CHAPTER – II

REVIEW OF LITREATURE
CHAPTER–II

REVIEW OF LITERATURE

Review of literature is an important part of the study and this serves as a background for the researcher to have knowledge about covered and uncovered facts in the previous studies. Some studies have direct relevance to the topic and few have indirect bearing on the study. Some of them are reviewed in this chapter which are given below.

Fahmida Khatun et. al (2013), The study is cross-sectional study that was carried out on workers of different tobacco processing factories located in different area of Kushtia district, which is located at the south west region of Bangladesh. Almost 95% of workers in tobacco processing mills are female and the remaining 5% are male. Tobacco processing mills were selected randomly and the survey was conducted on 240 female tobacco workers who do not take tobacco in any form basically. This cross sectional study was conducted to identify prevalence of different disease symptoms, nutritional and socioeconomic status in women workers working in tobacco processing plants. The survey was done on a sample of 240 (Two hundred and forty) female tobacco workers. The study was done by direct participatory observation method. The target persons were interviewed on the basis of prepared questionnaires to trace out the research findings. They were physically observed and their anthropometric measurement was done as well as blood pressure and pulse
reading was also taken. The study showed a significant prevalence of respiratory ailment, acute physical weakness and biting pain in limbs. Percentage analysis has been made in this study. Besides, wheezing, shortness of breath with wheezing, chest pain, cardiac palpitation, lethargy, eye irritation and redness, low blood pressure, underweight, nausea, skin irritation, loss of appetite, insomnia or oversleep, diarrhea and constipation were also found to a considerable percentage. Respiratory symptoms were recorded in 61 % female tobacco workers. 90 % were suffering from acute physical weakness and 65 % from biting pain in limbs particularly in hands and legs. The study showed poor nutritional and socioeconomic status of female tobacco workers. Over half (55%) of them were underweight while 45% were of normal weight. Among the underweight category 40%, 10% and 5% were respectively mild, moderate and severely underweight. Due to poverty they were malnourished along with poor working and living environments making them more prone to suffer from repeated attack of communicable and non-communicable diseases.

Sugumar.D et. al (2013)² said that, Business process outsourcing (BPO) is one of the fastest growing segments of the Information Technology Enabled Services (ITES) industry. BPO is a strategy which promotes in a unique way either by putting-in new technology or applying existing technology to improve a process. India in the recent years has shown huge developments in the areas of communication, power and software developments. Despite this, the industry has typically created more stress among its workers, letting them to face a lot of physical, mental and moral, ethical
related issues. Hence this study made an attempt to study the physical and health
related stress or problems. **Primary objective** To understand the work related stress
across the employees of BPO services in Chennai. **Secondary objectives** 1. To study
physiological stress across BPO service employees in Chennai. To study behaviour
and health related stress across BPO service employees in Chennai. The population
for this study comprises BPO employees working in the TOP ten BPOs in Chennai
during the study period. A total of 310 employees were randomly approached with
200 (71 Male and 129 Females) agreeing to take part in the study, resulting in a
response rate of 64%. The questionnaires were administered in an interview format to
get a high response rate as possible. The statistical package for the social sciences
(SPSS) version 16.0 was used to analyze the data collected. Analysis consisted of the
computation of descriptive statistics in order to examine the different work related
stress experienced by the respondents in the BPO. The one sample test has
represented all the variables used to find out the stress level of the BPO worker. It is
the combination of the variables that is identified as stress. The results of this test
represent that it is significantly correlated (p<0.05) under 2 tailed test. Hence there is
a significant relationship among the variables in the stress. From the value (p< 0.05),
the calculated value is less than the table values of all the variables tested. Therefore,
the research hypothesis is accepted and the null hypothesis is rejected. The difference
between the age of the respondents and their experience in health related stress is
significant. Therefore age is the one of the factors which significantly correlated with
health related stress. It concludes that, the effect of work related stress of the BPOs employees at Chennai in Tamil Nadu State. Results indicate that the respondents in the age group of 26 to 30 years face work related stress, behavioral stress and health related stress; further it would be found that the overall stress level is high among this age group of employees. The respondents in the age range of 31 to 35 years are facing high level of psychological stress. Also, it was found that level of increasing and decreasing stress positively correlated with the age and gender of the respondents. Male respondents had high level of stress than female because of their working time. Female respondents had high level of psychological stress.

