CHAPTER TWO

REVIEW OF THE LITERATURE

The chapter is based on the review of existing literature in order to have a better understanding of 24x7 work practices, BPO industry in India, the work practices at call centres and its relation to quality of life.

2.1 Changing World of Work

Over the past two decades, workplaces all over the world have experienced a wide variety of changes in the organization of work. In the Digest for Conditions of Work, International Labour organization (ILO, 1990) states the reasons for working time arrangements. The underlying causes of changes in the working time practices were, the renewed interests in flexibility for working time, derives from both social and economic change. Globalisation, market and competition pressures are changing our life in general and our work in particular. Some of the trends include (modified according to Frese, 2000):

- dissolution of work unity in space and time;
- faster rate of innovation;
- increased complexity;
- global competition;

The continued shift of employment patterns from manufacturing to service sectors has often been accompanied by increasing demands for round the clock or extended service periods such as changing patterns of working hours away from standard working week and workplaces operating 24 hours a day every day of the week (Hogarth et al., 2000).
But with a 24 hour society also emerged concerns about abnormal working hours.[Rajaratnam et al, 2001].

2.2 Shift Work- A New Type of 24x7 Work Arrangement

The term ‘shift work’ refers to those working-time systems in which work is done at different times over the day or at the same, but unusual time (like night shift; ergonomic definition according to (Knauth and Rutenfranz). The term shift work is defined as an arrangement of working hours that uses two or more teams shifts) of workers, in order to extend the hours of operation of the work environment beyond that of the conventional office hours. According to the International Labour Office, shift work is defined as: 'A method of work organization under which groups or crews of workers succeed each other at the same workstations to perform the same operations, each crew working a certain schedule or shift so that the undertaking can operate longer than the stipulated weekly hours for any worker. Often the term is used when more than one work period is scheduled in a workday or when most of the working hours fall outside the standard workday, such as evening, night or weekend shifts' (ILO 1986).

The increasing complexity and intensity of work, has pushed the organizations for striving hard to gain and sustain their competitive advantage, by reducing cost, increasing profits and enhancing the operations.(Burke et al, 2009). In order to have a competitive edge in terms of work operation, the organizations have moved away from the tripartite division of the day (eight hours work, eight hours leisure, eight hours sleep) towards shift work Rutenfranz et al. (1976).
2.2.1 Reasons For Shift work

Social and economic changes were identified as reason for change in the working time practices in order to provide services round the clock. Strong competitive pressures forced employers to identify ways to operate their enterprises for longer periods for better adjustments to seasonal or other fluctuations.

Reasons for shift work were found to be similar across different countries (Kogi, 2001). Extending the office hours beyond the day time shift were based on a need for continuous service. For example hospital services, police, security. Some operations have to be maintained on a continuous basis. Stopping operations in such enterprises may lead to product damage and loss of revenues. Some operations are cheaper during the night such as computer programmes, telecommunication systems. Social expectations, is one of the reasons for shift work for access of certain services round the clock.

2.2.2 Types of Shift work

Shift work schedule could be organized in a variety of ways. The varieties of shift work include: stable/permanently displaced working hours in which the work schedule used does not require a person to normally work more than one shift (including night work), rotating shift work in which an individual is normally required to work more than one shift, changing from one shift to another and unscheduled working hours. On-call shift is also a special form of shift work, where in case of emergency the particular group of workers are called for their duties. The most widespread shift system is when production is organized in eight-hour shifts, called morning, evening and night shifts (Scherrer, 1981).

Sergean(1971), states that the widespread use of three shift rotation in industry has developed since 1920s and represent about a third of the shift work system in use today. Rotational shift
work covers a variety of schedules and implies that shift rotate or change according to a set schedule. These shifts can either be continuous or running two or three shifts per day with or without weekends. Workers take turns working on all shifts that are a part of particular system. Night workers might work in the evening, in the middle of the night, overtime or extra long work day. Estimates of number of shift workers vary with the definitions and from country to country.

2.3 BPO Industry- An Overview

The introduction of computer technology during the 1980s and the 1990s facilitated the outsourcing of manufacturing jobs from high-wage countries to low-wage ones (Miiter et al, 2004). A number of services that could previously be delivered only through commercial presence now become deliverable by cross-border trade. Further, opening up of the market by many nations to allowed the commercial presence of the other nations in their respective economies and helped to bring foreign direct investment into the services sector. With the development of information and communication technology (IT), service delivery mechanism changed radically. Consequently, services that can be handled using computers and telecom networks have come to play a significant role. Business process outsourcing (BPO) industry is a result of this technological revolution (Rajeev, 2008).

Business process outsourcing (BPO) generally refers to the operation of letting out the task of performing certain functions of an enterprise to another enterprise, often a third party and, in some cases, a subsidiary of its own. These functions are usually non-strategic and non-core in nature though they can be very critical for a business enterprise (Williamson,1967).
The new technologies have enabled enterprises to organize their business across borders in new ways and outsource some parts of their value chains across countries. This process has great economic incentives in that it has helped enterprises achieve more efficiency by keeping the niche business functions in value-chains with themselves while contracting out non-core business processes which results in substantial cost reduction (Pradhan and Abraham, 2005).

Such cross border IT based services, are functions that are provided from one location to another over telecommunication or data networks (through wire line or wireless devices) and are either externally contracted (third party outsourcing) or provided by a remote subsidiary of the same company (captive BPO). In BPO literature, three terminologies are used as below, depending upon the distance of outsourced location from the parent company.

i. On-shore BPO: When an enterprise outsources its activities to another company located in the same country.
ii. Near-shore BPO: When activities are outsourced to a neighbouring country.

iii. Off-shore BPO: When business processes are outsourced to a remote or far off country.

The worldwide market for BPO-ITES was expected to grow at a rate of 6.3 per cent during 2011 and 5 percent in 2012 (http://www.informationweek.in). The global BPO market valued €217.8 billion in 2007 and is expected to reach €323.6 billion in 2011 (www.cbi.eu/download).

2.3.1 BPO- The India Story

The changes in the Indian economy over the last 20 years or so have been responsible for the growth of the information technology sector and, after that, the BPO industry. The liberal reforms implemented by the government set the stage for India to emerge as a superpower in the BPO industry. The growth of the BPO sector was made possible by the already established information technology sector and the availability of a large number of technically literate English speaking people in India. An analysis of the available information from secondary sources indicates that BPO is now the fastest growing industry in India, and India is considered the "electronic housekeeper" of the world (Bhattacharya et al 2003).

