditions and are at 10 times higher risk for developing depression and also there is a significant increase in the incidence of psychiatric disorders.

In a cross sectional study on 200 IT professionals working in Delhi, with varied job profiles viz. software developers (82), call center (54) and data entry/processing (64), it was found that the frequency of computer related problems in the study group were: visual problems around 76%, musculoskeletal problems around 77.5% and stress around 35%. The problems were comparable among females (96.7%) and males (91.3%). Females experienced significantly more musculoskeletal problems, while stress perceived was significantly more by males.

The extent and type of problems in IT professionals varied with their job profile. As many as 96.3% subjects in software development and 92.6% in call center had computer related problems as compared to 89.1% in data entry/processing group. The visual problem and stress was significantly more common in subjects working in software development, while musculoskeletal problem was more prevalent among data entry/processing operators. The common visual problems seen were redness (37%), burning and/or tiredness (31.5%), headache (29.5%), pain in the eye (23.5%), itching (22.5%) and watering of eyes (19%). The refractive error was present in 23.5% of the subjects and 16.5% had dryness by Schirmir's test. The occasional occurrences of discomforts were more common than daily discomforts ( AK Sharma et al., 2006).

It was also suggested that most of the factors which generate stress among IT personnel in Singapore are linked to various characteristics of their work environment, particularly to pressures associated with the job itself and to organizational aspects. Aspects of the IT personnel's work environment, such as increasing expectations and demands on the part of users are leading to an increase in stress. ( Lim & Teo, 1999).

There is considerable reason to believe that the IT professional of today (applications programmer, data or systems analyst etc.) is significantly more at risk of serious "burnout". In his book "Techno stress", Craig Brod (1984) points out that "high performance requirements along with high technology can exercise a dangerous influence on the human personality".

Khosrowpour and Culpan(1990) have published a stress-related study applied to individuals working in computer-related fields. In it, they remark: "Information processing professionals see change in technology as a pre-requisite for their existence, yet the speed of this change can have profound psychological and physiological effects".

With the increase of computer-supported work, there has been a dramatic increase in health problems related to it (Punnett, L et al., 1997). Health problems in IT-supported work are well known and well documented. The main symptoms are visual discomfort, musculoskeletal disorders and stress related symptoms (Aaras, A et al.,2000).

In a qualitative study performed on a sample of 26 IT professionals working in three different companies in Delhi, it was found that IT professionals are facing a huge amount of work stress mainly caused by heavy work load, inadequate staff along with role ambiguity affecting their family life ( Rajib Lochan dhar et al., 2010).

### **3.11 Stress Management & Yoga**

As a holistic science concerned with all aspects of human functioning, yogic science provides a unifying framework by which stress process can be understood and eliminated. Yoga involves a systematic method by which we can begin to expand our awareness of the processes which lead to stress and thus gain control over them ( Hasmukh Adia et al., 2010). Yoga based methods have potential to effectively address the causes and impact of stress issues. While several studies in the past have acknowledged this aspect and discussed various ways by which Yoga can address this aspect, till date very little effort has gone into empirically assessing the yogic methods impact on Job stress/ mental health of IT Professionals. Yoga is one of the six foundations of Indian philosophy and has been used for millennia to study, explain, and experience the complexities of the mind and human existence (Feuerstein, 1998). Patanjali, an ancient Yoga sage, defines Yoga as a technique used to still the fluctuations of the mind to reach the central reality of the true self (Iyengar, 1966). Patanjali's Yoga Sutras outline a skillful way of conducting life that fosters moderation and harmony (Becker, 2000). Ashtanga Yoga encompasses cognitive learning, moral conduct, physiological practices, and psychological therapy. The first two steps of Yama and Niyama seek and shape external behaviour and thought patterns and thus minimize disturbances in the mind and the body. On the behavioural side, abstention is sought from violence, falsehood, dishonesty, sexual excess, and acquisitive tendencies. On the cognitive moral side, the ideals prescribed are: purity, contentment, austerity, self-study and forbearance. The stages of Asana and Pranayama are meant for disciplining the body and regulating subtle energy flows.

In the fifth stage of Prathyahara, secondary input is regulated so that the mind is not distracted. The stages of Dharana, Dhyana, and Samadhi are for uplifting one's spiritual self and for heightening consciousness ( Hasmukh Adia et al., 2010). To tackle the Job stress issues for IT professionals indigenous integrated methods needs to be considered rather than importing techniques from the west. Originally developed for personal spiritual growth, Yoga offers a well formulated approach to planned change (Srinivas, 1994). As a holistic science concerned with all aspects of human functioning, the science of Yoga provides a unifying framework by which stress can be understood and be effectively managed. According to Yoga, we are unconscious of those mental/emotional/perceptual processes which habitually create stress. Yoga involves a systematic method by which we can begin to expand our awareness of these processes and thus begin to gain control over them. So, in a very practical sense, Yoga gives us the tools and techniques by which we can expand our conscious awareness into the unconscious parts of the mind in order to become aware of the patterns and habits which lead to stress. Yoga is by far the most important technique used by the Indians to cope with the problem of stress. In any stress disorder, the para-sympathetic auto-nervous mechanisms fail to function adequately to minimize the impact of stressful stimuli. Among several relaxation practices, Yoga has the potentiality to influence the auto-nervous mechanisms in various ways. The science of Yoga is based on the principle of stimulating one's body and mind and then relaxing it turn by turn. This restores the functioning of sympathetic and para sympathetic nervous systems and so that stress does not get built up( HR Nagendra, 2003).

Bhole (1977), in his conceptual paper, explained different aspects of Yoga. Palsane et al (1993) have observed that modern Western psychological literature focusing on ideas related to the strength of motives and frustration and their behavioural consequences, the frustration-aggression hypothesis, ego involvement, mind-body interactions (psychosomatics), and locus of control have their parallels in the ancient Indian thought. Misra (1989) found that effort orientation rather than concerns for outcome leads to greater intrinsic satisfaction. Chakraborty (1987, 1993) provides experimental evidence that practicing Yoga, meditating, controlling breathing and stilling the turbulent mind can enable workers and managers to purify their chitta and make it spiritual, expand their self to include others around them, and help them grow and transform themselves without expecting anything in return. According to Fersling (1997), although there is a lack of controlled studies, Yoga is regarded as a promising method for the treatment of stress-related problems. Several studies have shown Yoga to be promising for physiological (Murugesan, Govindarajulu, and Bera, 2000) and psychological outcome measures (Malathi, *et al*, 2000).

Below are few relevant studies which were performed to study the effect of Yoga on perceived stress.

Studies such as those conducted by Singh and Udupa (1977), Datey (1977), Sachdeva (1994), Vasudevan (1994), Venkatesh (1994), and Rao (1995) throw light on the positive effects of yogic practices on perceived stress. Udupa, Singh and Dwivedi (1977), in their study on two groups of volunteers who practised vipasana meditation for 10 days, had noted a significant increase in the levels of acetylcholine, cholinesterase, catecholamine, and histamines activities in the blood. On the other hand, there appeared to be a reduction in the level of plasma cortisol, urinary corticoids, and urinary nitrogen. These findings suggest that volunteers were neuro-physiologically more active following yogic meditation and yet, were physically and metabolically stable.

In a study done by Granath, *et al* (2006), a stress management programme based on cognitive behaviouraltherapy principles was compared with a Kundalini Yoga programme. Psychological (self-rated stress and stress behaviour, anger, exhaustion, quality of life) and physiological (blood pressure, heart rate, urinary catecholamine, salivary cortisol) measurements obtained before and after treatment showed significant improvements on most of the variables in both groups as well as medium- to-high effect sizes. However, no significant difference was found between the two programmes. The results indicate that both cognitive behaviour therapy and Yoga are promising stress management techniques.

In a study done at Vivekananda Yoga Anusandhan Samsthan, Bangalore, Telles et al (2004) found that Yoga training can help people to reduce their heart rate, which has possible therapeutic applications. In another study done at the same place, Patil and Telles (2006) found cyclic meditation technique, developed by Vivekananda Yoga Anusandhan Samsthan, Bangalore, to be more effective in achieving voluntary heart rate variability as compared with another yogic technique of Supine Rest (Savasana).

An experiment on stress reduction using the Transcendental Meditation (TM) technique and Progressive Muscle Relaxation (PMR) was conducted at a South African firm with 80 employees (Broome *et al*, 2005). Six weeks of TM practice produced greater reductions in psychological stress than six weeks of PMR ( $p < 0.03$ ). Transcendental Meditation is a skill of effortlessly minimizing mental activity so that the body settles into a state of rest deeper than deep sleep where the mind becomes clear and alert. They showed that meditators displayed a greater physiological equilibrium than non-meditators. They also showed that meditators maintained this equilibrium under stress more effectively than non-meditators (Orme-Johnson et al., 1992).

Sahasi, Mohan and Kacker (1989) conducted a study to measure the effectiveness of yogic teachings in the management of anxiety. A group of 91 patients suffering from anxiety neurosis were taken up for treatment. Patients were randomly assigned to Yoga therapy (Group I) or drug therapy (Group II), subject to their willingness to participate in the yogic practices. There were 38 patients in the former group while 53 patients were administered drug therapy. Patients were assessed clinically and administered psychological tests prior to the commencement of the treatment schedule and also after its completion. The anxiety level in Group I decreased, the Locus of Control Scale revealed increased attention/concentration though it was not statistically significant. In the drug therapy group, pre- and post-treatment scores were not statistically significant on any test except the Locus of Control Scale.

Sachdeva (1994) investigated the effect of 12 weeks of yogic life-style on hypertension in a sample of 26 hypertensive and 20 normotensive subjects. The yogic lifestyle comprised meditation, breathing techniques, correct postures, a low-fat, non-spicy vegetarian diet, and behavioural modification. Findings revealed a significant reduction in systolic and diastolic BP, body weight, serum cholesterol and triglyceride levels following the implementation of the yogic lifestyle.

Works are available on the subject of the impact of transcendental meditation (TM) on work life/management. Transcendental meditation is the skill of effortlessly minimising mental activity so that the body settles into a state of rest deeper than deep sleep while the mind becomes clear and alert (Orme-Johnson, Zimmerman, & Hawkins, 1992). A review of over 500 experimental studies conducted in over 200 Universities in 33 countries (Orme-Johnson et al., 1992) revealed that TM helps expand consciousness, decrease oxygen intake and stress level, increase basal skin resistance and coherence in the electroencephalogram (EEG) and virtually suspends breathing up to 1 minute.

In an empirical study done by Hasmukh Adia et al., (2010) on adopting yoga way of life in managers in 60 managers from a textile manufacturing company, it was found that Yoga way of life can play useful role in reducing job burnout among managers.

### **Cyclic Meditation**

Cyclic Meditation is built up on Yoga principles by combining physical postures and meditating methods (HR Nagendra, 2003). Cyclic Meditation is a practice session in Self-Management of Excessive Tension (SMET) program which was developed by Swami Vivekanda Yoga Anusandhan Samsthana, Bangalore. The concept of SMET (an acronym of Self-Management of Excessive Tension) was evolved over a number of years from 1976, and developed into a standard procedure by H R Nagendra (1986).

The basis for SMET is derived from Gaudapada's Mandukya Karika (Commentary on Maṇḍukya Upanishad ). It was postulated that when a novice attempts to meditate directly, there could be two responses based on the quality of the mind which may not yield good results ((i). a rajasic – active (personality) mind would be restless all through the session ; (ii) a tamasic – a mind with inertia could fall asleep) . This problem of the mind is addressed in the Mandukya Upanishad. Based on this, a technique of 'moving meditation', which combines the practice of yoga postures with guided meditation was evolved, called cyclic meditation (CM), by H.R. Nagendra, Ph.D., which has its' origin in an ancient Indian text, Mandukya Upanishad (Chinmayanada Swami, 1984). It is interesting to note that CM does induce a quiet state of mind, which is compatible with the description of meditation (dhyana or effortless expansion (Chinmayanada Swami, 1984). The description of dhyana states: '*Tatra pratyayaikatanata dhyanam*' (Patanjali's *Yoga Sutras*, Chapter 3: Verse 2). This means that the uninterrupted flow of the mind towards the object chosen for meditation is *dhyana* (Taimini IK, 1986). According to Shirley Telles (2009), all meditations, irrespective of the strategies involved are believed to help reach this state of dhyana. There are several strategies in meditation which include breath awareness, awareness of internal sensations, directing the attention to a mantra or a koan, and keeping the eyes open with the gaze fixed on the object of meditation.

According to HR Nagendra (2003), cyclic Meditation, which could also be abbreviated as C.M is built up on below verse from Mandukya Upanishad.

लये संबोधयेत् चित्तं विक्षिप्तं शमयेत् पुनः  
सकषायं विजानीयात् समाप्रम्पत् न चालयेत् | माण्डुक्य उपनिषद् 3.44||

*'In a state of mental inactivity awaken the mind; when agitated, calm it; between these two states realize the possible abilities of the mind. If the mind has reached that state of perfect equilibrium then do not disturb it again.'*

According to HR Nagendra (2003), the major hurdles for growth in any training are based on the quality of Tamas and Rajas. Tamas resulting from ignorance, laziness, and lethargy or in general resistance to action, which is our grossest personality trait. This, according to the Karika, needs stimulation. In subtle levels of yoga practices, Tamas shows up as stagnations, which also have to be addressed. A method of breaking such stagnations is to use very subtle stimulations in the form of perceptions at all these levels; to achieve this, going deeper into consciousness is essential. The second hurdle is Rajas, which means shining featured by dynamism, brilliance, intelligence, active all the time, etc. However excessive Rajas will cause hypersensitivity leading to anxieties, tensions, and all the hazards seen in modern life. The remedy lies in calming of the mind, slowing the breath, relaxation of all muscle groups, and general moderation which is principle behind all tools used extensively in Yoga practice. So we need to address these two hurdles effectively to bring deeper and more effective growth in the personality traits.

The Karika gives a solution by saying that we use the techniques of stimulation and relaxation successively one after another. As we use it in cycles of Stimulation-relaxation combined, we will be able to release stress and stagnations on one hand, and calm down distractions, and reduce hypersensitivity or over reactions on the other, facilitating the journey towards reaching higher sensitivity levels. The underlying idea is that, for most persons, the mental state is routinely somewhere between the extremes of being 'inactive' or of being 'agitated' and hence to reach a balanced/relaxed state the most suitable technique would be one which combines 'awakening' and 'calming' practices. In CM, the period of practicing yoga postures constitutes the 'awakening' practices, while periods of supine rest comprise 'calming practices'. An essential part of the practice of CM is being aware of sensations arising in the body (Nagendra HR, & Nagarathna R, 1997). This supports the idea that a combination of stimulating and calming techniques practiced with a background of relaxation and awareness may reduce psycho physiological arousal more than resting in a supine posture for the same duration. The practice of CM, includes yoga postures (asanas) which involve muscle stretching and this has diverse benefits.

Below is a brief scientific review on applications of CM in bringing physiological and psychological changes in participants.

In a scientific study done on 42 male volunteers to measure heart rate variability (HRV) in CM and supine rest (SR) sessions, the following observations were done, ‘The high frequency (HF) power of the HRV increased during both CM and SR practice, which is considered to suggest increased vagal tone. However, there was a marginally greater increase during CM (4.4 %) compared to during SR (1.0 %). In the same study the low frequency (LF) power which is believed to correlate with sympathetic activity was significantly less during both CM (1.8 % decrease) and SR (0.3 % decrease). The study showed that parasympathetic dominance due to CM is more than supine Rest (Sarang P & Telles S , 2006). Ability to ignite dominance of parasympathetic activity is of paramount importance as this activity will bring homeostasis to organism after completion of stressful situations encountered.

It is found that a two-day CM program decreased occupational stress levels and baseline autonomic arousal in 26 asymptomatic, male, middle managers, suggesting significant reduction in sympathetic activity (Vempati RP& Telles S, 2000). The mechanisms underlying the decrease in occupational stress levels may be related to decreased autonomic arousal (sympathetic activation) as well as psychological factors.

A comparative study was performed on 57 male volunteers (group average age  $\pm$  S.D.,  $26.6 \pm 4.5$  years) about the immediate effect of Cyclic meditation against Supine rest on memory and state anxiety. A cyclical combination of yoga postures and supine rest in CM improved memory scores immediately after the practice and decreased state anxiety more than supine rest, a classical yoga relaxation posture (shavasana) (Subramanya P & Telles S, 2009).