Srinivasan et. al (2013), The Beedi and Cigar industry employs thousands of people, most of whom work under conditions that are harmful to their health. They spend hours of blending or rolling tobacco in unhygienic, dingy and overcrowded places having little facilities for drinking water, toilet, washing or even first aid. The working hours are often interminable and at times even child workers are made to slog for long hours in violation of the law. This study aimed at gaining insight into the “Occupational Health Problems Faced by Female Beedi Workers at Khajamalai, Trichy. The research design used for this study is descriptive. The research selected 50 families for the study using a purposive sampling method. Only those female heads of the families who were involved in Beedi work and who were willing to answer the schedule were included for the study. The main objective of the study was to know the working conditions, health status. Most of the respondents 62 percent
had work for less than 20 days. Therefore their earning capacity was also less. Majority 72 percent of the respondents were working for contractors which showed that they were subjected to exploitation. 46 percent of the respondents rolled 31-40 bundles daily. This shows that respondents were involved in very hard work. Majority of 76 percent of the respondents stated that they had health problems. Majority 70 percent of the respondent stated that their health problems were due to their occupation. Majority 76 percent of the respondents expressed that they had a spouse who was alcoholic resulting in ill health of respondents. Through the legislation seeks the Beedi workers, seek to protect their rights legislation and in reality the provision of the Act are not implemented. Therefore, social activists need to take up the cause of Beedi workers and fight for their Rights.

Sangeeta Pandit (2013)⁴, Handloom is the mostly widely established cottage industry of North East India (NE) that is most widespread throughout the region. It employs a large skilled and unskilled workforce and which, in North East, mainly consists of women workers. In the present era of commercialization, handloom sector is also witnessing changes and large number, of women are adopting the weaving activity as their profession. The activity they performed previously during their leisure time has now been transformed to 8 hours job. But, in spite of the increased weaving time spent on loom, the work station design remains unaltered. The paper reports the ergonomic issues related to weaving practices as adopted in NE, at present and tries to analyze them from the design perspective. Subjective assessment, direct
observation, interview with weavers and the managing bodies were used for determining the work related issues prevailing in the present handloom sector. The study identifies four broader problem areas related to seating, treading, flying shuttle and cloth rolling operations where design modifications are required to improve work efficiency with reduced manual efforts. Addressing the issues by looking into the ergonomic aspects in existing workstation will have direct impact on quality as well as quantity of outcome thereby, improving the productivity as well as overall occupational wellness.

Parijat Borgohain (2013), Occupational Health Hazards refer to the potential risks to health and safety of workers in their workplaces. Tea garden workers are susceptible to a number of hazards in their workplaces due to physical, biological, mechanical, chemical and psychosocial factors. The present paper tries to examine the occupational health hazards faced by the tea garden workers of Hajua Tea Estate of Sibsagar District and Marangi Tea Estate of Golaghat District in Assam. Factors such as income, educational levels of the workers, availability of medical facilities in the tea gardens, hygiene and sanitation, general awareness and perception about the different occupational health hazards have been taken into account while arriving at the findings of the study. The study has been conducted mainly with the help of primary data collected with the help of a questionnaire. Altogether 72 workers, both male and female of Hajua Tea Estate and 140 workers of Marangi Tea Estate have been surveyed by Random Sampling Method. In addition, secondary information has
been collected from sources such as books, journals and the Internet. It has been found from the study that the tea garden workers are educationally lagging behind, health facilities are not adequate and safety measures are lacking. This has resulted in a number of work-related accidents and the workers are found to suffer from a number of health problems.