The Indian BPO industry's growth and increasing maturity is reflected across multiple dimensions. Within the global sourcing industry, India was able to increase its market share from 51 per cent in 2009, to 58 per cent in 2011, highlighting India's continued competitiveness and the effectiveness of India-based providers delivering transformational benefits. The Indian IT-BPO industry-aggregate revenues crossed the USD 100 billion mark in 2011. Export revenues (including Hardware) are estimated to reach USD 69.1 billion in FY2012 growing by over 16 per cent; Domestic revenues (including Hardware) at about USD 31.7 billion, growing by over 9 per cent. Software and services revenues (excluding Hardware), comprising nearly 87 per cent of the
total industry revenues, expected to post USD 87.6 billion in FY2012; estimated growth of about 14.9 per cent over FY2011. Within Software and services exports, IT services accounts for 58 per cent, BPO is nearly 23 per cent and ER&D and Software Products account for 19 per cent. The industry continues to be a net employment generator - expected to add 230,000 jobs in FY2012, thus providing direct employment to about 2.8 million, and indirectly employing 8.9 million people. Embracing emerging technologies, increased customer-centricity, deepening focus on new markets, adopting new business models are some successful growth strategies followed by the industry. This is reflected in widening service portfolio, increased scope of services, greater penetration across vertical and geographic markets served, evolution of business and engagement models, and development of global delivery capabilities by the Indian BPO industry.( NASSCOM-BPO Report 2011-12).

Fig 5: Contribution of BPO Sector to India’s Growth (Source: Nasscom BPO Report, 2011)
Fig 5: Employment Base of the ITES- BPO Industry in India

Source: NASSCOM, The IT- BPO sector in India, Strategic Review 2011, E- Estimates

Table 2 :-Knowledge Professionals employed in the Indian IT-BPO sector

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<tr>
<td>IT Exp &amp; Service Exports</td>
<td>170000</td>
<td>205000</td>
<td>296000</td>
<td>390000</td>
<td>513000</td>
<td>690000</td>
<td>860000</td>
<td>946809</td>
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<tr>
<td>BPO Exports</td>
<td>106000</td>
<td>180000</td>
<td>216000</td>
<td>316000</td>
<td>415000</td>
<td>553000</td>
<td>700000</td>
<td>789806</td>
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<td>Domestic Market</td>
<td>246250</td>
<td>285000</td>
<td>318000</td>
<td>352000</td>
<td>365000</td>
<td>378000</td>
<td>450000</td>
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<tr>
<td>Total</td>
<td>522250</td>
<td>670000</td>
<td>830000</td>
<td>1058000</td>
<td>1293000</td>
<td>1621000</td>
<td>2010000</td>
<td>2236614</td>
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* Figures do not include employees in the hardware sector

** FY- Financial Year

Source: Nasscom 2010
Fig 6: Revenue of the Indian ITes- BPO industry during the FY 07-11E

![Graph showing revenue growth from FY07 to FY11E]

Source: NASSCOM, The IT- BPO sector in India, Strategic Review 2011, E- Estimates

Table 3: Indian IT-BPO Industry - Sector-wise revenue break-up

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<td>IT Services</td>
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<tr>
<td>- Exports</td>
<td>13.5</td>
<td>17.8</td>
<td>23.3</td>
<td>31.0</td>
<td>35.2</td>
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<tr>
<td>- Domestic</td>
<td>3.5</td>
<td>4.5</td>
<td>5.5</td>
<td>7.9</td>
<td>8.3</td>
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<td>BPO</td>
<td>5.2</td>
<td>7.2</td>
<td>9.5</td>
<td>8.6</td>
<td>9.5</td>
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<tr>
<td>- Exports</td>
<td>4.6</td>
<td>6.3</td>
<td>8.4</td>
<td>6.4</td>
<td>7.3</td>
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<tr>
<td>- Domestic</td>
<td>0.6</td>
<td>0.9</td>
<td>1.1</td>
<td>2.2</td>
<td>2.3</td>
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<td>Engg Services and R&amp;D, Software Products │</td>
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<td>- Exports</td>
<td>3.8</td>
<td>5.3</td>
<td>6.5</td>
<td>8.6</td>
<td>9.5</td>
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<tr>
<td>- Domestic</td>
<td>0.7</td>
<td>1.3</td>
<td>1.6</td>
<td>2.2</td>
<td>2.3</td>
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<td>Total Software and Services</td>
<td>22.5</td>
<td>30.3</td>
<td>39.3</td>
<td>52.0</td>
<td>59.6</td>
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<td>Of which, exports are</td>
<td>17.7</td>
<td>23.6</td>
<td>31.3</td>
<td>40.4</td>
<td>47.0</td>
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<tr>
<td>Hardware</td>
<td></td>
<td></td>
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<tr>
<td>- Exports</td>
<td>5.6</td>
<td>7.1</td>
<td>8.5</td>
<td>12.0</td>
<td>12.1</td>
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<tr>
<td>- Domestic</td>
<td>0.5</td>
<td>0.6</td>
<td>0.5</td>
<td>0.5</td>
<td>0.3</td>
</tr>
<tr>
<td>Total IT Industry (Including Hardware)</td>
<td>28.1</td>
<td>37.4</td>
<td>47.8</td>
<td>64.0</td>
<td>71.7</td>
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</table>

*Figures may not add up due to rounding off*

Source: Nasscom 2010
The Indian BPO industry can be divided into five categories.

1. *Captive Units* set up by global companies that outsource their back-office operations from India.

2. *Indian Third-Party Vendors* that execute transactions and processes for international clients.

3. *Joint Ventures* between international BPO companies and Indian partners.

4. *Indian IT Software Companies* that have added BPO to their service portfolio.

5. *Global BPO Players* who set up call centers in India (for example, convergys)

**Fig 7: Service Offerings by the Indian ITES- BPO Companies**

Source: NASSCOM, The IT- BPO sector in India, Strategic Review 2011

The main activities or areas covered by the BPOs include customer care, such as remote maintenance, help desk, and sales support; finance and administration, examples of which are data analysis, medical transcription, insurance claims, and inventory management; and HR and payment services including payroll, credit-card services, check processing, and employee leasing. In addition, the BPO industry has expanded into engineering and design, animation,
market research, network consultancy and management, remote education, and content development (i.e., digital content, LAN networks, and application maintenance) (Nasscom Strategic Review 2011).

The Indian BPO Industry is an important part of the global sourcing strategy and has been increasingly contributing to the domestic economy over the years. In 2010, the Indian BPO industry accounted for 34% of the global BPO market, making the country the largest destination for BPO service delivery. While labour arbitrage has been a key driver for this growth, other factors such as access to talent, service quality, productivity, and time-to-market have gained importance. The sub-sectors that deliver the three most important services in India, viz., customer care, financial services and health care(www.dnb.co.in). The contribution of the three sectors to the BPO industry is more than 70% of the Indian BPO industry. Initially India was concentrating in a few sub sectors but over time diversifications to various service lines have begun. Today we observe companies moving up the value chain to capture the Knowledge Process Outsourcing (KPO) sector. Notwithstanding such achievements few sub-sectors remain dominant in the industry and customer care is one of them. Call centres alone generate more than 30% of the revenue generated by the sector (NASSCOM Strategic Review, 2005). The study mainly focuses on call centres.