In a study on the effect of CM practice on performance using a letter cancellation task, which was assessed in 69 male volunteers (whose ages ranged from 18 to 48 years), improved performance was observed in the task which required selective attention, concentration, visual scanning abilities, and a repetitive motor response following CM. (Sarang P & Telles S, 2007).

In a randomised controlled study done to investigate the effect of the SMET integrated yoga module on emotional wellbeing among managers in a large Indian company, it was found that there was an increase in the mean value of EI after the Yoga intervention and a decrease in the control ( $p < .001$ ). There was also an increase in the mean value of E.C. in the Yoga group, compared to the control group ( $p < .001$ ). In this study 30 sessions of SMET intervention was administered. It could be concluded that SMET intervention helped to increase Emotional Intelligence and Emotional Competence among managers (Sony Kumari et al., 2013).

In a study done on 72 managers from Oil and Natural Gas Corporation Limited, it was found that Emotional Quotient in managers undergoing yoga-based Self-Management of Excessive Tension (SMET) program, significantly increased ( $P < 0.001$ ) (Tikhe Sham Ganpat and H. R. Nagendra, 2011).

With the above studies, it could be understood that Yoga based interventions helped to increase parasympathetic dominance in the participants. It also could be understood that Yoga based interventions helped to reduce state anxiety among participants. From the studies done on Managers, it could be understood that Yoga based interventions/ Yoga way of life, helped to increase Emotional intelligence and Emotional competence.

### **3.12. Conclusions from Literature Survey**

Based on Literature review done, it could be reasonably concluded that

Job Stress for workforce is an outcome of a number of factors involving organizational, environmental and personal. Job anxiety has a moderating role on Job stress. Emotional intelligence could be understood as the ability to engage one's emotionality in intelligent ways in order to facilitate constructive outcomes in relationships either in work/personal life. Emotional Intelligence may have moderating effect on Job stress and Burn out. The burden of mental health disorders on health and productivity at workplace has long been underestimated. Developed countries are already considering active approaches to reduce Job stress impacts on their countries' workforce to have a sustainable economic growth. Mental health action plan for Europe and European pact for wellbeing at work place are in this direction (European Commission, 2008). According to NASSCOM, 2013 annual report, IT industry is the largest private sector employer in India by providing direct employment to 3.5 million people and indirect employment to 9.5 million people as of 2013. Indian IT industry revenue grew from USD 100 million in the financial year 1992 to USD 108 billion in the financial year 2013. It is expected that this industry would record about US \$ 220 billion in exports and US \$ 60 billion domestically by 2022. Due to the nature of IT products/service industry, Indian IT Professionals need to continuously challenge themselves to deliver products/services with quality along with being flexible to adjust to customer time zones. IT Professionals also need to continuously upgrade their computer and technology skills to remain employable. Most of the IT Professionals may go through conditions of overwork, lack of clear instructions, unrealistic deadlines, lack of decision making, mobility, isolated working

conditions and being under surveillance and thereby making them prone to Job Anxiety and Job stress. Based on the literature review performed on IT Professionals health problems, it could be reasonably understood that IT professionals on an average getting succumbed to both physiological and psychological health problems early in life in terms of suffering from malignant levels of hypertension, cardiovascular health diseases, diabetes, asthma, back pain, peptic ulcer etc due to Job stress conditions. Job stress conditions of Indian IT professionals are unique compared to other professionals working under non IT related job set-ups. So any studies done on employees/managers working in non IT job profile set ups may not be applicable to professionals working in IT job profile setups. Earlier Studies indicated that yoga based practices help the personal well-being by restoring functioning of sympathetic and para sympathetic nervous systems. It was also indicated that yoga way of life can help improve emotional well-being and thereby causing reduction of burn out among managers in manufacturing setups. More robust studies in this direction were recommended. Cyclic Meditation being a yoga based practice combines a cyclical combination of yoga postures and supine rest and may be termed as 'moving meditation'. It has ability to ignite dominance of parasympathetic activity which helps to restore homeostasis to organism after completion of stressful situations encountered. There are little studies done on effect of Yoga based practices on Job stress/Job Anxiety levels for Indian IT professionals. There is a strong need to study effect of yoga based practices on Job stress levels of Indian IT Professionals using both quantitative and qualitative approaches.

### **3.13. Development of Theoretical model**

Job-related anxiety, in contrast to general trait-anxiety, is by its very nature associated with problems of participation at work. Job-anxiety is related to, but not identical with trait-anxiety. Job-anxiety has influencing role on perceived job stress in working population (Beate Muschallaa et al., 2010). Given the job demands and situations for Indian IT professionals, any situations or scenarios generating insecurity of losing current opportunity/losing future opportunity would induce Job Anxiety. One should not forget that most of projects taken up by IT professionals are all of short term duration spanning from few months to couple of years. Also factors like personal/family, health/education/support needs also impact IT Professionals' performance on Job, so even these factors also play a modifying role on Job Anxiety for IT professionals. Based on the understanding from the ancient Indian wisdom, one can come to an understanding that yoga based practices help the individual to achieve a balanced state of mind. Mindfulness or balanced state of mind helps the individual to understand one's own as well as others emotions during stressful situations.

Achieving a balanced state of mind may help to increase Emotional intelligence. As it may be recalled , emotional intelligence (EI) is ‘a form of social intelligence that involves the ability to monitor one’s own and others’ feelings and emotions, to discriminate between them, and to use this information to guide one’s thinking and action’ (Salovey and Mayer, 1990). Below a theoretical model was developed for studying the effect of Cyclic Meditation on Job stress levels of Indian IT Professionals. Towards this study, effect of CM practice on Emotional quotient of IT Professionals was measured and subsequently effect of CM practice on Job anxiety as well as on perceived stress for IT professionals was measured. This is the unique study model till date, which provides understanding about the effect of Yoga based practices on Job stress levels of Indian IT Professionals.

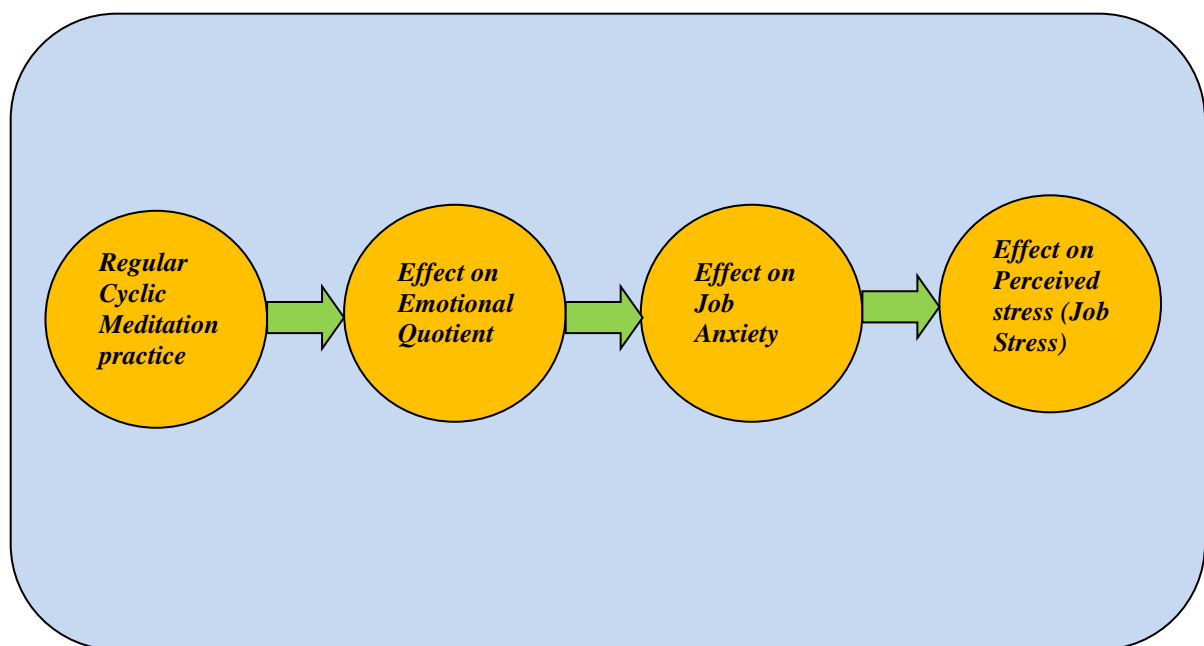


Figure3.5:- Flow diagram to study effect of CM on Job stress levels of Indian IT professionals

## **CHAPTER 4**

### **AIM AND OBJECTIVES**

#### **4.1 AIM**

Aim of this study is to evaluate the effect of the cyclic meditation on Job stress levels of professionals working in Indian information technology industry.

#### **4.2 OBJECTIVES**

The objectives of this study are as follows

4.2.1 To evaluate the effect of cyclic meditation on Emotional Quotient of professionals working in Indian information technology industry as assessed through Emotional Quotient test, developed by Dr. Dalip Singh and Dr. N K Chadha .

4.2.2 To evaluate the effect of cyclic meditation on Job Anxiety of professionals working in Indian information technology industry as assessed through Job Anxiety scale developed by AK Srivatsava.

4.2.3 To evaluate the effect of cyclic meditation on perceived stress of professionals working in Indian information technology industry as assessed through Perceived Stress Scale developed by Sheldon Cohen.

4.2.4 To study the relationship between emotional quotient, job anxiety and perceived stress for professionals working in Indian Information Technology Industry.

### **4.3 RESEARCH QUESTION AND HYPOTHESES**

The following research questions and hypotheses were addressed through four different studies:

***Research Question 1: What is the effect of 8 week practice of cyclic Meditation on Emotional Quotient of IT professionals?***

Hypothesis (H1): 8 week practice of Cyclic Meditation increases the Emotional quotient of IT professionals.

Alternate/Null Hypothesis (NH1): Cyclic Meditation does not increase Emotional Quotient of IT Professionals.

***Research Question 2: What is the effect of 8 week practice of cyclic Meditation on Job Anxiety levels of IT professionals?***

Hypothesis (H2): Cyclic Meditation reduces the Job anxiety levels of IT professionals.

Alternate/Null Hypothesis (NH2): Cyclic Meditation does not reduce Job Anxiety levels of IT Professionals.

***Research Question 3: What is the effect of 8 week practice of cyclic Meditation on Perceived stress for IT professionals?***

Hypothesis (H3): Cyclic Meditation reduces the perceived stress for IT professionals.

Alternate/Null Hypothesis (NH3): Cyclic Meditation does not reduce perceived stress for IT Professionals.

**Research Question 4:** *What is the relationship between emotional quotient, job anxiety and perceived stress for professionals working in Indian Information Technology Industry?*

Hypothesis (H4-a): Emotional quotient is negatively correlated with Job Anxiety among professionals working in Indian Information Technology Industry.

Hypothesis (H4-b): Job anxiety is positively correlated with perceived stress among professionals working in Indian Information Technology Industry.

Alternate//Null Hypothesis (NH4-a): Emotional quotient is not correlated with Job Anxiety among professionals working in Indian Information Technology Industry.

Alternate/Null (NH4-b): Job anxiety is not correlated with perceived stress among professionals working in Indian Information Technology Industry.

# CHAPTER 5

## DESIGN OF THE STUDY

### 5.1 SUBJECTS

This study involves both control group and experimental group (i.e yoga group). Subjects were taken from an IT company in Bangalore, Karnataka. Subjects were screened for normal health status as declared by the participant and subject going through any kind of medication as declared by participant were excluded. Subjects who already practice any kind of yoga based practices were also excluded. 135 IT professionals were screened and 125 healthy IT professionals, aged between 24 to 49 years were considered for subject selection. However subjects who did not sign informed consent form were excluded from the study. Subjects who did not provide completed questionnaires post study period were also excluded for data analysis.

#### 5.1.1 Inclusion Criteria for Subjects

- Normal health status
- Both genders
- Age ranging 24 to 49

#### 5.1.2 Exclusion criteria for Subjects

- Age range > 49 years and less than < 24 years
- Currently practicing yoga based practices.
- Going through any kind of medication.
- Who did not sign informed consent form
- Who did not fill up the questionnaires (pre/post).

Table 5.1 Details about Subjects for Yoga Group and Control group

Details about the Subject selection for Yoga group and Control group	Size
IT professionals (participants) interested to participate in the study	135
Participants with normal health status as indicated by the subjects and who also met inclusion criteria	125
Participants who filled up informed consent forum	118
Participants who were willing to do practice during study period ( yoga group)	60
Participants who wanted to be part of control group ( no yoga intervention)	58
Yoga group subjects who participated regularly	51
Yoga group participants who provided completed questionnaires	48
Control group participants who provided completed questionnaires	48

With above criteria `48` subjects participated in Yoga group whereas `48` subjects participated in control group as part of this study

### 5.1.3 Source of Subjects

Subjects were IT professionals working in Infineon India Technologies Pvt Ltd , Bangalore. This is a Multi-National Company (MNCs) located in Bangalore. This MNC has its headquarters in Germany and has research and development office in Bengaluru since 1999. This company also has research and development centers in Munich (Germany), Villach (Austria), Bristol (U.K) and in Singapore. Along with that, this company has marketing presence in all continents of the world. This company has over 300 IT Professionals working in its India office.

Table 5.2 Subjects Profile: Age (Mean & S.D)

Groups	N	Age- Range	Age (Mean $\pm$ SD)
Yoga	48	24-50	31.041 $\pm$ 4.547
Control	48	24-50	32.021 $\pm$ 4.307

Table 5.3 Subjects Profile: IT Industry Experience (Mean & S.D)

Groups	N	Age- Range	IT Experience (Mean $\pm$ SD)
Yoga	48	24-50	7.395 $\pm$ 4.281
Control	48	24-50	8.208 $\pm$ 4.307

#### 5.1.4 ETHICAL CONSIDERATION AND INFORMED CONSENT

- All data collecting procedures were reviewed and accepted by the Institutional Ethical Committee (IEC) appointed by SVYASA University.
- Signed informed consent was obtained from the participants before the beginning of study period, after they had read the proposal that involves non-invasive data collection methods and risks free intervention. Participants were explained in detail about the nature of the study and the voluntary nature of participation and participants were not provided with any incentives for their participation. For information on Written Informed Consent, please refer the Appendix.

### **5.1.5 CALCULATION OF SAMPLE SIZE**

Previous studies done in the field of yoga and management fields were analyzed to calculate the sample size. A previous study done on adopting yoga way of life on managers ( Hasmukh Adhia,2010) arrived at sample size of 35 using ‘G\* Power’. G\*Power is software that provides effect size calculators and graphics options. It contains also a calculator that supports many central and non central probability distributions. Sample size N is computed as a function of power level and significance level( Alpha) . To ensure to get dependable results based on previous study which used G\* Power Analysis, a sample size of 48 was chosen.

### **5.1.6 DURATION OF THE INTERVENTION**

For participants in yoga group, cyclic meditation intervention was administered from 15<sup>th</sup> September 2014 to 28<sup>th</sup> November 2014, between 5:30 p.m to 6:30 p.m on all working days, in Infineon India Technologies office campus, making the effective duration of intervention about 2 months.

## **5.2 INTERVENTION DETAILS**

The concept of CM (an acronym of Cyclic Meditation) was evolved over a number of years from 1976, and developed into a standard procedure by Nagendra (1986). The basis for CM is derived from Gaudapada’s Māṇḍūkya Kārikā (Commentary on Māṇḍūkya Upaniṣat).

The intervention for yoga group consisted of a two-month course in Cyclic Meditation.

### **Sequence of Stimulating and Relaxing postures in CM**

C.M. is a set of stimulation and relaxation combine involving cycles of body postures followed by supine rest relax poses. Body postures are yoga based body postures like Ardha kati chakrasana, Taadasana , Vajrasana and Ardha vustrasana. Supine rest relax posture followed is shavasana i.e dead corpse pose. Participants going through this intervention need

to make their body movements very slow and continuous. Idea here is by controlling the speed of the body movements, participants can feel the energy impulses flowing in the body. While in supine rest position, participants are made aware of their body parts and asked to relax the tension in all parts of the body.