AnuRai et al. (2012), The construction sector has the largest number of unorganized labourers in India next only to the agricultural sector, and women form almost half the workforce as unskilled labourers with no occupational mobility. Often they face serious problems/constraints related to work, viz., lack of continuity, insecurity, wage discrimination, gender and sexual harassment, unhealthy job relationship, lower wages, and poor job satisfaction. Despite these, construction industry overwhelmingly attracts female workers. Poverty being the main cause, the worst affected are the single and the derelict/destitute women with children to support. Their husbands are often drunkards or are found to have other sexual partners and find themselves in debt trap. Unlike the womenfolk, men who come in as small boys, assist the masons for some years as helpers and finally, graduate as masons, some of whom later become contractors and move up the social ladder. More than half of the construction workers in India are women (GOI, 2008a). They are employed in semi-skilled / skilled jobs in other industries but in the construction industry women are employed mostly as unskilled labourer. The present study aims at — identifying the major issues related to workplace culture of women construction
labourers, analyzing the major health and safety issues at construction sites examining the status of these women in social ladder, identifying the role of Government and other NGO’s in providing safety and security to this workforce, and recommending measures for mitigation of the problems. The primary data was obtained by conducting primary survey through questionnaire survey containing both open and close ended questions on “work place culture and their social status” from the several labour market places. After the collection of about fifty representatives’ view, the analysis and interpretation of information has done with the help of various statistical techniques. It is also suggested that at least 20 percents of jobs on government construction sites should be reserved for women, because they are discriminated against and denied work by thekedars. There is inadequate information on the extent to which female construction workers are exposed to various health hazards at the workplace, in particular the health research on female construction workers is desirable.

Rupali V et. al (2012)⁷ Beedi rollers are exposed to unburnt tobacco dust through cutaneous and pharyngeal route. They are not aware of their rights. Studies have been conducted on beedi workers but not many studies are carried out in urban areas. Thus, study was carried out to understand working condition and health hazards in beedi workers residing in the urban slums of Mumbai and to know whether beedi roller are in better condition in urban areas. The main objectives are to study working condition of beedi rollers in the urban slum sans to find out health
hazards. Descriptive, cross-sectional, community based study was carried in the urban slums of Mumbai with population of 8985 from April 2011 to June 2011. With snow balling sampling technique, 52 beedi workers were interviewed regarding their socio-economic status, working conditions and health problems after informed consent. Data entry and statistical analysis were performed using the SPSS windows version 14.0 software. The statistical tools like Mean and Standard Deviation has been used in this study. The mean age was 45 years with SD of 12 years. All were Hindu females. Around 42.31% were illiterate. Mean years of service were 30 years and they work on an average for eight hours. Children were not involved in beedi rolling. Most common morbidity was fatigue. None were aware of the benefits provided for them. Awareness regarding health hazard and safety measures was poor. The working condition of beedi rollers in the urban areas is not favourable.

MomtazJahan (2012)\textsuperscript{8}, The main aim of the study about Bangladesh garments industry has created a breakthrough regarding women’s employment in the industrial sector. A supply of cheap and readily available female labour has contributed to the rapid expansion of the Ready-Made-Garments (RMG) Sector in Bangladesh. The hard labour of the millions of female workers has also contributed in making the garments as the highest export earner of the country. The data was collected with the help of questionnaire in an interview administered to 30 women from 5 factories. Percentage analysis has been made in this study. However, the work environment of the garment industries is not safe, congenial and healthy for the workers, especially
for the female workers. Some of the problems of women workers are related to the human environment of the workplace. The present study concluded that, provision for necessary physical facilities together with the improvement of human environment can be instrumental in developing men and women as equal partners in development of future policy interventions should address the specific problems that women workers face, in order to make RMG industry a more humane and sustainable option for women.