2.3.2 Customer Care Segment (Call Centres) in India

Economies world-wide are experiencing a shift from manufacturing to knowledge-based services industries. Call centres (CCs) have become an important part of the service industry. They are on the increase not only in numbers but also in size (Barnes, 2001; Deery and Kinnie, 2004). One of the most publicized types of relocation of ITES from developed to developing countries is in the area of customer care services. Until recently, CCs meant only voice-based customer support.
However, the concept and nature of CCs is now rapidly evolving in countries like India to become what is at times referred as 'contact centres', which are often covered under the broad umbrella terms such as the business process outsourcing (BPO) centres or information technology enabled services (ITeS). India's emergence as the world leader in outsourcing has been mainly led by information and telecommunication technology-based offshoring services in the form of call centers.

The inception of Indian call centre Industry can be traced back to industry originated in the mid-1990s when American Express, British Airways and GE Capital established their customer support operations and transaction processing services (Nasscom, 2002a). In the late-1990s GE established India's first voice operation, and was followed by a speculative boom and overcapacity in third-party outsourcing.

From 2002 to 2003, the BPO industry generated more than 170 thousand direct employment opportunities and revenue worth Rs.113000 million of which the largest share of revenue and employment was generated in the customer care services such as Call Centers accounting for 38 percent of the employment (Pradhan and Abraham, 2005). Direct employment in Indian IT-BPO crossed the 2.2 million mark, an increase of about 226,000 professionals over FY2008; indirect job creation is estimated at about 8 million. (Nasscom 2008). The call centre industry in India is worth USD 5 billion and currently employs about 330,000 people. (http://articles.timesofindia.indiatimes.com/2012-03-19/outsourcing/31209878_1_credit-card-centre-workers-data)

India has certain features that make it a prime site for relocated call sector jobs. The relatively low cost of manpower makes India a very attractive base for sourcing cross border IT-enabled services. India's large English-speaking, highly educated and low-wage talent pool has
established itself as one of the fastest-growing outsourcing services markets in the world. India produces over two million English-speaking graduates every year who are ready to work for salaries that are as much as 80 percent lower than those paid to their Western counterparts. This availability of technical and computer-literate human resources who can offer lower response time with efficient and effective service makes India a magnet for multinational corporations (MNCs) (Budhwar 2005). Cheaper labour costs are only one reason for choosing India as a place to relocate services. India also offers a conducive environment which other developing countries do not have. India produces, on an average 2 million college graduates a year, (Economist, 13 December 2003).

Apart from people attractiveness India also enjoys a unique location attractiveness. A 12-hour time zone difference with the US and other markets for medical transcription or call centre services is also in India’s favour. Enormous savings are possible for foreign firms by outsourcing their processes to India because of the availability of a relatively inexpensive but strong and established infrastructure that offers telecom services, improved international bandwidth, technology parks, a well-developed software industry, and an existing base of blue-chip companies already operating there. Furthermore, with an emphasis on a secured environment, Indian BPOs are adopting standards such as ISO 17799, BS7799, COBIT, and ITSM.
These call centres mainly deal with insurance and retail banking work (Nasscom, 2003), although telcos, retailing, utilities, IT, airlines and software have also seen much migration (Nasscom, 2002a). Operations catering for the internal requirements of Transnational Corporations (known as ‘captives’), and indigenous third-party providers, are the most important organizational types. While Indian software/IT firms and traditional business houses are active, significantly the growing presence of global Business Process Outsourcing (BPO) companies (e.g. Accenture, EDS) is sharpening competition with third-party providers. Because offshoring contracts are growing in value, increasingly only larger companies with sufficient financial, infrastructural and human resources are able to meet the demands of international clients. Consequently, the number of medium-to-large third-party establishments is growing. Evident, too, is the growing number of joint ventures between UK/US and Indian companies, an observable trend in transnational production and service networks (Dicken, 2003). Migrating companies engage, not just in third-
party outsourcing (e.g. Aviva and EXL), but also in partnerships, co-sourcing (Prudential and ICICI) or remote sourcing (BT and HCL/Progeon) relationships with Indian suppliers. (Taylor and Bain 2005)

Call centres are most concentrated in the National Capital Region (Delhi), in the suburbs of Mumbai, and in Bangalore, Chennai and Hyderabad. To reduce risk, avoid overheating in larger cities' labour markets and draw on untapped, cheaper labour pools, companies have invested recently in 'second tier' cities such as Pune, Kochi and Ahmedabad (Nasscom, 2003), and in smaller locations like Mangalore, Mysore and Cochin.

Although the sustainability of the ongoing BPO boom appears to be positive for India, it also has serious repercussions. This is especially true in case of call centres where the global competition is becoming intense with countries like the Philippines, China and Malaysia competing with India. Hence the phenomenon of outsourcing needs to be understood with a holistic perspective

2.3.3 Operation of a Call Centre

Call centre is defined as a work environment in which the main business is conducted via the telephone whilst simultaneously using display screen equipment (www.hse.gov.uk/lau/lacs/94-1.htm). In other words, Call centres are locations where business related enquiries originate or are received by telecom networks. A call centre is a modern-day, computer and telephone-based organisation. Omar (2001) and Taylor and Bain (1999) have defined a call centre as a large, centralised, open-plan office with workstations that include a computer, a telephone set or headset connected to a telecom switch, and one or more supervisor stations.

Typically, in a voice-based customer care centre, a customer calls a toll-free number and an operator answers queries by accessing a database. call/ contact centre addresses sales support, airline or hotel reservations, technical queries, bank account operations, client services or
telemarketing. Technical support services for software or web sites are often non-voice (e-mail) based. In almost all call centres in India, there are activities round the clock in different shifts (Mitter, 2004).

A call centre employee's (also called call handler) job requires them to spend a significant proportion of their working time responding to calls on the telephone whilst simultaneously using display and screen equipment (DSE) (Spriggs et al, 2003). CCOs are important for organisations since they provide a link between the external customer and environment and the internal operations of the organisation (Malhotra and Mukherjee, 2004). In addition, CCOs represent the organisation and influence the service quality perceptions of the customer.

At a Call Centre, Employees have to:-

- perform 3 to 300 conversations per day
- work simultaneously with headsets and PC monitors
- have to follow corporate specific patterns (Shifts, Communicating with fake identity) with minimum violation in the conversation models (patterns), content and voice even in unpleasant situations.

Call centres seem to have the potential to completely replace face-to-face customer contacts through branch networks in services in the future (Malhotra and Mukherjee, 2004). Approximately two-thirds of all customer interaction with organisations in the UK now occur through call centres alone (Barker, 1998).