**Prayer :-** CM practice starts with a prayer

लये संबोधयेत् चित्तं विक्षिप्तं शमयेत् पुनः  
सकषायं विजानीयात् समाप्रम्पत् न चालयेत् | माण्डुक्य उपनिषद् | 3.44||


And meaning was this prayer is like below

*‘In a state of mental inactivity awaken the mind; when agitated, calm it; between these two states realize the possible abilities of the mind. If the mind has reached that state of perfect equilibrium then do not disturb it again.’*

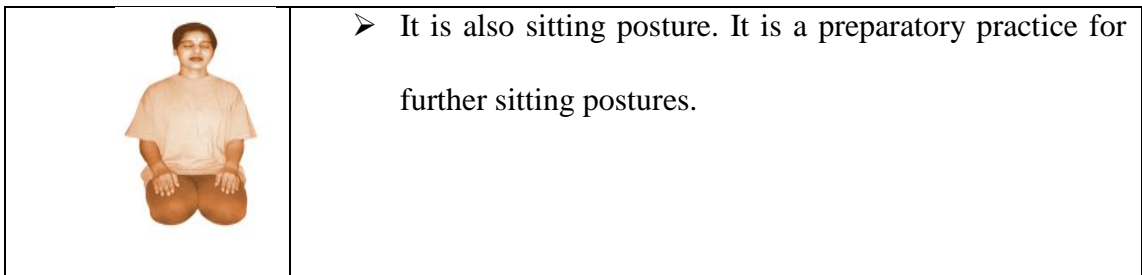
- Perform IRT (Instant Relaxation Technique) - It is a combination of stimulation and relaxation practice, where we tighten whole body in a sequence and then it has to relax.
- Coming up to Taḍasana

	<ul style="list-style-type: none"> <li>➤ It is a standing relaxation posture and preparatory for all the standing postures.</li> </ul>
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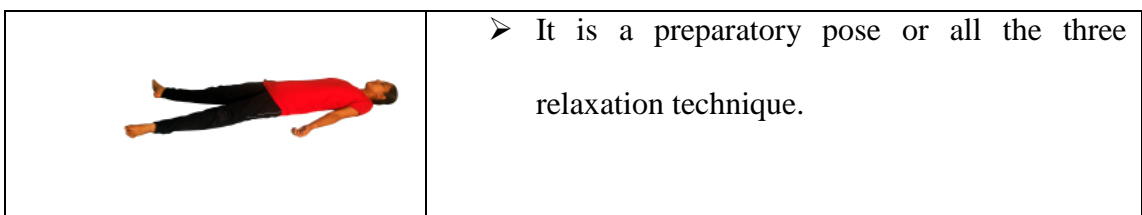
- Relaxation and Centring in Taḍasana- centring is having four stages (forward, backward, right and left side of leaning of whole body parallel to the ground.
- Perform Ardha Kaṭi Chakrāsana- (from right and then left)

	<ul style="list-style-type: none"> <li>➤ It is a self-complementary practice. It is a very slow movement of hand one by one from both sides with full awareness.</li> </ul>
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- Coming down to Savasana from right side
- Perform QRT (Quick Relaxation Technique)- it takes three minutes to perform and it is having three stages (abdominal awareness, synchronization of abdominal movement with breath awareness and finally addition of the feeling with awareness).
- Daṇḍasana- it is a sitting relaxation posture.
- Perform Vajrasana



- Perform shshankasana and return to vajrasana- Shshankasana is a forward bending posture.
- Perform Ardha ustrasana or ustrasana - Ardha ustrasana is a backward bending posture.
- Relax in sitting position with leg stretch
- Go straight back to Savasana



- Perform DRT (Deep Relaxation Technique)-it is last and final relaxation posture, which takes 12 minutes. Here, in this practice we are relaxing from whole body in a lower to upper sequence.

In the first 7 sessions each asana and relaxation technique were introduced in detail so that the participants will learn the practices correctly. From the 8<sup>th</sup> session onwards, participants could complete the practice with ease. Complete CM sequence took 35 minutes per session. This set of practice combines both stimulation and relaxation which is unique to CM.

### **CONTROL GROUP INTERVENTION**

Subjects in the control group were requested to go for 35 minute physical exercise ( any type) every day, and are requested to maintain a personal diary for their motivation and personal satisfaction.

### 5.3 DESIGN OF THE STUDY

It is a pre-post study design using quantitative data collection methods. Questionnaires were administered and responses were collected during pre and post stages of the design. Below is the study plan followed.

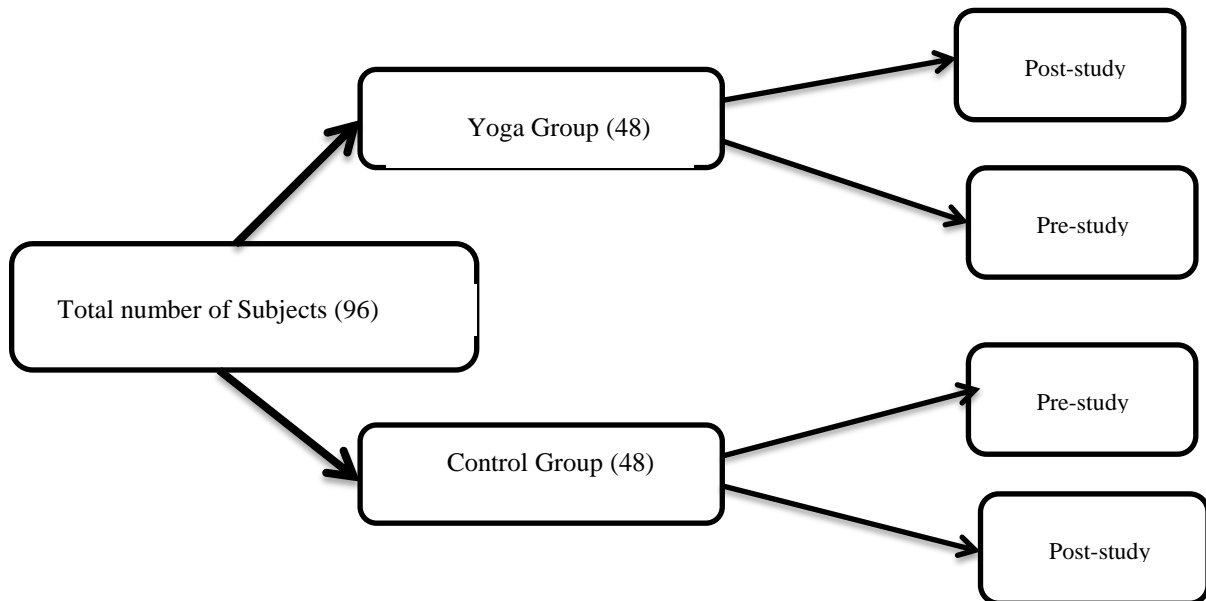


Fig 5.1: Pictorial Representation of Study Plan

Participants from yoga group and control group were also encouraged to share their experiences in written format voluntarily which they believed happened due to the practices they adopted during study period. 15 participants from yoga group voluntarily shared their experiences at the end of study period. None of the participants from control group shared their experience in written format

All research hypothesis statements were validated using pre-post design method. Also, written experiences from volunteering participants at the end of intervention period, about what changes they believed happened due to intervention at their personal and job level were also recorded. This served as qualitative method in collecting data. Here combined use of quantitative research and qualitative research methods were adopted to determine how far they arrive at convergent findings for yoga group, whereas for control group only quantitative method was used.

## **5.4 ASSESSMENT TOOLS**

### **5.4.1 EMOTIONAL QUOTIENT ASSESSMENT**

Psychologists have shown that an individual's emotional characteristics can be reliably measured using the emotional intelligence, a scientific instrument designed to measure the Emotional Intelligence. Among tests of emotional intelligence for the Indian population, Dr. Dalip Singh and Dr. N K Chadha's Emotional Quotient test has been standardized for professional managers, working professionals, businessmen, bureaucrats, artists, graduate student, and adolescent population (Priti Suman Mishra et al., 2010). Hence this scale was used in this study.

#### Details about EQ test developed by Dalip singh and N K Chadha:-

The present EQ test measures three psychological dimensions such as emotional sensitivity, emotional maturity and emotional competency. The most important step in making a psychological test is its standardisation. This involves situation selection, situation analysis and critically evaluating the reliability and validity of a test on given parameters. Accordingly, the following steps were initiated to finalise the present EQ test.

Situation selection: The present EQ test was made by compiling real-life situations experienced by individuals in their day-to-day life. The situations were selected to avoid

response bias such as ‘faking good’ or ‘social desirability tendency’ by the respondents. This tendency refers to the inherent tendency of an individual to conform to the social norms. Psychologists today unanimously hold that the tendency of the individual to make socially desirable rather than true answers to emotional inventories lessens their usefulness. There are ordinarily three approaches to control the social desirability of an emotional inventory. One way is to arrange the situations in an inventory in such a way that the subject is forced to choose between two equally desirable answers. But the forced choice technique has its disadvantage because it seems to create more problems than it solves. The second way is to use an independent social desirability scale and the score on this scale may be correlated with scores on other inventories to give an index for this tendency. The third way is to have such situations in the inventory which are relatively neutral with respect to such desirability and thereby avoid a response bias. In the present context, only such situations which have been deemed relatively neutral with regard to social desirability tendency were introduced. The situations selected are broadly covering below situations for each of the EQ dimensions namely Emotional Sensitivity, Emotional Maturity and Emotional Competence.

*Emotional competency:-* Below situations are broadly covered in the questionnaire to measure the emotional competency of the respondents.

*Tackling emotional upsets* This means tackling frustrations, conflicts, inferiority complexes etc. It also means avoiding emotional exhaustion such as stress, burnout and negativity of emotions. People in conflict are generally locked into a self-perpetuating emotional spiral in which the genesis of the conflict is usually not clear. Finding ways to deal with anger, fear, anxiety and sadness are essential signs of emotional competency. For example, learning how to manage yourself when upset, is one such asset. Being able to channelise emotions to a positive end is another key skill to raise your EQ. Under Indian conditions, inferiority complex arising from issues such as knowledge, education, physical characteristics, religion,

region, caste, sex and creed are not uncommon. Inferiority complex is also reflected in the low self-esteem, negative feelings and low opinion about oneself. Research shows that a high level of emotional intelligence helps overcome inferiority complex.

*High self-esteem* Many managers often give themselves a negative feedback. On the other hand, there are those who believe that optimism can be a useful asset. Research done in Indian organisations has indicated that leaders should learn to be optimistic to boost their self-esteem. High self-esteem gives a manager realistic confidence to perceive challenges as learning opportunities. As a result, one constantly grows and improves. High self-esteem is the greatest gift a manager can give to himself. Unfortunately, most of us suffer from a wounded self-esteem which often leads to a psychological invalidation of the self. The managers should learn to acquire high self-esteem which is reflected in the feelings of confidence and competence.

*Tactful response to emotional stimuli* This means being creative and practical towards emotional prompts elicited from the inner self and the immediate environment. An emotionally intelligent manager will try to manipulate the ongoing environment to his/her advantage by reacting appropriately.

*Handling egoism* Egoism is based on the view that the fundamental motive behind all emotional conduct is self-interest. A self-centered manager talks incessantly of himself and his doings and is interested in only his own concerns. Tackling ego problems without hurting one's self-esteem is the key to success. An 'I am never wrong' attitude may be harmful in many situations. One should not be an egoist. It is the root cause of problems in interpersonal relations. Taking the initiative to resume dialogue and breaking the ice in situations where both parties have stuck to their original stand and have refused to budge is a sign of emotional competency.

Emotional Maturity:- Below situations are broadly covered in the questionnaire to measure the Emotional Maturity of the respondents.

*Self-awareness* One of the basic emotional skills is the ability to recognise different feelings emanating from within and giving a name to them. Many managers are in fact unable to recognise their feelings and are inclined to deny them. Knowing one's own emotional strength and weaknesses is of great help. For instance, the inner self constantly responds to the outer world. It is generally believed that if one cannot interpret one's own emotions, he or she may not be able to do the same for others. This will reduce your effectiveness in handling interpersonal relationships.

*Developing others* Recognizing the value of the contribution of others and encouraging their participation can often do good. Appreciating other's point of view and involving them actively in a project are signs of an emotionally intelligent manager.

*Delaying gratification* The managers may learn to delay the gratification of reacting to a particular situation instantaneously. This means to gain time to judge whether what is about to be said or done in the heat of the moment is the best course of action by expressing personal concern without anger or passivity, a manager may come out a winner. A manager must have loads of patience and must not allow emotions to get the upper hand. Delaying gratification 'is doing right' and has far-reaching consequences in attaining success in personal and professional life.

*Adaptability and flexibility* Knowing how and when to take the lead and when to follow are both essential emotional skills. The managers should know when to be aggressive and when to be passive. He/She should also know that there is a time to confront, withdraw, speak and remain silent. However, to do so, the manager has to control powerful negative tendencies such as jealousy, manipulation and the feeling of self-grandeur.

*Emotional Sensitivity:* Below situations are broadly covered in the questionnaire to measure the Emotional Sensitivity of the respondents.

*Understanding threshold of emotional arousal* The managers should be in a position to respond to stimuli of low intensity. Equally important is the ability to be aware of the relationship between feelings and actions. What, for instance, triggered a particular emotion? What was the feeling behind a specific action? These are questions that managers ought to ask themselves to understand the intensity of emotions better.

*Empathy* It is the ability to sense how other people feel. It is the ability to share and accept another person's feelings. In India, we tend to call it the quality of humanness. It is the ability to listen to others without getting carried away by personal emotions. It is necessary to be able to distinguish between what others do or say, and one's own personal reactions and judgements.

*Improving inter-personal relations* Developing quality inter-relationships has a positive effect on all the parties. Positive inter-personal relations are a sure sign of success. The key to good inter-personal relations is to believe in the basic elements of trust, confidence and reliance. Research has shown that the primary cause of failures among executives was their poor inter-personal relations at the workplace. A manager with poor inter-personal relations will experience considerable stress and anxiety and exhibits lack of trust in others.

*Communicability of emotions* The influence of emotions is contagious and travels from one person to another instantaneously. A cheerful manager communicates a message of confidence and self-respect. In contrast, expressions of negative feeling by a manager communicate a message of pessimism, bitterness, suspicion and inferiority. Hence, the managers may learn how to communicate emotions through verbal and non-verbal mediums.

Reliability of EQ Test:-Reliability occupies a central place in psychology testing. According to Stanley, reliability is the first and primary requisite of any measuring instrument. It refers to internal consistency and temporal stability of the measurement. Both consistency and stability are intimately related but are used in the different contexts. When a test yields retest results consistent with test results, it is said to have temporal stability. More critically, consistency means the extent to which a test is internally consistent when only administered once. Both stability and consistency are included under the single term reliability. For the present scale, test retest and split- half reliabilities were computed. To determine the retest reliability, a sample of 150 of both sexes was taken, drawn from different strata of the population, as mentioned earlier. To measure the scale's stability coefficient, the scale "r" was computed between the two sets of measures. Test reliability was found to be 0.94. Split-half offers another method of estimating reliability coefficient. It too measures test scores' internal consistency. To estimate split-half reliability, the 150 subjects' retest data was divided into two halves in two ways: even items and odd items, and first half and second half of the total scale. For odd-even items, split-half reliability was 0.89, and for first and second half, it was 0.91. All reliability co-efficient are significantly higher than required indicating that the present E.Q scale enjoys high reliability.

Validity of the EQ Test :-In psychological measurement, the problem of validity arises because measurement instruments are indirect. Because of this, it is essential to gather sufficient evidence to show that the test measures the traits or characteristics for which it was designed. Validity means trustworthiness and thus usefulness of the test. Validity concerns what the test measures and how well it does so. A test is validated against independent criteria; it is not governed by an all or none law; it is a relative term. The test is valid for a particular purpose and in a particular situation only. In the case of the present test, validity was determined with the help of two techniques: (1) face validity, and (2) empirical validity.

Face validity was established by a panel of five experts, who confirmed the test to be valid. Its empirical validity was assessed by correlating the scale with external criteria, using a sample of 60 subjects.