Madhususan (2012), In India there are close to 5 million beedi workers. Beedi rolling mainly leads to two types of occupational diseases, namely musculoskeletal and respiratory problems. Long hours of continuous sitting in an unergonomic posture and an injurious effect of inhaling tobacco fume being causes for them. Although the potential of above diseases exists among beedi workers, little information is available about occupational health hazards among beedi workers. Hence present study was undertaken to assess socio demographic profile and morbidity profile among beedi workers. Objectives: 1. To study the socio-demographic profile of beedi workers. 2. To study the morbidity profile of beedi workers. Methods: A cross sectional study was done among beedi workers in urban field practice area of A.J. Institute of Medical Sciences, from April 2010 to March 2011. The study comprised of 439 beedi workers. A pretested semi structured questionnaire was used to collect data regarding socio demographic profile, personal habits, housing condition, work pattern and morbidity pattern. Peak Expiratory Flow
Rate (PEFR) was done only for those ≥25 years of work duration and/or ≥50 years of age. Spirometry was done in subjects with abnormal PEFR reading. Statistical analysis was performed using SPSS software version 16. Results: The study comprised of 439 study subjects, 431(98.2%) were females and 8(1.8%) were males. 142 (32%) were in the age group 35 to 44 years. 98 (22%) subjects were illiterates. 432 (98.4%) of the study subjects were beedi rollers. 247 (56%) were having a pass book/identity card. 241(55%) were having illness at present out of 439 study subjects. Most common being musculoskeletal symptom in 152 (63%) followed by eye symptoms 137 (57%), respiratory symptoms 53 (22%) and others 82 (34%). On examination pallor was present in 233 (53%) subjects, dental caries in 118 (27%) and tanning of hands in 53 (12%) subjects. PEFR was assessed in 193 study subjects, out of which it was abnormal (<80% expected) in 43 (22.8%) subjects. Four subjects did not meet the set criteria for spirometry, hence were excluded and out of 39 subjects, subjected for spirometry 16 (41.2%) were having restrictive impairment, followed by 13 (33.3%) obstructive, 4 (10.2%) mixed and 6 (15.3%) normal spirometry features. Interpretation & conclusion: 98.2% of the study subjects were female beedi workers. Beedi rolling plays an important role in the household economy, contributing to 14.3% of the household income. Every beedi worker should have a pass book to avail medical benefits. More than 50% of beedi workers suffered from illness, the most common being musculoskeletal, eye and respiratory symptoms.
Work-Related Musculo Skeletal Disorders (WRMSDs) are impairments of the bodily structures, such as muscles, joints, tendons, ligaments, nerves, or the localized blood circulation system, which are caused or aggravated primarily by the performance of work and by the effects of the immediate environment in which work is carried out. Types of work in the cashew factory include cutting, peeling, grading, packing, and boiling. All these activities have risk factors for the musculoskeletal disorders, which include repetition, contact stress, forceful contraction, awkward postures, as well as sustained positions. The objective of this cross-sectional study was to find out the prevalence of musculoskeletal disorders among cashew factory workers. A cross-sectional descriptive study was conducted on 246 cashew factory workers, working in a randomly selected factory of a selected locality in Karkala taluk of Udupi district, Karnataka. Participants’ name, age, gender, literacy level, income, type of work, duration of employment, hours of work per day, hand dominance, pain and discomfort status were obtained by structured interview. A total of 246 cashew factory workers participated in the study. Data were analyzed using SPSS version 14. Descriptive statistics was used to summarize the data. Around 28.5% ($n = 70$) reported pain, whereas 71.5% ($n = 176$) of workers did not report pain. The largest number of workers ($n = 22; 32.4\%$) complained of pain in the knee, followed by back ($n = 21; 30.9\%$) and then shoulder ($n = 8; 11.8\%$). Seventy percent of the workers who reported pain were having more than 5 years of work experience. A 68.6% ($n = 48$) of the workers who reported pain
were in the cutting category, followed by the grading (17%; \( n = 12 \)), boiling (8.6%; \( n = 6 \)), and peeling (5.7%; \( n = 4 \)) categories. Prevalence of pain and discomfort among workers was 28.5%, which is a not ignorable and has to be addressed. Self-reported pain and discomfort were more prevalent in knee, followed by back and then shoulder.

Rena Mehta (2012)\textsuperscript{11}, The main objectives are, to document the working motion of the workers working in garment units. To study the health status of the workers identifying the types of hazards. To identify MSD’s prevailing amongst the workers of the garment manufacturing units. The study analyzed the types and extent of occupational health hazards of the garment workers in cutting, stitching and finishing section. Thirty five garment factories from Jaipur were selected purposively. The sample consisted of 210 workers taking 6 randomly from each garment manufacturing unit. Data were collected through personal interviews with the selected samples. Percentage analysis has been made in this study. It was found that work in the garment factory severely affected worker’s health, as they were restrained in a closed environment. Nature of work in Garment factories created various types of health hazards among the selected respondents such as headache, musculoskeletal pain, eye strain etc. Results of the study showed that workers in the cutting section were more prone to accidents than the ones in stitching and finishing sheds. 55 percent of the respondents from the stitching shed opined that they suffered
from severe musculoskeletal pain, whereas vibration induced syndrome was only faced by the respondents in the cutting shed.