CCs use a range of information and communication technologies in order to maximize efficiency, and the technology that is the key to the CC is the ACD computer (ACD = automatic call distributor) (Taylor and Bain, 1999). This computer directs the calls to the next available and
logged-in operator. The computer also tracks how long it takes until the customer is connected, how long the call lasts and the time that the operator is not working actively with calls or is disconnected because he or she has left the workstation. This eliminates the need for a central telephone operator by automatically processing the distribution of incoming telephone calls to the operators, who receive them through their headsets and seldom have to dial telephone numbers themselves, or physically pick up a telephone receiver. Increasingly, ACD systems are connected to a range of databases using Computer Telephony Integration (CTI), which allows customer records to be transmitted to an agent’s computer screen along with the call. In addition, many ACD systems have “voice response” mechanisms that are used to obtain basic information from the caller before they speak to an agent. In external companies, Predictive Dialling technology is used in order to telephone large pre-programmed lists of customers. In this case, when the customer answers a call, the ACD system automatically transfers it to a waiting agent together with an on-screen computerised record of customer’s detail.

The content and quantity of calls at CCs varies with the complexity of the phone calls. Work tasks of low complexity might give less variation in work content and a higher quantity of calls. CC workers often spend 90 per cent of their working time on the telephone and in front of the computer (Ferreira, et al., 1997). The operators may sit in front of the computer most of the day, with both physical and mentally monotonous, and repetitive work. In the extreme case a phone call could be as short as 15-20 seconds, which means that one operator, could handle 1,000 calls or more during a working day (Westin, 1992). The service degree, e.g. answering 80 per cent of the calls within a given time, may also be a stress factor, in the same way as high work intensity. Other negative factors that have been reported: working on a varying roster, working in the evening and at night-time, rapid changes in work content and insufficient information.
Traditional performance indicators for call centers are following

- no of calls answered per operator
- % of calls which ended with sale or signed order (yield)
- sales volume per operator

These indicators however do not reflect actual relation between revenue and costs, because they do not include Costs of Poor Quality (COPQ) and losses due to illnesses.

COPQ comprises cost of:

- individual underperformance of employees
- illness days
- recovery and retention over time after illness,
- missing substitution of the employees during their absence
- quitting the job
- search for new personnel, their assessment, training and integration into work etc

Call centre work is considered to be demanding, repetitive, and often stressful (Taylor & Bain, 1999; Wallace, Eagleson, & Waldersee, 2000). This is reflected in high levels of turnover and absenteeism (Wallace and Eagleson, 2004). All this indicates that there is deterioration in the quality of life of employees.

Given the rapid growth of the call centre industry it is important from a practical perspective that organizations are aware of the impact of the emotional and psychological demands of call centre work on their employees. The COPQ of life of the employees is a relevant metric to be measured, to analyse and to control in order to optimize the effectiveness and well-being of
front-line workers and decrease the costs of turnover and absenteeism. In simple words it can be said that the need to maintain a standard quality of life of the employees is so critical for overall business performance and arises from the simple reason that the Cost of Poor Quality of Life is extremely high (Wallace and Eagelson, 2004).

2.4 Quality of Life

2.4.1 The Pressures of New Forms of Work

The continued shift of employment patterns from manufacturing to service sectors has often been accompanied by increasing demands for round the clock or extended service periods such as changing patterns of working hours away from standard working week and workplaces operating 24 hours a day every day of the week (Hogarth et al., 2000). Perceived job insecurity along with increasing workloads makes people demonstrate their organizational commitment by their continual presence at the workplace. (Simpson 1998; Management today 2000). Most workplaces have staff working regularly beyond their standard working hours, for which they were often not compensated. The main reasons offered by employers for requiring additional hours to be worked were temporary increases in workload and a backlog of work. Managers and professionals were the most likely to work additional hours, to work the longest additional hours and to do so without financial rewards (Hogarth et al., 2000).

Flecker and Hofbauer (1998) marked an important shift in the worker behavior from that prevailing in the first half of twentieth century. Under the taylorised work regimes the ideal worker was expected to rigidly carry out managerially prescribed task behavior, based on the principles of punctuality, reliability and obedience (Goldthorpe et al, 1968). In contrast, in the flexible work place, workers subjectivity - cognitions, attitudes, emotions - has come to be seen as a prime productive resource. The new model worker is supposed to surrender his or her
subjectivity and harness it to the goals of the organization (Cunningham et al. 1996). There has been exploitation of emotional labour particularly in the service sector (Taylor 1998). Workers are increasingly expected to extend their commitment by putting their whole selves into the job so much so that the traditional distinctions between work-life and home-life start to disappear. (Scase 2002)

2.4.2 The Pressures of Life

Work plays an increasingly dominant role in people’s lives. With the advent of non standard working hours the household life is becoming more complex and ultimately affects the sense of well being. There has been a decline of the extended family and increase in number of lone parent households. Complexity and tensions are also present in many people’s domestic lives through the need to manage relationships within families (Crow and Hardey 1999).

Another noticeable trend has been the growing participation in paid employment. with 45 percent of the workforce now women. Nearly 70 percent of the women are now in paid work, and 65 percent of women with dependent children work. Though employment rates of lone mothers are less, at least 48.6 percent, employment growth for this group over the past few years has been especially high (Labour Market Trends 2001). While women’s participation in the paid work has been growing, there has been little change in household responsibilities, with women continuing to undertake the majority share of domestic labour (Charles and Kerr 1999; Newell 1993).

A India today issue (25 April, 2005) mentioned that today’s workforce, irrespective of the gender, are spending so much time at work that it is affecting them physiologically and psychologically. Consequently their quality of life is deteriorating day by day.
2.4.3 The Effect of Shift Work on Workers/ Employees

Research have found that shift work has a profound impact on people’s lives and their sense of well being, ultimately affecting their quality of life. Rotating shifts affect workers efficiency and productivity. Many workers find that shift work upsets one’s circadian rhythm (24 hour body cycle) disrupts their family and personal life and leads to health problems including chronic fatigue and gastrointestinal disorders. On the other hand, some workers prefer shiftwork because it usually allows for more free time (http://www.ccohs.ca/oshanswers/ergonomics/shiftwrk.html) 27/09/2010. But what need to be understood whether these results can be generalized for all types of shift jobs or not and it is important to understand the line of difference as this will help in policy formulation.

a. Circadian Rythms

The functions of the human organism are linked to a 24-hour rhythm (circadian rhythm) and the change of day to night respectively (Wever, 1979). According to Pheasant (1991), the word circadian comes from the Latin “circa dies” which means “about a day”. Circadian rhythms are partly driven by the internal “body clocks” and partly synchronized to the external world by cues known as zeitgebers (German: Ziet, time; Geber, giver). These rhythms are coordinated to allow for high activity during the day and low activity at night. Normally the body uses cues from its processes and from the environment such as clock time, social activities, the light/dark cycle, and meal times to keep the various rhythms on track. The basic principle underlying the rhythm variations is catabolism (the breaking down and release of energy) and readiness for action during the day, and anabolism (regeneration) and rest during the night (Akerstdt, 1996).