The test designed by Daniel Goleman, and the present scale were administered to these 60 subjects. Scores obtained from the two tests were correlated to determine the validity index. The validity correlation was found to be 0.92, confirming that the present scale is valid. It was correlated with the emotional intelligence test developed by Chadha (2001) on 60 subjects to determine the validity index. The correlation was 0.78, again confirming its validity. This is the first time that a test to measure emotional intelligence has been developed for the Indian population. Any other psychological concept, the EQ test also has its share of criticism. Some psychologist's have doubt about the authenticity of E.Q measurement. They say that the idea that idea you can measure emotional intelligence like I.Q is very misleading. Emotional skills are slippery and relative in a way that I.Q is not. They believe that it may not be entirely possible to measure E.Q characteristics such as anger, frustration, love and empathy. For example, your communication ability with someone you know is different from your communication ability with a stranger, and each relationship will have its own characteristic emotional communication. If you try to measure empathy, your measurement will depend on whom you are empathetic towards. However, psychologists have established that it is possible to measure emotional characteristics of an individual by using scientific tools.

#### 5.4.2 JOB ANXIETY ASSESSMENT

Job Anxiety Scale (JAS):- Job Anxiety Scale (JAS) questionnaire developed by A.K.Srivatsava was used to measure the Job Anxiety. Seven sub-areas were identified and measured as part of JAS on subjects. They are 1. Security, 2.Recognition, 3.Human relation, 4. Reward/punishment, 5.Self-esteem, 6. Future prospects, 7. Capacity to work. JAS developed by A.K. Srivatsava was validated against Sinha W A self-analysis form (anxiety test) as well as Sarason's general anxiety test. Below are the sub areas measured by Job Anxiety Scale.

Table5.4: Sub-Areas in the Job Anxiety Scale

S.No	Sub-areas	Sub-area details
1	Security	Job security, personal security
2	Recognition	Fair evaluation, participation, praise, approval, freedom to show proficiency
3	Human-relations at work	Interpersonal (intra-cadre and inter-cadre) relationship, cooperation, communication
4	Reward and Punishment	Financial gains, treatment of supervisors, unjust criticism, blame
5	Self-esteem	Self-image, self-respect, social status of the job
6	Future Prospects	Opportunities of promotion and advancement, opportunity to learn and increase efficiency
7	Capacity to work	Shoulder responsibilities, Self-confidence, aptitude and interest for the job-activities

Selection of items:- For the pilot study the preliminary questionnaire was administered to a group of 200 blue-collar semi-skilled personnel to one of the biggest textile mills of India, situated in Kanpur. For the selection of employees the method of “stratified sampling by regular intervals” (Young, 1950) was adopted. For item analysis the index of discriminative potentiality of each item was worked out. For this purpose point-biserial coefficient of correlation (rpbi) was computed for all the 127 items. Since the scale was not designed to measure proficiency, difficulty index was not considered. The rpbi of the items ranged from 0.032 to 0.76. Excepting 15 items out of 127, all the items were found to be significantly beyond 0.01 level of confidence in their discriminative potentiality indicating that they could satisfactorily predict the criterion. To ensure the equal emphasis on the state of anxiety appertaining to various components of the job, almost equal number of items were selected from all the seven areas referred to above. Further, the number of items in each area was kept to the minimum possible with consideration that the “respondent-motivation” might not get affected by a long list of items. Even so, altogether 80 items were selected to constitute the final draft of the Job anxiety scale (JAS) of which 63 are true-keyed and 17 are false keyed. The cut-off score validation of the items was 0.29(rpbi) which is significant beyond 0.01 level.

Reliability of JAS scale:- To ascertain the extent of consistency of the results obtained by the Job Anxiety Scale, the split-half reliability coefficient by odd-even methods, on a sample of 414 employees, and the test-retest reliability coefficient on the sample of 110 employees were computed. The index of reliability for the scale as a whole and also for its seven sub-scales separately, was computed. The obtained reliability coefficients indicate that the scale is free from internal defects and possesses a fair amount of accuracy in assessing the extent of Job Anxiety. Standard error of measurement was found to be 5.26 which clearly indicates that the true scores did not deviate too much from their true value.

Validity of JAS scale :-The score on Sinha W-A Self Analysis Form (Anxiety Scale) was used as one of the validation criteria for the Job Anxiety Scale. The coefficient of correlation between the scores on the two tests was found to be 0.54 on a representative sample of 100 semi-skilled personnel. The obtained validity index indicates that the two tests measure the extent of anxiety, although the JAS basically measures the degree of anxiety manifested in a particular dimension of life of a specified social group. Sarason's general Anxiety test(1957) was also utilized to confirm the validity of the scale(JAS).The score obtained by a sample of 60 industrial personnel, on the two measuring devices, yielded correlation coefficient of 0.56. The obtained correlation index indicates that both the tests tend to determine the extent of manifestation of almost the same personality characteristics, though in different dimensions of life. The Score on Taylor's MAS(1953) was used as another criterion for determining the validity of the Job Anxiety Scale(JAS).

A small group of 51 literate semi-skilled employees were administered the two anxiety tests. The Coefficient of correlation between the scores on the two tests was found to be .48. For determining the homogeneity of the areas included in the Job Anxiety Scale coefficients of correlation, by product moment method, among the scores on seven sub-scales were computed on a sample of 414 employees. All the coefficients are significantly beyond 0.01 level of confidence indicating that all the seven scales assess the same phenomenon being manifested in different dimensions of Job-life. The results indicate that JAS scale selected is quite reliable to measure Job Anxiety of working professionals.

#### **5.4.3 Perceived Stress Assessment**

Perceived stress scale (PSS) developed by Sheldon Cohen was used for the purpose of assessing perceived stress of the participants in this study. The Perceived Stress Scale (PSS) is the most widely used psychological instrument for measuring the perception of stress. It is a measure of the degree to which situations in one's life are appraised as stressful. Items were designed to tap how unpredictable, uncontrollable, and overloaded respondents find their lives. The scale also includes a number of direct queries about current levels of experienced stress. The PSS was designed for use in community samples with at least a junior high school education. The items are easy to understand, and the response alternatives are simple to grasp. Moreover, the questions are of a general nature and hence are relatively free of content specific to any subpopulation group. The questions in the PSS ask about feelings and thoughts during the last month. In each case, respondents are asked how often they felt a certain way.

Because levels of appraised stress should be influenced by daily hassles, major events, and changes in coping resources, predictive validity of the PSS is expected to fall off rapidly after four to eight weeks. The PSS is related to measure stress, depression and anxiety (E. Remor, 2006). 10-item version of PSSC Scale showed adequate internal consistency such as a Cronbach's alpha of .67 (D. Y. P. Leung et al., 2010). The 10-item PSS had a test-retest reliability of .86 using a 7-day interval (R. Siqueira Reis et al., 2010), .77 using a two-week interval (E. Remor, 2006), and .53 to .61 using a 12-month interval (D. M. Golden-Kreutz et al., 2004).

#### **5.4.4 Permissions to use the scales for research purposes**

All required permissions from authorities/ authors of these scales to use it for the current research purpose was obtained ( Please refer to Appendix).

## **CHAPTER 6**

### **DATA EXTRACTION AND ANALYSIS**

#### **6.1 Data collection Procedure**

Data was collected through three questionnaires namely 1) Emotional Quotient Test Questionnaire 2) Job Anxiety Questionnaire and 3) Perceived Stress Scale Questionnaire for both yoga group and control group. Data was collected two times, before the start of intervention i.e on 15<sup>th</sup> September 2014 and at the end of intervention period i.e on 28<sup>th</sup> November 2014, for both yoga group and control group. All three questionnaires were supplied for both groups towards the purpose of data collection. A separate team was requested and assigned to distribute and administer the questionnaires and collect the filled-in forms from participants, so that masking or blinding was achieved in this study. Participants from both yoga group and control group were requested to fill up the questionnaires 'with what they feel' than 'what they think' for each question. Participants were also informed that there is no right or wrong answer for all the questionnaires. Participants were requested to answer questions honestly and not to spend much time in answering the questionnaires. It was assured to the participants that confidentiality would be maintained by making it clear that 'filled up questionnaires' would only be used for research purpose and no disclosures would be made to any participants on their individual/others/group scores. Collecting data became little cumbersome for both Yoga group and Control group and more specifically for control group. Though most participants filled up the questionnaires in designated places, however some questionnaires had to be collected at the participant's place during their free times. Few people did not return the questionnaires despite of couple of follow ups and they were considered drop outs. The decrease in interest level for filling and returning the questionnaires might also have caused some variation in the results for both Yoga group and

control group. Participants were also asked to observe changes that they believe were happening to them at physical, psychological level which may be affecting the work/family situations during the intervention period and record them. Participants were requested to write a brief summary of the changes observed in a free-written a format and share with the researcher towards the end of the intervention voluntarily. 15 participants from yoga group shared their experience of changes on what they believed happened due to regular practice of cyclic meditation, voluntarily, where-as none from the control group shared.

## 6.2 Scoring Procedure

### Emotional Quotient (EQ) Questionnaire

There are 22 situations listed in this questionnaire to measure EQ dimensions. Each situation is listed as one question in the questionnaire. Below is the breakup of the situations against various dimensions of EQ.

Table6.1: EQ questions distribution

Dimensions of EQ	Situations	Number of Questions
Emotional Sensitivity (ES)	2-8-16-17-22 ( 5 Situations)	5
Emotional Maturity (EM)	4-6-9-11-12-18-21 ( 7 Situations)	7
Emotional Competence(EC)	1-3-5-7-10-13-14-15-19-20 ( 10 situations)	10
Total EQ (Emotional Quotient)	All situations ( 22 Situations)	22

The scoring key is only available to the researcher. Each question was provided with 4 options (namely a, b, c and d) and the participant needed to select one of the four options as the answer. Possible scores for any option is 5, 10, 15 or 20. Any score is possible in a given question to options a, b, c or d. Hence there is no pattern among the scores allotted for a selected option.

Max and Min scores for each dimension of EQ : Based on the number of situations described and scoring described, Max and Min scores were derived like below.

Table6.2: Min-Max Score of EQ scale

<b>Dimension of EQ</b>	<b>Number of Situations</b>	<b>Min Score possible</b>	<b>Max Score possible</b>
Emotional Sensitivity (ES)	5	25	100
Emotional Maturity (EM)	7	35	140
Emotional Competence(EC)	10	50	200
Emotional Quotient (EQ)	22	110	440

### **Job Anxiety Scale (JAS) Questionnaire**

The questionnaire items were designed in such a way that they could be used for measuring the extent of job anxiety of working professionals irrespective of the nature of their jobs, organizations, and machines or tools they used. The inventory of questionnaire has 80 items. Each question has ‘True’ or ‘False’ option. Out of 80 items, 63 were True-keyed and the remaining 17 has been False-keyed with an a priori weight of one score each. Below is a table of the components of Job Anxiety and number of questions targeted to measure each component.

Table6.3: JAS scale sub-components

<b>Job Anxiety Area Components</b>	<b>Serial No. of the items constituting different areas of the JAS</b>
Security	1,8,15,22,29,36,43,50,59,80
Recognition	2,6,9,14,23,30,37,51,72,77
Human-relations at work	3,10,17,24,31,38,45,52,58,62,64,69,73,75,79.
Reward and Punishment	11,18,20,25,32,39,46,53,57,6,63,65,67,71,76.
Self-esteem	5,12,19,26,33,40,47,54,68,78
Future Prospects	4,13,16,2,34,41,48,55,61,66
Capacity to work	7,21,28,35,42,4,49,56,70,74.
Job Anxiety	All eighty

In the Job anxiety scale items on serial number 1,4,6,7,8,11,14,15,17,19,20,21,22,23,24,25, 26,27,28,29,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,50,52,54,55,56,57,58,60,61, 62,63,64,65,66,67,68,69,70,71,73,74,75,76,78,79 and 80 are true-keyed and items on serial number 2,3,5,9,10,12,13,16,18,30,31,49,51,53,59,72 and 77 are false-keyed statements.

Max scores in each area of Job Anxiety Scale :

In the Job anxiety scale items on serial number 1,4,6,7,8,11,14,15,17,19,20,21,22,23,24,25, 26,27,28,29,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,50,52,54,55,56,57,58,60,61 ,62,63,64,65,66,67,68,69,70,71,73,74,75,76,78,79 and 80 are true-keyed and items on serial number 2,3,5,9,10,12,13,16,18,30,31,49,51,53,59,72 and 77 are false-keyed statements. If the employee gives affirmative response, by marking ‘Yes’, to the True-keyed items it indicates his/her tendency for anxiety. Similarly, if the employee makes negative response by marking ‘No’ to the False-keyed items it confirms his/her anxiety tendency. The degree of Job anxiety may be determined by algebraic summation of the desirable endorsements to ‘True’- and ‘False’- keyed items. The maximum possible score is 80, the minimum being 0, with increasing score as indicative of higher degree of Job anxiety.

Table6.4: Min-Max score of JAS Scale

Sub Areas of JAS	Number of questions	Max Score possible
Security	10	10
Recognition	10	10
Human-relations at work	15	15
Reward and Punishment	15	15
Self-esteem	10	10
Future Prospects	10	10
Capacity to work	10	10
Job Anxiety	80	80

## **Perceived Stress Scale Questionnaire**

PSS scale has 10 questions. It is a five point Likert type scale. It has one of the following options for each question.

- 0 → Never
- 1 → Almost Never
- 2 → Sometimes
- 3 → Fairly often
- 4 → Very Often

PSS scores are obtained by reversing responses (e.g., 0 = 4, 1 = 3, 2 = 2, 3 = 1 & 4 = 0) to the four positively stated items (items 4, 5, 7, & 8) and then summing across all scale items. The maximum score possible for any of the participants is 40.

## **6.3 DATA ANALYSIS**

Data Analysis was done using IBM Statistics S.P.S.S 21 version. As Data was not normally distributed, we conducted necessary non-parametric tests. A non-parametric test named Wilcoxon signed rank test was conducted on the obtained data to record with in group, pre-post changes. Another Non-parametric test named Man Whitney test was conducted on the obtained data to record between the group pre-post changes. To observe the correlation between Emotional Quotient, Job Anxiety and Perceived stress among IT professionals, Karl Pearson correlation test was used. Yoga group participants who shared their experience which they believed happened to cyclic Meditation intervention was also analysed and categorized appropriately.

# **CHAPTER 7**

## **RESULTS**

### **7.1 RESULTS COLLECTED THROUGH QUANTITATIVE MEASURES.**

In this experimental study, results are collected through Quantitative measures using questionnaires. Questionnaires are standardised questionnaires as mentioned in the earlier chapter.

#### **7.1 .1 RESULTS FROM EMOTIONAL QUOTIENT MEASUREMENTS**

Figures (A1&A2) suggest that the Yoga and Control group's pre-distributions of EQ scores were not normal. This is confirmed by applying the Kolmogorov-Smirnov test ( $p>0.05$ ) (refer to Appendix -I). Comparisons within the group and between the group were computed using non parametric tests. Comparisons within the group were computed using Wilcoxon signed rank test for both Yoga group and Control Group. Comparisons between the yoga and control group were computed using Mann Whitney test. EQ test was used to measure four components namely Emotional Sensitivity (ES), Emotional Maturity (EM), Emotional Competence (EC) and overall Emotional Quotient (EQ). Overall EQ score gives an indication of Emotional Intelligence of the subject.

Table 7.1 indicates response on ES, EM, EC, EQ and PS components of Yoga Group, at the starting and at the end of study period.

Table 7.1 : - EQ scores for Yoga Group

	Pre		Post		% Change in Mean	p value (with in group)
	Mean	Standard Deviation	Mean	Standard Deviation		
<b>ES</b>	71.15	7.014	81.67	4.168	14.7846	.001
<b>EM</b>	117.29	6.681	132.4	2.727	12.8825	.001
<b>EC</b>	150.94	9.601	176.56	8.389	16.9736	.001
<b>EQ</b>	339.38	13.824	390.42	10.561	15.0391	.001

Yoga group has a mean score of 71.15, in ES component with S.D of 7.01 at the beginning of the study period. It was observed that the group increased its mean score to 81.67 with a S.D of 4.16 towards the completion of the study period, showing an improvement of 14.78 % increase in ES mean component. Yoga group has shown an increase of 12.88% in the mean score of Emotional Maturity (EM) component as well as an increase of 16.97% in the mean score of Emotional Competence (EC) component. Overall Yoga group has shown an improvement of 15.04 % in EQ from beginning of the study period to the end of the study period. The significance of these improvements is measured through wilcoxon signed rank test by measuring p values. Based on the p value, observed improvements in ES , EC, EM and EQ component is very significant (  $p < .01$ ).