Gowri.B et. al (2012)\textsuperscript{12}, The healthy wellbeing of mankind depends mainly on the consumption of quality food. These days Self Help Groups (SHG) is implementing a large number of village cottage industries, especially food processing industries. The main objectives are, to know the socio–economic background of the selected respondents; To assess the food hygienic practices of the women SHGS; To identify the microbial contamination of the selected food Items prepared by SHGS; To detect the adulterants present in the raw ingredients. By using serial dilution test presence of microbial load such as bacteria, fungi in common street foods. In this regard, 200 SHG women who are involved in food processing trade in Dindigul District, Tamil Nadu were selected for the study. The investigator met the respondents and collected their background information including socioeconomic details, knowledge about food safety practices. Microbial analysis, food adulteration test were done for food samples. Food safety and nutrition education was given to the respondents and the impact was assessed by using interview and observation method. Our investigation reveals that there is an urgency to infuse food safety and disease prevention methods in this sector. Also we recommend training programmes for SHGs to improve the methods of preparation, serving food hygienically and proper packing by giving training through NGOs or by Government itself.
Nirupa Varatharasan (2011)\textsuperscript{13}, Evidence suggests that employment for women can reduce poverty and inequality resulting in improved living standards. The garment industry is an important source of income for Indian women. This thesis tested the effects of garment work as an income source on women’s health-care utilization practices and decision-making in comparison to both agricultural labourers and general women in India. Cross-sectional data collected from India’s National Family Health Survey-3 were used to generate descriptive statistics. Statistical modeling was used to test the effect of garment work on a) barriers to health care services and b) decision-making abilities of Indian women. Results suggest garment workers are younger, more educated, urban, and wealthier, make more cash earnings, and have more access and control over their own money as compared to agricultural labourers. Results indicate female garment workers report facing fewer barriers to accessing health care services. As well, access to cash earnings increases their decision-making abilities.

Sherly Thomas (2011)\textsuperscript{14}, The economic status of women is now accepted as an indicator of a society’s stage of development. Textile industry is the only industry to have employed women workers since long time. Women workers unlike the majority in the informal sector have been exposed to rigorous work, discipline, fixed working hours, specific production norms etc. In Tamil Nadu, the garment industry is female dominated field. There are many health problems to which the women workers in textile industry is exposed to. To examine the health problems of women workers in
the textile unit a study is undertaken. The data was collected with the help of a questionnaire administered to 60 women. Percentage analysis has been made in this study. The study found out that many of them suffered from backache, joint pains, headache and general tiredness. The medical expenses were a big burden for these women. The women do not give much importance to their health. They try to work even when they are sick and weak, just to supplement the family income. The health hazards of the women working in the textile industry are much higher compared to their counterparts in other sectors. It is therefore an urgent need on the part of the policy makers to take effective steps to better the condition of women in textile industry.