The shift-worker’s temperature rhythm and other body rhythms get out of phase with the persons activity pattern. This disorientation can lead to feeling of fatigue and disorientation. “jet lag” is a
term, often used to describe these feelings (http://www.ccohs.ca/oshanswers/ergonomics/shiftwrk.html) 27/09/2010). The American Academy of Sleep Medicine recognizes jet lag as a sleep disorder typified by excessive daytime sleepiness and associated physiological impairments (Sack 2009). Working night shifts involve work during the nights and to rest during the day. To work against the body clock is a stress factor which demands additional effort (Vespa et al., 1998; Costa, 2003). With the number of successive night shifts the risk of errors and accidents increases (Folkard, 2003). Shift work can result in insomnia or non restorative sleep during the period of adjustment to a new schedule. It can lead to changes in hormonal levels which can impair cell growth and division. Moreover, workers rarely become habituated to unusual shifts (Haus and Smolensky, 2006).

The employees’ motivation and capability to work during the night are restricted fundamentally because of the disturbance in circadian rhythms (Folkard and Tucker 2003). Due to the increased activity level, noise, social and family requirements, sleep during the day can easily be disturbed and is of poor quality. Caused by the experienced tiredness the employees develop inadequate coping strategies. Shift workers reported an increased consumption of stimulants as cigarette, coffee and tea consumption, and more frequent use of laxatives, sleeping pills, pain killers, and cough medicine than did day workers. The use of stimulants activates the cardiovascular system only for a short time, whereas in the long run they are an additional health risk (Wallace et al 2002, Knutsson, 2003).

Individual differences can act as moderators that help some people respond to a stressful environment positively, while others respond negatively (Tjiong, 2000). The capabilities to adapt to shiftwork depend on the individual body clock. According to the chronotypes people can be classified as Homo larkensis and Homo owlenis (Minor et al 1981). Homo Larkiens
(Lark people) or the morning types are characterised by a rather shorter rhythm, while Homo Owlensis (Owl People) or the evening types have a longer rhythm.

According to the time of going to bed and awakening time, the owl people go to bed almost past midnight, while the lark types go to sleep around 22.00 h or even earlier than this. The lark people show signs of fatigue first. Alert and sharp in the morning, they begin to slow down and ease up as sunset approaches. The owl persons on the other hand have longer rhythm than 24 hours usually are more capable to adapt to a changed sleep-wake cycle. Individual differences, for example being morning active or evening active type, can explain some of the variations in adaptability to shift work (Folklard and Hunt, 2000).

b. Sleep

The most obvious and direct effects of shiftworking therefore relate to sleep deprivation, fatigue and a general sense of dissatisfaction. Shiftwork leads to disruption in circadian rhythms thus affecting the quality and quantity of sleep and leading to sleep disturbances, sleepiness and sleep disorder. The fundamental problem is the mismatch between the need for wakefulness and work activity during night hours when circadian rhythms are conducive to sleep, and for sleep during daylight hours, normally the time of wakefulness and activity (Akerstedt, 2003; Harma et al., 2002; Ohayon et al., 2002).

Sleep deficit occurs on two parameters, first a reduction in the actual number of hours slept, and secondly fragmentation of those hours. Normal sleep consist of different phases which occur at intervals throughout the night. The most important type of sleep for brain restitution, slow wave sleep, occurs during the first five hours of the sleep cycle. In shift workers sleep is displaced to daytime when hormonal activity is geared to promote wakefulness. Continuous sleep is therefore difficult to maintain and is becomes fragmented at a point when slow wave sleep normally
occurs. (Lavie et al, 1989). In addition to this problem shiftworkers are then required to work at a time which is sub-optimal in terms of their normal body clock. This reversal of the usual diurnal pattern underlies many of the sleep problems experienced by shift workers; environmental conditions (e.g. domestic and traffic noise, presence of children, normal social activities) may also contribute to disturb shift workers’ daytime sleep. Shift workers do have problems with sleep management, specially because they attempt to have sleep at unsuitable time of the day. Sleepiness is not only experienced during the night shift, a considerable increase in sleepiness has also been observed in workers while they return to day work soon after the night shift (Ákerstedt, 1995). An early start of morning shift at around 06.00 h has deleterious effects upon alertness and thus more sleepiness is experienced during the day.

Shift workers reported shorter sleep duration than day workers. (Mark et al 2010, Ursin et al 2005). The problem has been reported by rotating shiftworkers in a range of occupations such as textile workers in Bangladesh (Khaleque, 1991), and nurses in Spain (Escriba et al, 1992). The nature and magnitude of shiftwork effects depend on the type of schedule, particularly the direction and speed of rotation (Akerstedt, 2003). These factors combine to influence sleep, fatigue and performance differently during morning, afternoon, and night shifts, but productivity tends to be most adversely affected during night work (Folkard & Tucker, 2003). Sleep disorder causes a decrease in performance leading to decreased productivity. Major performance lapses have been found to occur at high levels of sleepiness (Gillberg et al, 1994).

The association between shift work and sleep disruption results in adverse medical and psychological consequences. Changes in mood state, increased feelings of fatigue, sleepiness and irritability, inability to concentrate and periods of misperception also occur on account of reductions in sleep length in night-shift workers (Williamson and Sanderson 1986). Short sleep
lengths are associated with decreased life expectancy (Kripke et al., 1979). The sleep disturbances reported by shift workers are both qualitative and quantitative and may lead to increased use of alcohol and hypnotics. The experienced fatigue of employees is a result of the number of hours worked, the timing of work within the 24 hours, the number of subsequent shifts and the amount of free time between the shifts (Rosa 2001; Folkard, 2003). Impairment of psychological health often leads shift workers to change to day-work jobs.

**c. Health Disorders**

Shift workers represent a high-risk group for illness possibly due to occupational stressors such as exposure to viruses and stressful shift-work that interferes with their biological rhythms (Lipkin, et al. 1998). Shift-workers are more likely to suffer cardiovascular and digestive disorders. Shift workers report significantly higher burnout, emotional exhaustion, job stress and psychosomatic health problems such as head aches, upset stomach, difficulty falling asleep than worker’s on a regular day schedule. (Jamal 2004). These, in turn, result in higher rates of absenteeism, employee turnover, and higher costs associated with recruiting and training replacement employees.