Table 7.2 below indicates responses on ES, EM, EC and EQ components for Control group, at the starting and at the end of study period.

Table 7.2 :- EQ scores for Control Group

	Pre		Post		% Change in Mean	p value (with in group)
	Mean	Standard Deviation	Mean	Standard Deviation		
<b>ES</b>	62.81	7.643	67.71	7.92	7.0813	0.001
<b>EM</b>	123.33	4.874	126.15	4.026	2.2864	0.006
<b>EC</b>	150.52	10.118	157.4	9.62	4.5708	.001
<b>EQ</b>	336.37	16.833	351.25	17.057	4.3306	.001

Control group had a mean score of 62.81, in ES component with S.D of 7.643 at the beginning of the study period. It was observed that the group increased its mean score to 67.71 with S.D of 7.92 towards the completion of the study period, showing an improvement of 7.081% increase in ES component. Control group has shown an increase of 2.28% in the mean score of Emotional Maturity (EM) component as well as an increase of 4.57% in the mean score of Emotional Competence (EC) component. Overall Control group has shown an improvement of 4.33 % in EQ from beginning of the study period to the end of the study period. The significance of these improvements is measured through wilcoxon signed rank test by measuring p values. Based on the p value, observed improvements in EQ components is very significant ( $p < .01$ )

The significance of change in all EQ test components between Yoga and control group is measured with Mann Whitney test as shown in Table7.3.

Table7.3 Between the Groups (for EQ assessment)

	Pre	Post
Emotional Sensitivity(ES)	.001	.001
Emotional Maturity(EM)	.001	.001
Emotional Competence(EC)	0.876	.001
Emotional Quotient(EQ)	0.538	.001

Table7.3 shows difference between Yoga and control group in EQ scale dimensions. The baseline between Yoga group and control group is not significant in ES and EM components as p is significant during start of the study period. The baseline between Yoga group and control group is very significant in EC and EQ components as p reduced to  $< .01$  towards the end of the study.

### 7.1.2 RESULTS FROM JOB ANXIETY MEASUREMENTS

Figures (A3&A4) suggest that the Yoga and Control group's pre-distributions of Job Anxiety sub-Area scores were not normal. This is confirmed by applying the Kolmogorov-Smirnov test, ( $p>0.05$ ) and shown in (Appendix -I). Comparisons within the group and between the group were computed using non parametric tests. Comparisons within the group were computed using wilcoxon signed rank test for both Yoga group and Control Group. Comparisons between the yoga and control group was computed using Mann Whitney test. Job Anxiety Scale (JAS) Questionnaire developed by A.K.Srivatsava was used to measure the Job Anxiety of IT Professionals. It measures seven sub components of Job Anxiety as indicated under 'Assessment Tools' section of chapter5. Table 7.4 below, shows mean and S.D values of various components of Job Anxiety Scale in Yoga Group.

Table7.4 :- JAS scores for Yoga Group

JAS Component	Pre		Post			p value (wilcoxon signed rank test)
	Mean	S.D	Mean	S.D	% change in Mean	
Security	7.71	1.27	6.04	1.129	21.61	.001
Self-Esteem	7.52	1.32	5.70	1.57	24.11	.001
Recognition	7.73	1.26	6.21	1.15	19.68	.001
Human Relations at work	10.27	1.56	7.77	1.52	24.34	.001
Rewards & Punishments	10.58	1.44	8.87	1.52	16.13	.001
Future Prospects	7.56	1.21	6.35	1.02	15.98	.001
Capacity to work	7.46	1.25	6.42	1.48	13.96	.001
Job Anxiety (overall)	58.85	3.798	47.37	2.77	19.51	.001

As shown in Table7.4, mean value of security concern component decreased from 7.71 to 6.04 (21.61% decrease) between pre and post. Similarly, self-esteem concern component mean value decreased from 7.52 to 5.7 (24.11% decrease). Human Relations at work concern mean value decreased from 10.27 to 7.77 (24.34 % decrease). Recognition concern mean value decreased from 7.73 to 6.21 ( 19.68% decrease). Mean score on Rewards & Punishment decreased from 10.58 to 8.87 (16.13% decrease). Future Prospects concern mean value decreased from 7.56 to 6.35 (15.98% decrease). Capacity to work concern component mean value decreased from 7.46 to 6.42 (13.96% decrease). Overall job anxiety mean value decreased from 58.85 to 47.37 (19.51% decrease). To see the significance of change, wilcoxon signed rank test was used. It was observed that change is very significant in all components of Job Anxiety Scale (  $p < .01$ ).

Table7.5 below, indicates Mean and S.D values of various components of Job anxiety scale in Control group at the time of pre-post stages of the study period.

Table7.5 :- JAS scores for Control Group

JAS Component	Pre		Post			p value (wilcoxon signed rank test)
	Mean	S.D	Mean	S.D	% change in Mean	
Security	7.79	1.23	7.31	1.13	6.18	.001
Self – esteem	7.39	1.25	7.10	1.17	3.92	.002
Recognition	7.81	1.12	7.27	1.14	6.95	.001
Human Relations at work	10.81	1.46	10.08	1.38	6.78	.001
Rewards & Punishments	10.79	1.67	10.27	1.66	4.84	.001
Future Prospects	7.47	1.32	7.17	1.09	4.13	.004
Capacity to work	7.85	1.28	7.46	1.22	5.02	.001
Job Anxiety (overall)	59.94	3.41	56.67	3.35	5.45	.001

As shown in Table7.5, mean value of security concerns component decreased from 7.79 to 7.31% (6.18% decrease) between pre and post. Similarly, self-esteem concerns component mean value decreased from 7.39 to 7.10 (3.92% decrease), Human Relations at work concerns mean value decreased from 10.81 to 10.08 (6.78 % decrease). Recognition concern mean value decreased from 7.81 to 7.27 (6.95% decrease).

Mean score on rewards & punishment decreased from 10.79 to 10.27 (4.84% decrease). Future Prospects concern mean value decreased from 7.47 to 7.17 (4.13% decrease). Capacity to work concern component mean value decreased from 7.85 to 7.46 (5.02% decrease). Overall job anxiety mean value decreased from 59.94 to 56.67 ( 5.45%) decrease. To see the significance of change, wilcoxon signed rank test was used. It was observed that change is very significant in all components of Job Anxiety Scale (  $p < .01$ ).

Table7.6 :- Between the Groups ( for Job Anxiety assessment)

	<b>Pre</b>	<b>Post</b>
Job Security	.749	.001
Recognition	.912	.001
Human Relations at work	.076	.001
Rewards and Punishment	.418	.001
Self Esteem	.546	.001
Future Prospects	.847	.001
Capacity to work	0.062	.001
Job Anxiety	0.184	.001

Between groups, to observe the difference between pre post changes, Mann Whitney test was used(refer to Table 7.6). There is a significant change in all components of Job Anxiety ( $p < .01$ ).

### 7.1.3 RESULTS FROM PERCEIVED STRESS MEASUREMENTS

Figures (A5&A6) suggest that the Yoga and Control group’s pre-distributions of perceived stress scores were not normal. This is confirmed by applying the Kolmogorov-Smirnov test, ( $p>0.05$ ) and shown in (Appendix -I). Comparisons within the group and between the group were computed using non parametric tests. Comparisons within the group were computed using Wilcoxon signed rank test for both Yoga group and Control Group. Comparisons between the yoga and control group were computed using Mann Whitney test. Perceived stress was measured by using PSS scale developed by Sheldon Cohen. PSS questionnaire was designed to tap how unpredictable, uncontrollable, and overloaded respondents find their lives.

Table 7.7 indicates response on Perceived Stress(PS) component of Yoga Group, at the starting and at the end of study period.

Table 7.7 : - PS score for Yoga Group

	Pre		Post		% Change in Mean	p value (with in group)
	Mean	Standard Deviation	Mean	Standard Deviation		
PS	31.52	3.288	20.56	2.843	34.7715	.001

Yoga group has shown reduction of 34.77 % in the mean value of PS. The improvement observed in reduction of perceived stress is very significant as  $p < .01$ .

Table 7.8 indicates responses PS component of Control group, at the starting and at the end of study period.

Table 7.8 : - PS score for Control Group

	Pre		Post		% Change in Mean	p value (with in group)
	Mean	Standard Deviation	Mean	Standard Deviation		
PS	32.15	3.209	31.4	2.871	2.3328	0.191

Control group has shown a reduction of 2.33 % in the mean value of perceived stress. The improvement observed in reduction of perceived stress is not much significant as  $p > 0.05$ .

The significance of change in PS component between Yoga and control group is measured with Mann Whitney test.

Table7.9 :- Between the Groups for PS component

	<b>Pre</b>	<b>Post</b>
PS	0.171	.001

As shown in Table7.9, the baseline between Yoga group and control group is very significant in PS components as p reduced to  $< .01$  towards the end of the study.

### **7.3 RESULTS COLLECTED USING QUALITATIVE METHODS**

After the effective 8 week intervention period, 15 Participants from Yoga group came voluntarily to share their experience on changes observed which they believed happened due to practice of Cyclic Meditation. A Free style document was provided to participants to share their experience. Please refer to Figure A7 in Appendix-II for participant experience sharing document format. Experience as expressed by participants through participant experience sharing document were categorized into four major categories. However under each major category, appropriate sub categories were formed to reflect the interpretations done by the researcher. For example, statements from participants like *“Practice has positive effect on sleeping pattern”* were sub-categorized as *impact on sleep quality*. The four sub-categories of the major category *“Effect of C.M. on body/ breath level”*, are *Effect on Sleep quality, Effect on Body ailments, Effect on breath comfort* and *Effect on body comfort*. Similarly sub-categories of the major category *“Effect of C.M. on psyche level”* are *Effect on self-awareness, Effect on self-confidence, Effect on Decision making/Listening capability* and *Effect on psyche comfort*. Sub categories of *“Effect of C.M. at Workplace”* are *Effect on work-efficiency, Effect on handling work tasks* and *Effect on Job related stress Management*.

#### **Effect of the C.M. practice at Body/Breath Level**

Due to the nature of the Job, IT professionals need to be seated in chairs before the monitors for long hours in a day. Most of the times, IT professionals might not adapt most healthy pose for the backbone which can potentially cause back bone problems. Due to regular use of mouse and key board with the computer, IT professionals are more prone to wrist pains, shoulder joint pains etc. Also due to less physical nature of the job and as there is less body movements demanded by the job, IT professionals are also prone to obesity issues as well as prone to body laziness issues. As IT professionals work under cool air conditions constantly, IT professionals might also get exposed to breathing issues. As the job requires more of

mind share than body share, I.T professionals might be exposed to sleep issues as there is a possibility of imbalance in effort done between body and mind. Below are the impacts of C.M. under each identified sub category

Effect on sleep quality: - Most of the employees have reported positive effect of on sleep quality. Some of the experiences are listed below

*“Usually, I do not get proper sleep in the night. Also if I sleep longer hours by chance, I use to feel tired and sleepy all the time following wakeup. C.M. sessions helped me to get proper and continuous sleep for 6 hours, which is good enough for the body to relax. (Participant#7).”*

*“Before cyclic meditation practice, I was not able to sleep properly .I use to wake up in the middle of nights. When I wake up in the morning, I use to feel heavy. After continued practice of cyclic meditation, sleep times got really better. I feel fresh and relaxed in the morning. (Participant#12). “*

*“Now, I get a good and peaceful sleep, where earlier I had a disturbed sleep. I wake up with fresh mind without alarm (Participant#10).”*

Effect on Body Ailments:- Some of the participants also reported impact of C.M. practice on body ailments. Participant experience is as listed below

*“I often used to get head-aches (sinus problem) at least thrice a week which is drastically reduced after practicing cyclic meditation. (Participant#10). “*

*“I use to have back pain on daily basis. When I use to get up in the morning, I use to feel the pain a lot. After I practice cyclic meditation, I have no more back pain and feeling relaxed. (Participant#12). “*

*“Hands are becoming more energetic with standing asanas which are part of cyclic Meditation (Participant#6). “*

Effect on Body/ Breath comfort: - Some of the participants also reported impact on Body/Breath comfort level. Participant experience is as listed below

*“Body gets relaxed and gets energised better after cyclic meditation practice. I used to feel dizzy and tired while going back home from office earlier. After taking C.M., those feelings were gone. (Participant#7).”*

*“Body is much relaxed and feel lightness in entire body (Participant#2).”*

*“Conscious breathing as part of the meditation practice is helping to cure nasal related discomfort (Participant#5)”*

### **Effect of the C.M. practice at psyche Level**

As IT jobs demand more of their mind share, it is common for IT professionals to experience un-comfort at psyche level. Challenging projects and ambitious targets also add to experience negative effects at psyche level. Any effect on psyche might impact composure of the person, decision making/listening capabilities as well as psyche comfort. Below are the impacts of C.M. under each identified sub category.

Effect on Self-awareness:- Participants also experienced C.M. practice effect on Self-awareness. Some of the participant experience is as listed below

*“I have become aware of my thoughts and body movements. (Participant#1). “*

*“I feel calm and composed (Participant#7). “*

*“Compared to before, in stressful situations, I am cool minded. (Participant#10). “*

Effect on Self-confidence:- Participants also experienced C.M. practice effect on Self-confidence. Participant experience is as listed below.

*“I am able to handle things much better than before (Participant #4).”*

*“I feel confident about self being and feel easy in decision making. (Participant#10)”*.

*“Positive thinking got increased. (Participant#10). “*

Effect on Decision making / Listening capability:- Participants also experienced C.M. practice effect on listening capability as well as on decision making skills. Participant experience is as listed below.

*“I became more patient in listening to others. (Participant#12).”*

*“I am able to take decisions well after analysing all the pre & post actions of decisions (Participant#2).”*

Effect on psyche comfort: - Participants also experienced C.M. practice effect on psyche comfort. Participant experience is as listed below.

*“Mind is relaxing very well especially with Quick relaxation Technique as part of cyclic meditation practice (Participant#6). “*

*“This practice really brought down the stress level and calmed the mind. The simple Practices mentioned in the C.M programme were really effective (Participant#8).”*

### **Effect of the C.M. practice at workplace**

Some of the common challenges for Indian I.T projects are lack of sufficiently skilled resources assignment to projects, need to execute multiple projects simultaneously, ambitious project timelines, role ambiguity for employees, ever demanding customer expectations and cross cultural communicational challenges. Due to the challenges listed, I.T professionals may have challenging times in handling work related discussions/risk management/schedules which can potentially impact work efficiency, resulting in job related stress. Support from

sub-ordinates/ peers as well as supervisors, is also crucial for performing assigned tasks efficiently, else it would also result in job related stress. Responses from participant experience sharing document were also examined to assess the impact of Cyclic Meditation at the workplace. Below are the impacts of C.M. under each identified sub category.

Effect on work efficiency:- Some of the factors effecting work efficiency are ability to approach work in systematic way, ability to manage work schedules as well as ability to focus and solve problems at hand. Participants also experienced C.M. practice effect on work efficiency. Participant experience is as listed below.

*“I feel relaxed and able to solve problems in a better way without getting tensed. (Participant #1).”*

*“I am able to focus on work with greater intensity and am able to manage work schedules more effectively (Participant #7). “*

*“I am able to approach work in a more systematic way (Participant #2). “*

Effect on handling tasks at work: - Participants also experienced C.M. practice effect on handling tasks like work related discussions, ability to forecast risks as well as time management. Participants also experienced C.M. practice effect on handling tasks at work. Participant experience is as listed below.

*“I feel effectiveness in my way of approach in handling discussions which helped to increase my productivity (Participant#3). “*

*“It helped to use time effectively (Participant #1).”*

*“My Ability to manage risk got increased. (Participant #10). “*

Effect on Job related stress management: - Some of the reasons for job related stress for I.T. professionals are work overload, reacting to discussions hastily and in ability to keep cool mind under stressful working conditions, which can potentially have negative ripple effect on existing stress. Support of sub-ordinates, peers and super-visors also plays an important role on job related stress for I.T. Professionals due to demanding team work nature of the jobs. Participants also experienced C.M. practice effect on Job related stress management. Participant experience is as listed below.