Rini Tekriwal (2011), To find out extra auditory effect of noise like headache, vertigo, tinnitus and difficulty in hearing on textile workers of Surat city who were exposed to high level of sound at their workplace and to find out their relationship with duration of exposure to noise. It was also tried to determine any relationship between degree of hearing loss and extra auditory effect of sound. Materials and methods: 50 male Hindu workers of different textile mills of Surat City were examined by audiometry to determine degree of hearing loss and interviewed for subjective feeling of headache, vertigo or tinnitus. Age group of workers was between 20-50 years. Controls were taken from different parts of Surat city. All were male and Hindu by religion, between 20-50 years of age without any of exposure to any kind of noise. Among 50 workers exposed to high level of sound, 30% workers
had complained about tinnitus whereas among controls only 2% had complained about it. When tinnitus was correlated with duration of exposure, it was seen that with duration of exposure to noise >20 years (n=20) 55% workers were suffering from tinnitus, with duration of exposure 10-20 years (n=15) 20% were suffering from tinnitus and with duration<10 years (n=15) 6.66% had complained about it. As far as difficulty in hearing was concerned, among study group 14% had complained of hearing difficulty whereas the figure was 4% among controls. When relationship between degree of hearing loss and subjective feeling of hearing difficulty was calculated, it was found that 7 out of 9 i.e. 77.77% workers suffering from moderate degree of hearing loss had complained about hearing difficulties. No one with normal hearing or mild degree hearing loss had any problem with hearing. 2% workers exposed to noise had complained about headache whereas the no. was 4% among unexposed group. As far as vertigo was concerned, 4% workers among study group were suffering from it whereas it was 2% among control group. No one among study as well as control group had complained about any difficulty in speech. Prevalence of tinnitus was significantly high among exposed group which increases with increase in duration of exposure. Prevalence of difficulty in hearing between study and control group was statistically not significant, but relationship between degree of hearing loss and difficulty in hearing was highly significant. No significant relationship between noise and headache, vertigo or difficulty in speech can be established. From this
study it can be concluded that noise has significant effect on tinnitus and difficulty of hearing is related with degree of hearing loss.

Bertha A(2011), Musculo Skeletal Disorders (MSD) contribute 37% of the disease burden which is attributable to occupational risk factors globally, resulting in substantial disability. Despite mechanization and automation, there is an ever increasing incidence of MSD, which has an adverse impact on the individual and the society. Little information on the prevalence of MSD is available in South India. The present study was aimed primarily to evaluate the prevalence of MSD in industrial workers and also secondarily to identify the location specific MSD, to generate guidelines to optimize the work, to minimize the risk of injury development and to maximize the output quality. This cross sectional pilot study included 219 subjects of age groups ranging from 18 to 55 years, from three different industries. Questionnaires were administered to assess the work exposure and health. The range of movement of the joints was calculated by using a Goniometer. The postural workload was assessed by using a RULA work sheet. A clinical examination was done to diagnose MSD. 32.6% of the subjects suffered from MSD. The highest prevalence of MSD was seen among pyrotechnics (44.4 %), followed by match makers (32.7%) and litho offset printers (19.2%). An increased prevalence of symptom severity was observed in women (36.1%) and in individuals who performed moderately strenuous tasks (52.8%). The present study has estimated the baseline prevalence of MSD in industrial workers, which can be effectively applied for the
optimisation of the work system to minimise the risk of injury and to maximise productivity.

Ling Cui (2011)\textsuperscript{17}, The main Objectives are, to investigate Chronic Obstructive Pulmonary Disease (COPD) mortality among textile workers. A total of 267,400 Chinese female textile employees were monitored for COPD mortality from 1989 to 2000. Textile factories in the cohort were classified into 10 industrial sectors. Age-adjusted mortality, standardized mortality ratios (SMRs) and 95% CIs were calculated by sector. In addition, RRs (HRs) adjusted for smoking and age were calculated for exposure to cotton and silk textile work compared with the other sectors in the cohort. A majority of textile sectors had lower or similar COPD mortality (age-adjusted SMRs\textsuperscript{17} = 0.58 to 1.15) compared with the general female population in the city of Nanjing, China. SMRs for cotton and silk workers were, respectively, 1.02 (95% CI: 0.81 to 1.28) and 2.03 (95% CI: 1.13 to 3.34). Compared with all other textile sectors in the cohort, there was greater COPD mortality among cotton workers (HR\textsuperscript{17} = 1.40, 95% CI: 1.03 to 1.89) and silk workers (HR\textsuperscript{17} = 2.54, 95% CI: 1.47 to 4.39). In the Conclusion Elevated COPD mortality among cottonworkers is consistent with previous reports of adverse respiratory effects of cotton dust. The higher rate of COPD deaths among silk workers was unexpected.