One of the detrimental effect of shift work on health is the increase in gastrointestinal symptoms and diseases. The nature of these gastrointestinal disorders includes loss of appetite, heartburn, constipation, stomach pain, flatulence and ulcers (Knutsson 2003). Digestive and gastrointestinal complaints are between two and five times more common in shift workers than in day workers (Caruso et al., 2004). The length of time a person has been working in a shift work environment is important in the development of these disorders. Peptic ulcers tend to be diagnosed after 5-6 years of shiftwork compared to 12-14 years in day workers (Costa 2003). Difficulties such as sleep related disorders tend to be transient and disappear after ceasing
shiftwork but gastrointestinal complaints have been found to continue after shiftwork is ceased (Thierry & Meijman, 1994).

Gastrointestinal complaints is linked to the presence of a number of risk factors including the timing and composition of meals, smoking and drinking. These factors lead to short term digestive disorders such as indigestion, heartburn and flatulence and may ultimately lead to ulcers (Barton et al, 1995). Qualitative and quantitative food intake also affect health of workers. Balanced intake, the time of the day for consumption and the frequency of intake affect the functioning of the stomach and its enzymes. The time of the day for consumption of food may affect uptake, digestion and metabolism. Normal rhythm in gastric functioning does not adapt to night work and consequently eating during the night exacerbates gastric problems (Mejean et al 1992). Thus frequent night eating may be related to undesirable metabolic effects, for example, increased levels of serum lipids or an increased body mass index in shift workers. Such problems are due to impoverished catering facilities and that poor food service or bad eating habits such as: the lack of hot food at night and so the reliance upon sandwiches, etc.; the tendency to nibble rather than take full meals; the higher intake of carbohydrate, caffeine and alcohol; and the higher consumption of tobacco are a major cause of gastrointestinal disturbances. Night workers had more sick days, non-prescription medication use (antacids and acetaminophen or paracetamol), gastrointestinal complaints (Harrington 1978).

People exposed to night shift working are at greater risks of heart diseases. (Bøggild and Knutsson 1999) found that social class was an important confounder of the relationship between shift work and heart disease. Shift workers coming from lower social classes reported high incidence of cardiovascular disorders. This was attributed to increased cholesterol levels due to frequent consumption of high fat and high carbohydrate snacks and irregular timing of meals.
Also shift workers reported lower dietary intake during night shifts than during morning and afternoon shifts. According to them, the redistribution of food intake from diurnal eating to nocturnal eating is related to serum total cholesterol, LDL cholesterol and HDL cholesterol, which might increase the risk for CVD. The cholesterol level has been witnessed to be higher in shift workers compared to day workers (Lennernas et al, 1994).

An association is found between shift work and number of days spent in shiftwork. There is an increased risk of ischemic heart disease (IHD), at least during the first two decades of shift working. In case of female shift workers, exposure to 6 or more years of shift work may increase the risk of CHD (Knutsson 2003).

Smoking habit seems to be more common among shift workers than among day workers. This can be attributed to abnormal working hours where smoking may serve as a stimulant or as a way to spend time during the night shift. Smoking behaviour makes a shift worker more prone to cardiac complications. Smoking habits may be related to the type of work and industry. A boring task (e.g. mail sorting, watching a computer monitor with 'nothing' to do) may favour smoking, while in high-risk industries (e.g. oil refinery) smoking is strictly forbidden (Knutsson et al 1992).

Improper diet, increase in smoking and alcohol consumption, lack of sleep and exercise have been cited as major reasons for increase in CVD. People exposed to night shift working are at greater risks of heart diseases because of the following factors:-

- the sleep contradicting the circadian rhythm,
- problems in social and private life as well as
- unfavourable health behaviour of shiftworkers (smoking, unhealthy diet, lack of exercise, alcohol).
Unfavourable working conditions as noise, heat, monotonous tasks etc. (Knutsson et al., 2003; Boggild & Knutsson, 1999; Liu and Tanaka (2002), Williams 2008).

An understanding of the causal link between shift work and heart disease will ultimately be of value in reducing the risk.

Suwazono et al. (2006) evaluated the relationship between shift work and the onset of diabetes among male workers in a Japanese steel company and they found a positive relation between the two.

In their study on the effects of shift work on mental health Bara and Arber (2009) found that the men who had worked nights for four or more years were more than twice as likely as men who had never worked night shifts to report mental health problems. However working varied shifts did not have a significant impact on men's mental health. For women, the results were almost the inverse for those of men, those working varied shifts for four or more years were more likely to report mental health problems than women who did not work varied shifts, but night work did have a significant impact.

There also exists an association between several possible pregnancy complications and shift work. Disorders of the menstrual cycle and reproductive system have been reported in many groups of women shift-workers. This includes disorders such as menstrual pains, abortion, interference with fetal development, premature and low birth weight (Bonzini, Coggon and Palmer 2007, Costa 2001). Disruption of circadian rhythms, and the resulting desynchronisation of cyclic physiological functions cause psychological stress and hormonal disturbance and is thought to be the most likely cause of menstrual problems among shift workers (Smith et al., 2003)
Evidence linking night work and cancer is largely specific to breast cancer; little is known about other types of cancer. Studies demonstrate associations between night work and elevated risk of breast cancer and the risk increased with age and length of exposure to night work (Hansen, 2001; Schernhammer et al., 2001).

Working at night disrupts the normal production of melatonin which in turn leads to an increase in reproductive hormones (particularly oestrogen), acting to increase hormone-sensitive cells in the breast and thus affecting tumour growth. (Schernhammer & Schulmeister, 2004). Melatonin secretion is normally at its peak at night, but production of this hormone is reduced as a result of light exposure during night hours. There exists a positive relation between different measures of light exposure at night and breast cancer risk. (Bovbjerg 2003). Night exposure to light of short wavelength suppressed melatonin secretion. Wearing goggles filters out light of short wavelength and thus can help preserving melatonin levels without impairing performance or alertness (Kayumov et al. 2005).

There also exists a link between duration of exposure to rotating night shifts and breast cancer. Relative to those who had no history of night shift work, women who worked 1-29 years on rotating night shifts had a risk of developing breast cancer that was eight per cent higher (Schernhammer et al. 2006). Incidence of prostate cancer have been reported among working men in Japan (Kubo et al. 2006). They found that those working rotating shifts had a significantly higher risk of prostate cancer than day workers as rotating shift workers experience greater disruption in circadian rhythms. Altered melatonin levels in humans have several proposed pathological implications such as sleep wake disorders, depression, breast and prostate cancer and cardiovascular diseases (Pandi-Perumal et al 2008).
On the basis of "limited evidence in humans for the carcinogenicity of shift work that involves
night work" and "sufficient evidence in experimental animals for the carcinogenicity of light
during the daily dark period (biological night)," an expert Working Group convened in 2007 by
the International Agency for Research on Cancer (IARC) concluded that "shift work that
involves circadian disruption is probably carcinogenic to humans" (Straif et al., 2007).
A worker's age is another crucial factor. The older employees find it more difficult to adapt to
night work. Shiftworkers older than fifty years have increasing difficulties in adapting to a
change of the sleep-wake cycle. They develop sleep disorders more frequently (Costa 2001).
Female shiftworkers, especially, report a weaker state of health more often (Oginska et al.,
1993). The poorly adapted night worker suffers from a potentially progressive state of chronic
fatigue, which is reflected through symptoms of irritability, loss of drive, depression, loss of
appetite, constipation and other disturbances (Pheasant 1991).

d. Accidents and Injuries

A more important area of impact is safety. Severe sleepiness ceases the interaction with the
environment ceases, and, if this interaction coincides with a critical need for action, an accident
ensues. (Tosvall et al 1987).