*“Under stress situations, I can work easily with cool mind and complete the task successfully without errors. (Participant #10). “*

*“It helped to reduce tensions at work place and I feel relaxed in taking decisions compared to before. (Participant #12). “*

*“Earlier due to more stress, sometimes I tend to react to situations hastily. With a relaxed body and mind, I am able to appropriately respond to situations.( Participant #15). “*

*“Last few months, my workplace environment had turned from bad to worst. I had to cope with schedule challenges, not so supportive management during this time. This affected me both physically and emotionally. Because of these changes, I used to get angry with my kids/wife even for a small mistake and also couldn't get sleep well in the night. After started practicing cyclic meditation, I am more relaxed both physically and mentally. It definitely helped me to let out my stress. This in turn helped me in finding a new career opportunity as well. (Participant #15).”*

### **Effect of the C.M Practice on personal life**

With ever increasing demands of I.T jobs, I.T professionals are spending much more time at workplace than at home. It would not be un-natural to say that working professionals are becoming weekend partners and/or weekend parents. This is also one of the reasons for the rise in the family outings as well as family shopping in the weekends in India. Many IT jobs, demand professionals to work for the tasks even after reaching home in working days, if not weekends. As quality time spent at home for professionals is decreasing day by day, any disturbance at home/family would disturb the work efficiency of professionals. This might also be one of the reasons why “work life balance” is being talked out publicly by matured multinational IT companies. Participants also experienced C.M. practice effect on personal life. Participant experience is as listed below.

*“I am able to manage multiple tasks without feeling anxiety and stress. (Participant #9). “*

*“Cyclic Meditation practice has obviously increased the patience and it helped to handle the situations and relations effectively with family and friends ( Participant#3).”*

*“Also I must say, I am able to spend quality time with my family every evening.*

*(Participant #15). “*

## 7.4 RESULTS COLLECTED FROM CORRELATION STUDIES

As discussed before, the data of EQ data, JAS sub-areas and perceived stress were not normally distributed. Therefore non-parametric Pearson correlation test was used to see possible correlations on EQ, JAS and perceived stress correlations on baseline data of both yoga and control groups together. Please refer to below table for complete correlation.

Table 7.10 Correlation of EQ, JAS, PS components

	Es	EM	EC	EQ	ps	sec	rec	hr	rp	se	fp	cp	ja	
Es	Pearson Correlation	1	-.219 <sup>+</sup>	-.041	.390 <sup>++</sup>	.003	-.068	.093	-.182	-.045	-.085	.065	-.093	-.122
	Sig. (2-tailed)		.032	.690	.001	.980	.512	.368	.076	.666	.410	.527	.370	.235
	N	96	96	96	96	96	96	96	96	96	96	96	96	96
EM	Pearson Correlation	-.219 <sup>+</sup>	1	.301 <sup>+</sup>	.588 <sup>++</sup>	.046	-.007	.014	.145	.052	-.031	-.071	.012	.052
	Sig. (2-tailed)	.032		.003	.001	.657	.950	.894	.159	.614	.766	.492	.910	.618
	N	96	96	96	96	96	96	96	96	96	96	96	96	96
EC	Pearson Correlation	-.041	.301 <sup>+</sup>	1	.766 <sup>++</sup>	.033	.146	.135	.051	-.022	.075	-.013	-.113	.085
	Sig. (2-tailed)	.690	.003		.001	.748	.157	.190	.625	.832	.465	.903	.273	.410
	N	96	96	96	96	96	96	96	96	96	96	96	96	96
EQ	Pearson Correlation	.390 <sup>++</sup>	.588 <sup>++</sup>	.766 <sup>++</sup>	1	.062	.049	.140	.023	-.012	-.018	-.012	-.100	.021
	Sig. (2-tailed)	.001	.001	.001		.551	.638	.174	.822	.911	.863	.907	.330	.838
	N	96	96	96	96	96	96	96	96	96	96	96	96	96
ps	Pearson Correlation	.003	.046	.033	.062	1	.169	.025	.016	-.015	.059	.206 <sup>+</sup>	-.019	.155
	Sig. (2-tailed)	.980	.857	.748	.551		.100	.808	.876	.888	.568	.044	.854	.132
	N	96	96	96	96	96	96	96	96	96	96	96	96	96
sec	Pearson Correlation	-.068	-.007	.146	.049	.169	1	.173	.066	-.078	-.072	.123	-.081	.382 <sup>+</sup>
	Sig. (2-tailed)	.512	.950	.157	.638	.100		.091	.523	.447	.483	.231	.434	.001
	N	96	96	96	96	96	96	96	96	96	96	96	96	96
rec	Pearson Correlation	.093	.014	.135	.140	.025	.173	1	.149	.159	-.013	-.087	-.238 <sup>+</sup>	.411 <sup>+</sup>
	Sig. (2-tailed)	.368	.894	.190	.174	.808	.091		.147	.121	.898	.519	.019	.001
	N	96	96	96	96	96	96	96	96	96	96	96	96	96
hr	Pearson Correlation	-.182	.145	.051	.023	.016	.066	.149	1	.296 <sup>+</sup>	-.278 <sup>+</sup>	.119	-.001	.564 <sup>+</sup>
	Sig. (2-tailed)	.076	.159	.625	.822	.876	.523	.147		.003	.008	.249	.995	.001
	N	96	96	96	96	96	96	96	96	96	96	96	96	96
rp	Pearson Correlation	-.045	.052	-.022	-.012	-.015	-.078	.159	.296 <sup>+</sup>	1	-.154	.041	-.107	.499 <sup>+</sup>
	Sig. (2-tailed)	.666	.614	.832	.911	.888	.447	.121	.003		.133	.694	.298	.001
	N	96	96	96	96	96	96	96	96	96	96	96	96	96
se	Pearson Correlation	-.085	-.031	.075	-.018	.059	-.072	-.013	-.278 <sup>+</sup>	-.154	1	-.019	.001	.133
	Sig. (2-tailed)	.410	.766	.465	.863	.568	.483	.898	.006	.133		.855	.994	.197
	N	96	96	96	96	96	96	96	96	96	96	96	96	96
fp	Pearson Correlation	.065	-.071	-.013	-.012	.206 <sup>+</sup>	.123	-.087	.119	.041	-.019	1	.073	.465 <sup>+</sup>
	Sig. (2-tailed)	.527	.492	.903	.907	.044	.231	.519	.249	.694	.855		.481	.001
	N	96	96	96	96	96	96	96	96	96	96	96	96	96
cp	Pearson Correlation	-.093	.012	-.113	-.100	-.019	-.081	-.238 <sup>+</sup>	-.001	-.107	.001	.073	1	.222 <sup>+</sup>
	Sig. (2-tailed)	.370	.910	.273	.330	.854	.434	.019	.995	.298	.994	.481		.030
	N	96	96	96	96	96	96	96	96	96	96	96	96	96
ja	Pearson Correlation	-.122	.052	.085	.021	.155	.382 <sup>+</sup>	.411 <sup>+</sup>	.564 <sup>+</sup>	.499 <sup>+</sup>	.133	.465 <sup>+</sup>	.222 <sup>+</sup>	1
	Sig. (2-tailed)	.235	.618	.410	.838	.132	.001	.001	.001	.001	.197	.001	.030	
	N	96	96	96	96	96	96	96	96	96	96	96	96	96

Based on the Table 7.10, Emotional sensitivity (ES) is significantly correlated with Emotional Maturity (EM). Emotional sensitivity (ES) is most significantly correlated with Emotional Quotient (EQ). Emotional Maturity (EM) is significantly correlated with Emotional Competence (EC). Emotional Maturity (EM) is most significantly correlated with

Emotional Quotient (EQ). Emotional competence (EC) is most significantly correlated with Emotional Quotient (EQ). Perceived stress (ps) is significantly correlated with future prospects at work (fp) component of Job Anxiety. Security component (sec) is most significantly correlated with job anxiety(ja). Recognitions (rec) component is most significantly correlated with job anxiety(ja). Human relations at work (hr) is significantly correlated with rewards and punishment (rp) component of job anxiety. Human relations at work (hr) is significantly correlated with self esteem (se) component of job anxiety. Human relations at work (hr) is most significantly correlated with job anxiety(ja). Rewards and punishment (rp) is most significantly correlated with job anxiety(ja). Future prospects at work(fp) component of Job Anxiety is correlated with Perceived stress (ps). Future prospects at work(fp) component of Job Anxiety is most significantly correlated with job anxiety(ja). Capacity to work (cp) component of job anxiety is significantly correlated with recognition component (rec) of job anxiety. Capacity to work (cp) component of job anxiety is significantly correlated with job anxiety. Below is a table (Table 7.11) where correlations to specific components of EQ, JA and PS are mentioned.

Table 7.11:- Correlation between Specific components

		EQ	JA	ps
ES	Correlation-r	.390	-.122	.003
	Significance-p	.001	.235	.980
EM	Correlation-r	.588	.052	.046
	Significance-p	.001	.618	.657
EC	Correlation-r	.766	.085	.033
	Significance-p	.001	.410	.748
FP of JA	Correlation-r	-.012	.382	.206
	Significance-p	.907	.001	.044

## **CHAPTER 8**

### **DISCUSSIONS**

This Study investigated the effect of cyclic meditation on Job stress levels of Indian IT Professionals. Three questionnaires measuring Emotional Quotient, Job Anxiety and Perceived stress were administered before and after the study period of 8 weeks. The Cyclic meditation classes were conducted at the rate of five sessions per working weeks, on weekdays. Results show significant increase in all dimensions of Emotional intelligence and decrease in perceived stress as well as in Job Anxiety for IT Professionals after the end of intervention period. Results from Yoga group are extremely encouraging compared to control group. Results are as definite as can be expected for those on any single psychological test of this kind.

#### **8.1 Discussion on Emotional Quotient Results**

As could be seen from APPENDIX-I (Figure A1 and Figure A2), the EQ pre data taken before the intervention for both control group and yoga group is not normally distributed. Hence non parametric tests were conducted to compare the results both within and between the groups. Table 7.1 and Table 7.2 show that the data of EQ dimensions between groups did not differ much in any significant way before the intervention, which indicates that yoga and control groups are comparable groups for the purpose of this study. By the end of intervention period, yoga Group has shown an increase of 16.97% in the mean value of score concerning Emotional competence whereas control group has shown an increase of 4.57%. This increase of mean value of Emotional Competence (EC) in the Yoga group was observed to be very significant ( $p < .01$ ) within the group after administrating the non-parametric Wilcoxon Signed Ranks test as per the distribution result. By the end of intervention period, yoga Group has shown an increase of 14.78% in the mean value of score concerning

Emotional sensitivity whereas control group has shown an increase of 7.08%. This increase of mean value of Emotional Sensitivity (ES) in the Yoga group was observed to be very significant ( $p < .01$ ) within the group after administering the non-parametric Wilcoxon Signed Ranks test as per the distribution result. By the end of intervention period, yoga Group has shown an increase of 12.88% in the mean value of score concerning Emotional Maturity whereas control group has shown an increase of 2.28%. This increase of mean value of Emotional Maturity (EM) in the Yoga group was observed to be significant ( $p < .01$ ) within the group after administering the non-parametric Wilcoxon Signed Ranks test as per the distribution result. Yoga Group also has shown an increase of 15.03% in the mean value of score concerning Emotional quotient whereas control group has shown an increase of 4.33%. The increase of mean value of Emotional Quotient (EQ) in the Yoga group was observed to be significant at ( $p < .01$ ) within the group after administering the non-parametric Wilcoxon Signed Ranks test as per the distribution result. It also shows that, after the study period the difference between the two groups was highly significant mainly in the EC and EQ components as indicated by The Mann-Whitney U Test. Table 7.3 rounded the p-value to three decimal places, but the actual p value was far more significant, indicating that the differences observed between the two groups on EC and EQ are as definite as reliable as can be expected from a single study.

As per the EQ concept developed by Dalip Singh, Emotional Competency deals with ‘Tackling Emotional Upsets’, ‘ High Self-esteem’, Tactful response to emotional stimuli and Handling high egoism. Based on the qualitative data collected, it was also observed that Emotional competence among yoga group has improved due to intervention, below are some of the examples in that regard.

*“I have become aware of my thoughts and body movements. (Participant#1). “*

*“Compared to before, in stressful situations, I am cool minded. (Participant#10). “*

*“I feel calm and composed (Participant#7). “*

*“I became more patient in listening to others. (Participant#12).”*

When person can feel that he/she is thinking cool minded during stressful situations, then it can be expected that the person may respond tactfully to the emotional stimuli. Similarly when person becomes aware of his/her thoughts and body movements, then definitely he/she becomes more self-aware and can understand others' emotions in general. The fact that after 8 week sessions of cyclic meditation, the levels of emotional competency increased for the Yoga intervention group means their behaviour patterns were very slowly changing, and also during the intervening time period they had gained a certain amount of emotional competency in dealing with their own and other's emotions. Knowing self-emotions and able to respond tactfully to emotional stimuli is an important aspect of Emotional Intelligence which could be measured with Emotional Quotient.

Based on the quantitative data and qualitative data it could be established that cyclic meditation practice increases Emotional Quotient among IT Professionals. This shows that the null hypothesis (NH1), that practice of cyclic meditation has no impact on emotional quotient of professionals working in IT industry, is definitely not sustained. *Conversely, initial hypothesis (H1) that practice of Cyclic Meditation has impact on Emotional Quotient of Professionals working in Indian Information Technology Industry was definitely upheld.* This is in line with previous studies on effect of SMET Program where Cyclic Meditation plays crucial role. Sony Kumari et al.(2013), concluded in their study that SMET program increases emotional competency and Emotional intelligence among managers of a large textile industry. SMET program is also

found to improve autonomic balance in the participants by activating para-sympathetic system after sympathetic system arousal (Vempati & Telles, 2000).

## **8.2 Discussion on Job Anxiety sub-areas Results**

As could be seen from APPENDIX-I ( Figure A3 and Figure A4), the pre data of JAS scale taken before the intervention for both control group and yoga group is not normally distributed. Hence non parametric tests were conducted to compare the results of both within and between the groups. Table 7.4 and Table 7.5 show that the data of Job Anxiety Sub areas between groups did not differ much in any significant way before the study period, which indicates that yoga and control groups are comparable groups for the purpose of this study. By the end of intervention period, yoga Group has shown a decrease of 21.61% in the mean value of score concerning security concern component of Job Anxiety whereas control group has shown a decrease of 6.18% in the same component of Job Anxiety. This decrease of mean value of security concern component in the Job anxiety, in the Yoga group was observed to be significant ( $p < .01$ ) within the group after administrating the non-parametric wilcoxon signed rank test as per the distribution result. By the end of intervention period, yoga Group has shown a decrease of 24.11% in the mean value of score concerning self-esteem concern component of Job Anxiety whereas control group has shown a decrease of 4.00% in the same component of Job Anxiety. This decrease of mean value of self-esteem concern component in the Job anxiety, in the Yoga group was observed to be significant (as  $p < .01$ ) within the group after administrating the non-parametric wilcoxon signed rank test as per the distribution result. By the end of intervention period, yoga Group has shown a decrease of 19.68 % in the mean value of score concerning recognition concern component of Job Anxiety whereas control group has shown a decrease of 6.95% in the same component of Job Anxiety. This decrease of mean value of recognition concern component in the Job anxiety, in the Yoga group was observed to be significant ( $p < .01$ ) within the group after

administering the non-parametric wilcoxon signed rank test as per the distribution result. By the end of intervention period, yoga Group has shown a decrease of 24.34 % in the mean value of score concerning human relations at work concern component of Job Anxiety whereas control group has shown a decrease of 6.78% in the same component of Job Anxiety. This decrease of mean value of human relations at work concern component in the Job anxiety, in the Yoga group was observed to be significant ( $p < .01$ ) within the group after administering the non-parametric wilcoxon signed rank test as per the distribution result. By the end of intervention period, yoga Group has shown a decrease of 16.13 % in the mean value of score concerning rewards and punishment concern component of Job Anxiety whereas control group has shown a decrease of 4.84% in the same component of Job Anxiety. This decrease of mean value of rewards and punishment concern component in the Job anxiety, in the Yoga group was observed to be significant ( $p < .01$ ) within the group after administering the non-parametric wilcoxon signed rank test as per the distribution result. By the end of intervention period, yoga Group has shown a decrease of 15.98 % in the mean value of score concerning future prospect concern component of Job Anxiety whereas control group has shown a decrease of 4.13% in the same component of Job Anxiety. This decrease of mean value of future prospect concern component in the Job anxiety, in the Yoga group was observed to be significant ( $p < .01$ ) within the group after administering the non-parametric wilcoxon signed rank test as per the distribution result. By the end of intervention period, yoga Group has shown a decrease of 13.96 % in the mean value of score concerning capacity to work concern component of Job Anxiety whereas control group has shown a decrease of 5.02% in the same component of Job Anxiety. This decrease of mean value of capacity to work concern component in the Job anxiety, in the Yoga group was observed to be significant (as  $p < .001$ ) within the group after administering the non-parametric wilcoxon signed rank test as per the distribution result. By the end of intervention period, yoga Group

has shown a decrease of 19.51 % in the mean value of score concerning overall Job Anxiety whereas control group has shown a decrease of 5.45 % in the overall Job Anxiety. This decrease of mean value of Job Anxiety concern, in the Yoga group was observed to be significant ( $p < .01$ ) within the group after administrating the non-parametric wilcoxon signed rank test as per the distribution result. It also shows that, after the study period the difference between the two groups was highly significant in all sub-areas of Job Anxiety components as indicated by the Mann-Whitney U Test ( refer to Table 7.6). In Table 7.6 , though the p-value was rounded to three decimal places, but the actual p value was far more significant, indicating that the differences observed between the two groups on all sub areas of Job Anxiety are as definite as reliable as can be expected from a single study.

Based on the qualitative data collected, it could also be indirectly derived that Job Anxiety among yoga group got decreased due to intervention, below are some of the examples in that regard.

*“Positive thinking got increased. (Participant#10). “*

*“I am able to approach work in a more systematic way (Participant #2). “*

*“My Ability to manage risk got increased. (Participant #10). “*

It could be inferred from the above data that, with less job anxiety, one could approach work in more systematic way. Ability to manage risk gets better, with solution oriented approach as well as with less job anxiety.

Based on the quantitative data and qualitative data, it could be established that cyclic meditation practice decreases Job Anxiety among IT Professionals. This shows that the null hypothesis (NH2), that practice of cyclic meditation has no impact on Job Anxiety of professionals working in IT industry, is definitely not sustained.

*Conversely, initial hypothesis (H2) that practice of Cyclic Meditation has impact on Job Anxiety of Professionals working in Indian Information Technology Industry was definitely upheld.*

There are no relevant previous studies performed on the effect of yoga based practices on Job Anxiety and hence this study becomes unique to establish that yoga based practices reduces the Job Anxiety in IT professionals.

### **8.3 Discussion on Perceived stress results**

As could be seen from APPENDIX-I ( Figure A5 and Figure A6), the pre data of perceived stress scale taken before the intervention for both control group and yoga group is not normally distributed. Hence non parametric tests were conducted to compare the results both within and between the groups. Table 7.7 and Table 7.8 indicate that the data of perceived stress scale between groups did not differ much in any significant way before the intervention, which indicates that yoga and control groups are comparable groups for the purpose of this study. By the end of intervention period, yoga group has shown a decrease of 34.77% in the mean value of score concerning perceived stress score whereas control group has shown a decrease of 2.33%. This decrease of mean value of security perceived stress score, in the yoga group was observed to be significant ( $p < .01$ ) within the group after administrating the non-parametric wilcoxon signed rank test as per the distribution result. It also shows that, after the intervention period the difference between the two groups was highly significant in perceived stress score as indicated by The Mann-Whitney U Test ( refer to Table 7.9). Table 7.9 rounded the p-value to three decimal places, but the actual p value was far more significant, indicating that the differences observed between the two groups on perceived stress is as definite as reliable as can be expected from a single study.

Based on the qualitative data collected, it could also be indirectly derived that Job Anxiety among yoga group got decreased due to intervention, below are some of the examples in that regard.

*“I feel confident about self being and feel easy in decision making. (Participant#10)”*.

*“I am able to take decisions well after analysing all the pre & post actions of decisions (Participant#2).”*

*“This practice really brought down the stress level and calmed the mind. The simple Practices mentioned in the C.M program were really effective (Participant#8).”*

*“I feel relaxed and able to solve problems in a better way without getting tensed. (Participant #1).”*

*“I am able to focus on work with greater intensity and am able to manage work schedules more effectively (Participant #7).*

*“Under stress situations, I can work easily with cool mind and complete the task successfully without errors. (Participant #10). “*

*“It helped to reduce tensions at work place and I feel relaxed in taking decisions compared to before. (Participant #12). “*

*“Earlier due to more stress, sometimes I tend to react to situations hastily. With a relaxed body and mind, I am able to appropriately respond to situations.( Participant #15). “*

It could be observed that there is clear pattern of reduced stress at workplace due to practice of cyclic meditation. This is evident from participants' experience sharing on ability to react to situations without haste at work; solving problems without getting tensed; ability to take well thought-through decisions with increased ability to analyse, are few to mention. These observations shared by yoga group participants definitely encourages the statement that cyclic meditation practice helped to decrease the perceived stress at work place.

Based on the quantitative data and qualitative data it could be established that cyclic meditation practice decreases perceived job stress among IT Professionals. This shows that the null hypothesis (NH3), that practice of cyclic meditation has no impact on perceived stress of professionals working in IT industry, is definitely not sustained. *Conversely, initial hypothesis (NH3) that practice of Cyclic Meditation has impact on perceived stress of Professionals working in Indian Information Technology Industry was definitely upheld.*

Based on this study, it could be established that Practice of cyclic meditation helps to reduce job stress among professionals working in Indian IT industry. This current study is in line with observations done during a study on 178 adult workers where it was concluded that mental silence oriented meditation may have specific effects relevant to work stress and occupational health ( R Manocha et al., 2011). This current study also partially supports the empirical study done by Hasmukh Adia et al., (2010) on adopting yoga way of life in managers can play useful role in reducing job burnout among managers, as some of the participants of yoga group were managers.

#### **8.4 Discussions about effects of Cyclic Meditation**

As it is clear from previous sections, Yoga group has done extremely well compared to control group due to 8 week practice of cyclic meditation, for example perceived stress reduced by 34.77% in yoga group compared to 2.33% reduction in control group. The results from Yoga group due to Cyclic Meditation intervention are extremely encouraging and positive when compared to Control Group. The question therefore arises on how to understand these very powerful results from the Yoga group. Indeed, this study was hypothesized on the basis of general understanding of the effects of the Cyclic Meditation yoga practices, and the nature of components of Job Stress.

Let us take a quick glance at the results from previous studies on practice of Cyclic Meditation Practice. It was found that Cyclic Meditation component produces a restful state to mind and body by bringing down autonomic imbalance i.e. achieving balance between sympathetic and parasympathetic activity. This was seen in research on physiological responses (Vempati & Telles, 2000), and levels of oxygen consumption and respiration (Telles, Reddy & Nagendra, 2000). According to HR Nagendra (2003), levels of emotional imbalance correlate with levels of autonomic imbalance; hence reducing autonomic imbalance will tend to bring emotional balance. Mastery over emotions by those who have developed greater EQ involves reduced physiological and psychological arousal, and increased awareness. If imbalances are removed at physical, mental, and emotional levels by practice of yoga techniques, including meditation, emotional and autonomic balance will result and there will be deeper awareness of feelings as well as increased ability to handle them wisely. There are three levels of consideration, purely physiological arousal, psychological to do with personality, and awareness, concerning the mastery of the emotions by those who have developed full emotional intelligence. For example, sympathetic arousal is one aspect of normal function. However, if it is

unnecessarily prolonged, autonomic imbalance will result. Similarly, if a person is continuously exposed to negative situations, this will result in higher degrees of emotionality as a personality factor. When this occurs autonomic imbalance will be chronic. If, on the other hand, imbalances at all levels are reduced by practice of CM and other meditation techniques, then emotional and autonomic balance result is possible. It also results in deeper awareness of feelings and emotions, and increased ability to handle them wisely. This is what is apparently being seen as an effect of CM on EQ and EC scores of Yoga group , which outperformed the control group. Further understanding on CM meditation practice effects on body and psyche, would possibly help to understand positive effects of it on reduction of Job anxiety and perceived stress components. Cyclic Meditation practices are known to improve balance in the autonomic nervous system as mentioned before. To be precise, the sympathetic nervous system is mildly activated by performance of Yoga asanas, while the parasympathetic nervous system is activated in the rest periods that follow each set of asanas practised. The result of these alternating periods of activity and rest, designed in accordance with Gaudapada's Karika, is to provide a highly effective means of bringing the autonomic nervous system into a state of balance. Moreover, this state of balance is not inactive. It is one where both the sympathetic and parasympathetic components are moderately, but not excessively, activated. It produces a sense of a warm, protective envelope shielding for the individual from conflicting emotions that may be raging with in them. The autonomic nervous system is deeply connected to the emotions. On the one hand, it is activated in various different ways when the brain enters an emotional state due to the perception of some object or memory with emotional associations. On the other hand, it is reciprocally connected to the emotional centers in the mid-brain, and when it is brought back into balance, and it tends to redress emotional disequilibrium. Rebalancing the autonomic nervous system is

therefore an effective means of coordinating emotions. Co-ordinated and balanced emotions in the individual would naturally shield the individual from anxiety and perceived stress.

With above deeper understanding on effect of C.M, let us examine how it would have impacted various sub-areas of Job Anxiety. Let us consider each component of Job anxiety as described by AK Srivatasava(1977) below. All the sub components of job anxiety are equally applicable to Indian IT professionals as it is evident from previous chapters.

### **Discussion on effect of CM on Job Anxiety Scale Sub components**

Influence of CM on Job Security: - As it is evident from previous discussions, CM helps to increase Emotional Competence. This means that even in cases of Job security/ Personal security threatening situations, one would pick up the relevant emotions which drive the actions concerning security threatening situations. It is generally accepted that with solution oriented approach, one would have high chance of sailing through Job security threatening situations successfully.

Influence of CM on Human Relations at work: - Key thing in maintaining human relations at work is ability to 'listen'. This helps to start a new relation at work place and sustain the existing relations at workplace. At the end, work place is also filled with Human resources and not just mere machines. As it is evident from some of the participant feedback, CM practice helped to increase 'listening abilities'. So definitely concerns relating to Human relations at work would come down, to due to practice of cyclic meditation.

Influence of CM on Recognition, Rewards and punishment: - With positive human relations at workplace with supervisors/peers/ and sub-ordinates, there is high chance of recognition, provided responsibilities assigned are done well by the employee. As perception about the employee would be fairly positive with better human relations at work, rewards also naturally follow. Also monetary benefits achieved by the employee would also get better. In some

situations, employee may raise beyond the want of recognition and focus on correctly delivering on assigned responsibilities. This is inline what Lord Krishna said in “ Karma Yoga” on “ one should focus on the actions , but not the fruits of the actions”. Though in the limit period of study, it may not be evident on whether practice of CM would take to that level of “ action oriented” approach without expecting “ fruits” in return, but this could be future study topic. However it is clear that with balanced mind and action oriented approach, Job anxiety concerns in the areas of recognition, rewards and punishment would be reduced.

Influence of CM on Self-Esteem:- Regular and repeated CM practice, helps to take the participant into deeper and subtle awareness and takes closer to “anandamaya Kosha”. As it is evident from quantitative results as well as from participant feedback that, participants could feel more self-awareness and able to think through the possible consequences of actions before making decisions, indicate that their Self- dependency component increased in yoga group participants. Increase in Self-dependency would booster self-image and gain self-respect and in turn enhances ‘Self-Esteem’.

Influence of CM on Future Prospects: - It is evident from participant feedback as well as from quantitative result that CM practice helped to decrease the concern in the areas of Future Prospects. This could possibly due to high “ Self-esteem” in the organisation and ability to manage risk effectively.

Influence of CM on Capacity to Work: - It is clear from the working principle behind cyclic meditation that, CM helps to restore the homeostasis to autonomic nervous system for the participant. This increases capacity of psyche and body to contribute to the work.

## 8.5 Discussion on correlation study Results

Correlation results concerning EQ dimensions, Job Anxiety components and perceived stress were presented in Table 7.10. These results showed some interesting results for interpretation. It could be observed that security component, recognition, human relations at work, rewards and punishment at work, future prospects at work and capacity to work are most significantly correlated with Job Anxiety. Emotional Sensitivity, Emotional Maturity and Emotional competence are mostly correlated with Emotional quotient. Emotional quotient component is not correlated with perceived stress. Future Prospects component of Job Anxiety is correlated with perceived stress.

Though it looks like there is no correlation between perceived stress and Emotional quotient, there exists an indirect correlation. For IT professionals, future prospects at work is very important as they know that their job career is dynamic and may not be specific to one company. It means that in the current working set up, even if other components of Job Anxiety are not connected, concerns in future prospects at work gives great indication of Job Anxiety for IT professionals. It could also be seen that job anxiety regarding future prospects at work is negatively correlated with emotional intelligence. However if study on larger population of Indian IT professionals were to be done, more significant correlation results between emotional intelligence and job anxiety may evolve. With the current analysis of the results, it could be concluded that Emotional quotient is negatively correlated with Job anxiety; Job Anxiety is directly connected with Perceived stress among Indian IT professionals. This shows that the null hypothesis (NH4) which states -among Professionals working in Indian Information Technology Industry, there does not exist a relationship between Emotional Quotient, Job Anxiety and Perceived stress is definitely not sustained. *Conversely, initial hypothesis (H4) which states -among*

*Professionals working in Indian Information Technology Industry, there exists a relationship between Emotional Quotient, Job Anxiety and Perceived stress is definitely upheld.*

So from correlations studies, it could be concluded that for Indian IT Professionals

Job Anxiety  $\propto$  1/Emotional intelligence;

Job Anxiety  $\propto$  perceived stress at work (Job stress)

## **8.6 Discussion on popular Job stress models**

As discussed under scientific literature section of this current study, few of the popular models on Job stress considered were, demand-Control model, Person- Environment Fit Model and High Effort- Low reward imbalance model. All these popular models are based on understanding of the distress effects and are outwardly looking at environment/ control at work place. Sir Cary Cooper & Debra Nelson (2005), have called up on stress researchers to include 'Eustress' in the upcoming stress impact defining models. So any forward looking integrated model of mental strain due to Job stress needs to consider both positive and negative states of work related stress and its impact on worker. Everybody is uniquely different in coping up with stressful scenarios faced. Some people may turn these situations into opportunities while others may lose existing opportunities. So any mental strain faced by the individual due to stress related scenario is also conditioned by the self-orientation of the individual. As these popular models, do not consider self-orientation/ self-condition of the individuals, they are not complete in understanding the effects of Job stress on Individuals. As it is established in this current study, psyche/body nurturing practices (cyclic meditation in this case) can play a significant role on self-orientation / self-conditioning of the working population. It is also established with help of current study that cyclic Meditation can help to decrease job stress in IT professionals in specific, though the findings may be applicable to

all working populations. With the support of the current study, new integrated model was thought through to help understand the impact of Job stress on working population.

### **Integrated Model to understand Impact of Job stress**

In today's modern medical world, it is well accepted that mental well-being drives physical health as one of the key vector. This is in accordance with literature from ancient Indian view as well. So, by being able to condition the mind, the response to stressful situation could also be modified, which could potentially alter impact of mental strain due to job stress on the individual. This principle is grossly missed in the existing models while describing impact of mental strain due to Job stress. Any stimulus external or internal, which can cause 'stress' is called 'stressor' in stress research. So in this integrated model, along with work related stressors and Person related stressors, due consideration was also given to the effect of body/mind nurturing practices. Existing psyche deposits due to impact of previous stressful situations faced, also plays a significant role in responding to current and future stress stimulus situations.