Night, rotating and irregular shifts all were associated with an increased risk of occupational
injury or illness compared with regular day shifts (Dembe et al. 2006). Sleep loss and fatigue
associated with circadian disruption impairs cognitive performance, particularly in tasks
requiring vigilance, concentration, and decision-making. This impairment potentially increases
the risk of accident and injury incidents (Meijman et al., 1993).

It has been found that the rate of serious accidents is higher at night than during the day (Folklard 1997). Accidents can be partly attributed to fatigue inducing work schedules. The
accidents resulting in injury are more frequent in machine-paced workers at night. The disasters of Three Mile Island, Chernobyl, and the Challenger space shuttle all occurred during the night (Smith et al. 2003).

e. Performance

In industries and factories, performance variables are of immense importance, because they are related both to productivity and safety. Global performance decrement is one of the harmful effects of shift work. Studies demonstrated that performance deteriorates during the night time (Folklard 1990).

Poor sleep quantity (sleep deprivation) and quality as a result of desynchronozation of circadian rhythms have been considered as the key factors in modulating the performance of shift workers during the night shift (Costa 2001). However, the interference of circadian rhythm in performance depend upon the nature of the task being performed. Night shift work is associated with reduced reaction time and poor mental arithmetic on the night shift. A higher error rate in performing addition problems and fewer signal detections during the night shifts (Folklard & Totterell 1992).

Performance is particularly affected in psychomotor types of tasks. Available data suggest that the output from a production process will not be affected by night work as long the major determinant of the production flow is machines rather than people. In summary, the level of work performance efficiency on a night shift depends primarily upon several factors, namely the demands of the task; the type of shift system and hence potential for both short- and long-term adjustment; individual differences between shift workers in the degree to which their rhythms adjust to night work; and sleep deprivation. (Gupta and Pati 1994)
f. Interference with Social and Family Life

Apart from the physiological de-synchronization, the social de-synchronization as well causes additional demands on the shift worker. Less attention has been given to the multiple forms by which the work might intrude into domestic life of employees. The intangible expressions of work into household life include exhaustion, feelings of stress and disturbed sleep patterns, and tendencies to continue worrying about work following completion of contractual working hours. These home demands are represented by family commitments (having dependent or care responsibilities, household responsibilities) which affect women particularly who might be described as coming home to a ‘second shift’. These pressures obviously lead to work life conflict further worsening their quality of life. (Hyman et al., 2003)

Working in shifts creates difficulties in family life and tends to restrict worker’s social and leisure activities (Khaleque 1998). Participation in clubs, sports and other organized activities is very difficult since they are usually geared to the normal day schedule. The lack of regular social contact can lead to feelings of loneliness and isolation (Pocock, 2003). The amount of leisure time of shiftworkers is equal to that of employees on day duty (Grzech-Sukalo et al., 1989), but differ in the position of the free time within the 24 hours of a day (Costa, 2003): Shiftworkers have to work at times when friends and family are having leisure time. Not only are shiftworkers affected by working in shifts, but their spouses reported significant disruption of social and domestic lives, as well( Smith and Folklard 1993.) Particularly, working at night, either on permanent or rotating shifts, often produces discordance with the spouse’s working hours and free time. (Escriba 1992).

Interference of shift work with participation in family life, because of both scheduling and fatigue may increase the risk of depression (Haines et al., 2008).
success and the development in school was found for children of shiftworkers. The characteristics of the particular shift system have to be considered when analysing the impact of shiftwork on family life. Different shift patterns may result in different psycho-social impairments (Grzech-Sukalo et al., 1989; Colligan & Rosa, 1990). Shift working possess serious adverse outcomes which include increased risk of employees experiencing a range of physical and mental health disorders, difficulty in balancing work and family life and poor relationships with family members with possible negative effects on children’s emotional and intellectual development (Pocock 2001).

Organizations need to promote programmes that aim at balancing the professional commitments of employees with the commitments at home.

Not all the research finds that long working hours have uniformly negative impacts. (Wooden 2001) show that majority of workers in Australia working long hours ( defined as 49 or more hours per week ) report being happy with their working hours and say they do not want to change their hours. However this analysis does not distinguish between those with dependent children and those without, or between males and females. The family circumstance of an employee is an important determinant of the impact of working hours on well being. People have been reported to join shift work to maintain a work life balance and devote more time to children (Golla and Vernon, 2006)

Some managers enjoy working beyond the conventional office hours to avoid the hassles of home life, including complaints by spouses about these excessive work hours. Such practice will outweigh any negative repercussions and might affect their quality of life positively (Hochschild 1997). Managerial and clerical workers, especially those with scarce expertise, did benefit from working flexibly as it might be a source of additional income (Purcell et al. 1999 ).
On the whole work hours are likely to have several implications for well being and for some workers, long working hours may be thus viewed as mixed blessings. For example such hours may enable the achievement of some key personal goals (increased income, sense of personal achievement) while at the same time generating difficulties in other areas of life (e.g. increased conflict with partner, missing out on important family activities) and in the long run, posing a risk to health if insufficient time is allotted to physical exercise, "unwinding" at night and sleep.

In summary, the reasons the individual work long hours appear to be complex and may be reinforced by their own outcomes, both positive and negative.

2.4.4 Call Centres work and Quality of Life

Call centre employees are often expected to deal with high workload, a lack of skill variety in terms of tasks, and an unpleasant working environment (Adorno, 1999). The nature of call centre environment is such that it contributes to physical, mental and psychological strain (Workman and Bommer 2004, Harris et al 2003). Several other risk factors can be identified in the CC environment, e.g. static workload, repetitive movements, high demands and low control (Ferreira et al., 1997; Hocking, 1987; Sprigg, 2003).

Working continuously on a computer is associated with stressful symptoms in the neck/shoulder and arm/hand region, eye discomfort, but also to stress-related problems (Haavisto, 1997; Hagberg, 1995; Karlqvist, 2002; Rabe & Rocha, 2002). Work with computers may lead to higher demands on cognitive resources, e.g. the working memory, and attentiveness, compared with more traditional work methods (Hockey, 1986; Norman, 1986; Salvendy, 1981). Call centres have been referred to as electronic sweatshops and the term 'battery hens' have been used to indicate the stressful nature of working in a call centre environment (Garson, 1998; Ferrie and Metcalf, 1998; Taylor and Bain, 1999). Stress, irritability, insomnia, sleepiness, and
interrupted sleep were significantly related with the occurrence of the work-related health complaints among the workers. Stress and sleep problems encountered from working in call centers, especially during the night hours, had an adverse effect on workers' health (Ho et al., 2003). The spillover effect of work is experienced through the difficulties in juggling complex patterns of working hours with domestic responsibilities and occupationally induced ill health such as fatigue and stress (Hyman et al., 2003). Demanding conditions from life outside work include physical and psychosocial demands on the individual from spouse, children, elderly relatives and household tasks. The family chores are, in general, more burdensome for females than for males (Josephson, 1999; Lundberg & Melin, 2002). Other factors included in life outside work are poor social support, conflicts with family members or friends, lack of time for own interests and lack of time for physical and psychological recuperation after work.

The majority of the work off shored to India has been from the United necessitating night-shift work due to time zone differentials. In India employee exit and burnout occur in extremes as compared to other countries because of certain generic problems. Call handling for overseas customers takes place at night, or late into the evenings (due to differing time zones), on shifts lasting eight to ten hours and often six days a week. 'Graveyard shifts commencing at one, two or three o'clock in the morning are not uncommon. Several managers identified the combination of night time working and repetitive call handling as particularly stressful, which takes its toll on agents health and on their social and family life. Widely experienced long commuting distances and traveling times compound these negative effects. (Taylor and Bain, 2004)

International research has established that there is a positive relationship between night shift working and the incidence of ill health (Sparks et al., 2001), but it is the repetitiveness of call handling, in which employees exercise little control (Karasek 1998) which marks Indian agents
experiences as even more pressurized than their UK counterparts. Working the night shift can not be adjusted to too easily and willingly. It does lead to a high level of stress as it isolates employees from their family, friends and social life (Goyal, 2003). The intrusion by work into domestic life impact to a greater extent, the young women workers who constitute half the Indian call center workforce. Women are particularly affected by the conflicts between working hours and the demands of task performance, and domestic, family and social responsibilities and expectations.

The built environment of the Indian call center industry are in line with the international standards. The buildings are sealed and that temperature, air conditions and humidity levels are controlled by Building Management Systems (BMS). However, it cannot be assumed that occupants do not experience problems. On the contrary, lacking fresh air and open windows, these artificially created micro-climates have been linked by the World Health Organisation to the phenomenon of 'sick building syndrome' (HSE, 1995). The symptoms will be exacerbated by the extremes of temperatures and humidity during the monsoon period experienced in India (India Handbook, 2002), which the BMS will be unable to counteract, particularly in circumstances of 24-hour building occupancy. Ill health and sickness are widespread where routinised labor processes take place within unsupportive ambient and ergonomic environments (Nasscom 2003; Baldry et al, 1997).

2.3.4 Employee Quality of Life

Quality of Life/Well being is a general term that has been used to describe both the emotional physical and social functioning of the individual. Much research has been devoted to the study of
well being in the work environment and the way in which an individual’s job can impact on mental and physical health (Ettner and Grzywacz, 2001).

Shift-work and night work in particular have implications for all people (Koller, 1996). Thus health hazards and stresses of work itself, as well as intervening factors from outside the working life may influence and impair the state of health. Review of literature reveals that Workers health, sleep problems and stress were the common factors that can affect the workers quality of life, performance, and turnover intentions (Ho et al., 2003).

There is an agreement that shift-workers are a population at risk. These effects are associated with disruption of circadian rhythms, and cause interferences with daily routine at work and in family and social life (Schwartz, 2010). Studies have documented higher rates of divorce and suicide, as well as increased use of alcohol and drugs on the part of shift-workers. Frustration, low morale, and diminished job satisfaction are also common among shift-workers (Kogi, 1996) and thus impairs quality of life by chronic fatigue, sleepiness and somatic symptoms and also by hindering requirements of daily social life (Puca et al., 1996). There is prominent irritability, reduction in coping skills with stress and reduction of resistance to prevent psychological problems (Saijo et al., 2008).

Many researches have focused on aspects of well being and job satisfaction in relation to unique work environments of call centres. In terms of employee well being, call centre work compares favorably with other forms of repetitive work such as shop floor manufacturing and clerical skills but little was said about the factors that may cause an increase or decrease in well being within a call centre. (Holman, 2002, Deery et al., 2002). The call center employees felt that the job offered them an opportunity to improve their communication skills which could be a valuable asset for future employment in other industries. Even though there were concerns about the job,
the participants felt that the call center employment was a positive experience for them in terms of training and earnings. (Mitra 2008).

Contrary to the findings of Holman et al. (2002), Deery et al. (2002) found that working as a call handler is associated with higher job related depression and anxiety, lower levels of intrinsic job satisfaction and poor well being. The decrease in the well being of call centre staff has been attributed to factors as high work load, call handlers not able to make full use of their skills, unclear roles and conflicting role demands.

Additionally, increased well being has been reported to lead to a decrease in perceived job stressors and an increase in perceptions regarding the efficacy of personal and organizational coping strategies for stressful situations (Daniel and Guppy, 1997). Satisfaction with work life balance and role overload are related not only to worker's schedules but also to self perception and general feelings of well being (Williams 2008). Some individuals have personality characteristics (e.g. hardiness) that protects such individuals in two ways: it alters perceptions of stress and mobilises effective coping strategies (Kobasa et al. 1996; Judkins and Furlow, 2006) and thus affect their overall quality of life. Social support has been identified as a critical factor in reducing occupational stress and improving well being. (Haines and Hurlbert, 1991). Strong relationships can promote successful coping in potential stressful job environments and family and friends have been identified as source of emotional, informational and tangible support in the process of helping individuals cope with stressful events (Figley, 1997).

Thus, to better understand worker's well-being, it is important to know about aspects of their lives besides work, such as health, social and domestic life.
2.4 Research Gap

Though lot of research is available on the health implications of shift work, but not much literature is available on the impact of shift work on the quality of life of employees/ workers. There is an increasing need to emphasize health-related quality of life (HRQOL) in workplaces (Nasermoaddeli et al 2003, , De Salvo et al 2006, http://www.edc.gov/hrqol/concept.htm 15-03-2011). The World Health Organization (WHO) defines quality of life as the individual’s perception of his/her position in life in the context of the culture and value systems in which he/she lives and in relation to his/her goals, expectations, standards and concerns. It is a broad ranging concept that is influenced, in a complex way, by the person’s physical health, psychological state, social relationships, and the environment (WHOQOL, 1998). There may be specific domains of QOL in which shift workers are particularly affected by their work schedule. However, there are only few investigations dealing with these aspects and much fewer particularly in India. The aim of this research is to examine how shift work affects quality of life of workers with respect to specific domains of workers’ lives. The reason for selecting BPO sector has been given in the rationale for study.