**Work related stressors:** - Work related stressors could be further categorized as environment stressor and organisation stressors. Work related stress variables, which are governed by changing customer needs, government policies, market fluctuations, vendor costs, competitive pricing demands, back to school schedules etc., come under environment stressors. There may be little control for employers as well as employees of a business enterprise on the environment stressors. Stressors controlled by inter department and/or intra department practices followed with in the organisation, come under organisation stressors. Organisation culture in terms of setting ambitious targets, openness to employee concerns, cross cultural sensitivity, organised project management, risk management etc., also contribute to modifying organisation stress variables.

**Person related stressors:** - These are the stressors which arise from home as well as from work settings. Stressors like ill-health of family members/friends, financial loss of self/family members/friends, growing needs of family, necessity of support to family member education/health etc. come under personal related stressors arising from home. Stressors like lack of skills for current job, lack of decision making authority at work by virtue of position, over work demanded by the organisation, demanding schedules etc. come under person related stressors arising from work settings.

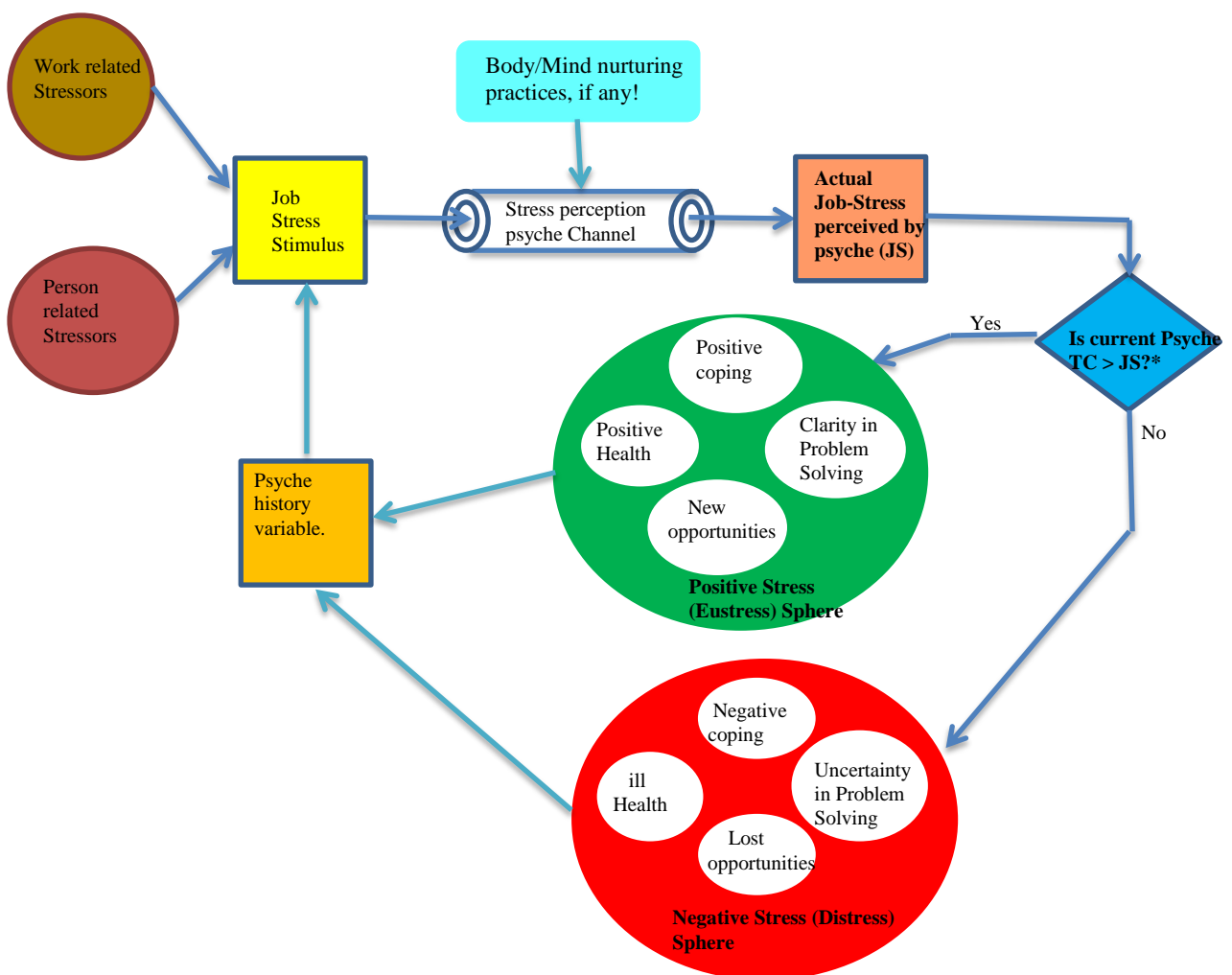


Figure 8.1 : Integrated Model on impact of Job Stress

### **Theory of operation explaining flow of Job stress stimulus and its impact:-**

Job stress stimulus for any worker is generated by work related stressors. This stimulus is influenced by both person related stressors as well as psyche history variable. This Job stress stimulus traverses through virtual stress perception channel in the mind. Body/Mind nurturing practices followed by the worker would have modifying effect on the job stress stimulus. Healthy mind nurturing practices like regular practice of Yoga etc. may reduce the agitation of the mind while perceiving the stress situations faced. Un-healthy mind nurturing practices like taking drugs etc., may increase the agitation of the mind while perceiving the stress situations faced. Every individual has stress tolerance capacity (TC) i.e. he /she can withstand the impact of stress situations faced by being able to return to homeostasis condition soon. If the actual perceived Job stress (JS) is less than the Tolerance capacity (TC) , then one would end up in positive stress sphere else in negative stress sphere. In the positive stress (Eustress) sphere, one would adopt positive coping skills like listening, focusing on solution based approaches etc. Positive stress sphere would help to find new opportunities which in turn increases the self-esteem of the worker resulting in positive health. In the Negative stress (Distress) sphere, one would use negative coping techniques like running away from problem, unable to listen to others etc., which would result in uncertainty to solve problem at hand. One, under the negative stress sphere may lose existing opportunities which may trigger ill health effects like depression. The net impact of either eustress or distress experiences would be stored as deposited psyche variable. This psyche variable plays a role in influencing the response to the next stress stimulus faced as well as stress tolerance capacity. By increasing the positive effects of mind nurturing practices, one can land up in eustress sphere even if challenging situations were created out of work related stressors

Validity of this integrated model on Job Stress:- The modifying factor on perceived Job stress as per this model is body/psyche nurturing practices. Cyclic Meditation is (one of the possible many) body/psyche nurturing practice as it has both stimulation/relaxation combine for both body and mind. This study is done in one of Indian IT company offices located in Bangalore over a period of two months. Assuming that, both person related stressors and work related stressors remained constant on an average over a period of two months, analysis from participant scores performing cyclic meditation for 2 months indicated drastic reduction in perceived stress as well as improved emotional quotient when compared to control group. From the written experiences shared by participants, it was clear that participants from yoga group were able to realize new opportunities at workplace. These opportunities may be effective risk management/ability to debug problems better/ effective listening in meetings etc. So current study also proves to be an evidence to validate this model. How ever this model needs to be validated in different industry set ups as well as with different companies in the same industry setup, to have robust validation coverage.

## 8.6 Uniqueness of the Current study

Research interest about the stress effects on Indian IT professionals started recently, but is on the growth path. Most of this research is on the effect of Job stress on ill-health symptoms based on surveys. Though effect of Yoga based life style in reducing the stress and burn out is an active research topic in general, there is little research done on effect of Yoga based practices on Indian IT professionals till date. Below is brief of the relevant recent research done on Indian IT professionals about relevant components of job stress effects.

- According to D. Nayak et al. (2014), IT professionals' environment of job is highly time-bound, client-concerned and technology concentrated. The trends in turn, attached with many factors, contribute to high Job anxiety.
- In a cross-sectional study performed on 1071 professionals from IT and IT enabled Services, working in Bangalore (IT capital of India), alarming facts were found: 31% of professionals are found to be hypertensive with approximately 5% having malignant levels of hypertension (Babu GR et al., 2013).
- Darshan et al (2013) in their study on professional stress, depression and alcohol use among Indian software professionals, observed that the software employees are professionally stressed due to job conditions and are at 10 times higher risk for developing depression and also there is a significant increase in the incidence of psychiatric disorders.

- In a cross sectional study on 200 IT professionals working in Delhi, with varied job profiles of IT industry, it was found that the frequency of computer related problems in the study group were: visual problems around 76%, musculoskeletal problems around 77.5% and stress around 35% ( AK Sharma et al., 2006).
- In a qualitative study performed on a sample of 26 IT professionals working in three different companies in Delhi, it was found that IT professionals are facing a huge amount of work stress mainly caused by heavy work load, inadequate staff along with role ambiguity affecting their family life ( Rajib Lochan dhar et al., 2010).

Based on the above it could be concluded that , current research is unique for following reasons:

- Current research studied the effect of Yoga based practices on Job Anxiety levels of Indian IT professionals.
- Current research studied the effect of Yoga based practices on Emotional Quotient levels of Indian IT professionals.
- Current research studied the effect of Yoga based practices on perceived stress levels of Indian IT professionals.
- Current research also performed correlation studies among Job anxiety, emotional quotient and perceived stress for Indian IT Professionals.

## **8.7 Summary of Discussions**

Based on the analysis of quantitative data on Emotional Quotient, Job Anxiety and perceived stress for Indian IT professionals, it could be concluded that Job anxiety is correlated with Job stress and Job Anxiety is negatively correlated with emotional intelligence. Based on analysis of both quantitative and qualitative data obtained, it could be established that practice of Cyclic Meditation has positive effect in reducing Job stress levels among Professionals working in Indian IT Industry. The current study also gave insights to validate newly and uniquely proposed integrated model on Job stress by taking Cyclic Meditation as a body/ psyche nurturing practice example. Uniqueness of current study is also elaborated which would be beneficial for Indian IT Professionals.

# **CHAPTER 9**

## **SUMMARY AND APPRAISAL**

### **9.1 SUMMARY**

#### **9.1.1 THE STUDY DESIGN**

A control study was designed to assess the effect of Cyclic Meditation on Job stress levels of Indian IT Professionals. The study was performed on a sample size of 96 subjects who were working in Bangalore office of Infineon Technologies India Pvt Ltd. The data was collected before and after 60 intervention sessions, using Emotional Quotient, Job Anxiety and perceived stress questionnaires. The written experiences from volunteering participants post intervention period were also collected.

#### **9.1.2 ASSESSMENTS**

Three questionnaires were administered: Emotional quotient test developed by Dr Dalip Singh & Dr NK Chadha, Job Anxiety Scale developed by A K Srivatsava and Perceived Stress Scale developed by Sheldon Cohen.

#### **9.1.3 RESULTS**

Results have shown that there was significant improvement in the scores of Emotional Quotient test and significant reduction in scores of Job Anxiety test and Perceived stress test after 60 sessions of intervention in Yoga group compared to Control group as measured through questionnaires. Voluntarily shared written experiences from Yoga group participants indicated reduction in perceived stress levels at work place. The correlation studies on Job Anxiety, Emotional quotient and Perceived stress on baseline data of both yoga and control

group indicate that Job anxiety is negatively correlated with Emotional Quotient and positively correlated with perceived stress.

#### **9.1.4 DISCUSSIONS**

The previous result on SMET based research indicated that SMET program has the ability to reduce metabolic rate and restore autonomic balance there by reducing stress. Cyclic Meditation is part of SMET based program. Indian IT professionals have a unique job profile involving uncertainty, mobility, flexibility, need for upgradation of IT relevant skills and time zone adjustments at regular intervals and thus are subjected to high amounts of Job stress. Present study was performed to study the effect of cyclic meditation on Job stress levels of Indian IT professionals. The present study was also aimed to understand the correlation between Emotional quotient, Job Anxiety and perceived stress among Indian IT professionals.

## 9.2 CONCLUSIONS

The study was aimed at evaluating the effect of cyclic meditation on Job stress levels of Indian IT Professionals. A sample of 96 IT professionals working in Infineon Technologies India Pvt Ltd, Bangalore, was selected for the present study. Job stress Levels were measured by administering three different tests. Pre and post data was collected before and after two months of effective study period. Based on the results of comparison between Yoga group and control group, the present study has unique findings for Indian IT Professionals.

They are as follows.

- *Regular Practice of Cyclic Meditation causes significant increase in Emotional quotient for Indian IT professionals.*
- *Regular Practice of Cyclic Meditation causes significant reduction in Job Anxiety levels for Indian IT professionals.*
- *Regular Practice of Cyclic Meditation causes significant reduction in Job stress levels for Indian IT professionals.*

It was also further observed that Job Anxiety is negatively correlated with Emotional intelligence and Job Anxiety is positively correlated with Perceived Stress among Indian IT professionals.

According to Fersling (1997), Yoga is regarded as a promising method for the treatment of stress-related problems. Current study enforces this observation in Indian IT professionals as it establishes that Cyclic Meditation Practice helps to greatly reduce Job stress levels. This study also seconds observations done by Murugesan, Govindarajulu, and Bera(2000) and Malathi, *et al*, (2000) that cyclic meditation being a yoga based practice, is promising for improving physiological and psychological measures as indicated by written experiences from some of the volunteers of yoga group. The current study also opens gates in understanding the role of body/psyche nurturing practices while assessing the impact of Job stress in “knowledge based workforce” by defining “integrated model on Job Stress”.

### **9.3 STRENGTH OF THIS STUDY**

This current study has unique strengths for Indian IT Professionals.

- This is the first study attempted to find the correlation between Emotional Quotient, Job Anxiety and Perceived Stress among Indian IT Professionals.
- This is first study attempted to find the effect of Yoga based practices on Job stress levels among Indian IT Professionals.
- This is the first control trial conducted on Indian IT Professionals to compare the effect of Yoga based practice in relation with equal duration physical exercises. The results from yoga group are very encouraging compared to control group as Emotional quotient scores increased by 15 % ( as against 4.33% in control group), Jon anxiety scores reduced by 19.51% ( as against 5.45% reduction in control group) and Perceived Stress scores reduced by 34.77% ( as against 2.33% in control group).

- Results of this current study would be of huge importance to Indian IT Professionals in adopting Yoga based practices to reduce the Job stress levels in the current dynamic IT industry.

#### **9.4 LIMITATIONS**

- a. The selection of subjects from a single company may not give robust evidence for the applications of the findings of this research to professionals from the IT sector in general.
- b. Findings from one type of IT sector (for example IT based products company in this case), may not be applicable to other type of IT sector ( for example BPO sector).
- c. Addition of female executives taking into consideration of the natural hormonal changes during menses, etc. variables, would have made the study more broad based.
- d. Details about “physical exercise” to control group for 30 minutes were not recorded and as such the intervention effect in post value of EQ, Job Anxiety and Perceived Stress in control group could not be factually explained in the control group. The discussions of possible reasons are at best conjectural.
- e. What happens to yoga group participants after long term needs follow up for at least two years. That study would have made the findings more acceptable for long-term application.

## 9.5 SUGGESTIONS FOR FUTURE

- a. Long term studies should be performed to measure links between Cyclic Meditation and E.Q., to check the ability of CM to improve general emotional well-being among Indian IT professionals.
- b. Long-term studies should also be carried out on effects of cyclic meditation on IT Professionals' personal lives.
- c. While this study has pointed to the beneficial effect of cyclic meditation on reducing Job stress levels, bigger sample size with stratification of bottom, middle and top line male & female IT Professionals from different companies can be taken up to throw light on the usefulness of cyclic Meditation in a greater context for IT professionals.
- d. Physiological, Neuro-physiological and FMRI studies on influences of CM on the above categories of IT professionals may be necessary to better understand the effect of CM in reducing stress levels in general.
- e. Effect of Cyclic Meditation on Innovation, Job Performance and Job satisfaction among IT Professionals need to be studied with a very long time intervention period of 8 months to 1 year.
- f. Regress studies on newly proposed integrated model in understanding job stress impact can be carried out under various industry setups. Yoga based intervention can be considered as intervention of body/psyche nurturing practice for these studies.
- g. Though Triangulation research method was employed for the current study by using both quantitate and qualitative criteria, more robust Triangulation research methods to be employed in the future studies in the above areas.

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