AjeetJaiswal (2011)\textsuperscript{18}, In India the traditional public health concerns likes communicable diseases, malnutrition, poor environmental sanitation and reproductive health care get emphasis and priorities in the health policy.
Occupational diseases reflect health hazards brought on by exposure within the work environment. Due to lack of education, unaware of hazards of their occupations, general backwardness in the sanitation, poor nutrition and climatic proneness of this geographic region to epidemics aggravate their health hazards from work environment. Reduction of respiratory function among textile workers in the textile industry has been observed since the 1970s. A contaminant of raw cotton fiber and cotton dust, has been proposed as an affecting agent that may deteriorate the respiratory function. Present study aimed to find the factors associated with the deterioration of respiratory function among female textile workers. The sample consisted of 243 men above the age of 20 years who had worked for at least 3 years in a textile factory and 235 female non textile workers of same area were studied. All the respondents were interviewed by a pretested questionnaire to gather information regarding the chest symptoms, certain personal characteristics and occupational history. Statistical analyses like Chi-square and odds ratio was done to determine the significant difference between female textile workers and female non textile workers. Univariate analysis of the factors for symptomatic byssinosis showed that dusty worksites, heavy smoking and duration of service years were significant. Logistic regression analysis showed that working in the scouring (odds ratio 11.0), spinning (odds ratio 4.7) and weaving sections (odds ratio 2.6), heavy smoking (odds ratio 12.4) and more than 10 years of service (odds ratio 2.8) were independent significant risk factors. Efforts to reduce dust levels in the working environment and to
discourage smoking among textile workers need to be strengthened to minimize the risk of developing byssinosis.

Chandan Roy(2010)⁹, Sericulture is ideally suited for land and labour abundant economy like India, not only because it is low capital intensive but also because it is female labour intensive. The main objectives are, to portray a brief picture of the state of women workers in sericulture sector and investigate the explanatory factors, among others, behind the female dominance of any sericulture farm. Apart from economic situation of the farms, wage differential across gender, hired-domestic female ratios, there exist several other factors which influence the female dominance criteria. Whether this dominance can be translated into distributive impact, we should need to know the explanatory factors behind these female dominant farms. Dummy variable model and Simple Linear Regression using ordinary OLS technique has been estimated for this study. It concludes that, Women workers intensive sericulture also needs some primary institutional support and initiatives so that sole-women household members can survive. However, there always exists a major gap between policy resolution and policy implementation. Therefore restructuring the process of implementation is also urgently required at a time. Then only the existence of the invisible, unrecognized and unremunerated women workers can be prominent. Drastic change in mind set is also required while implementing equal wage payment and ensuring female dominance in farms. Socio-
economic policies have to be remobilized in such a way so that at all activity level of sericulture, voice of working women can be clearly heard of.

Fernanda Ludmilla et al (2010), This is an exploratory research, with a quantitative approach, developed with the objective of analyzing the work and of life situations that can offer risks to the workers' health involved in the manual and automated cut of the sugar cane. The sample was composed by 39 sugar cane cutters and 16 operators of harvesters. The data collection occurred during the months of July and August of 2006, by the technique of direct observation of work situations and workers' homes and through interviews semi-structured. The interviews were recorded and later transcribed. Data were analyzed according to Social Ecological Theory. It was observed that the workers deal with multiple health risk situations, predominantly to the risks of occurrence of respiratory, musculoskeletal and psychological problems and work-related accidents due to the work activities. The interaction of individual, social and environmental factors can determine the workers' tendency to falling ill.

Senthilkumar et al (2010), The beedi industry occupies a prominent place in rural development in terms of its capacity to offer potential employment opportunities to a large number of people. For the beedi industry Tamil Nadu is one of the major hub in India. It is estimated that around one million workers mostly woman and children are employed in Beedi making. It is an arduous, labour intensive task because each beedi is rolled individually. Beedi industry is almost an
unorganized sector hence even the government officials finding it difficult to enforce the various legal requirements. Apart from the other legal implications, the health hazards which the women employees who are rolling the beedis are enormous. This study aims to explore the health problems faced by the women beedi rollers and to throw some light on the sources of diseases that may result due to exposure to tobacco dust. Dichotomous scaling technique has been incorporated for this study. A total of 388 usable responses obtained from women beedi rollers comprising from the beedi rollers concentrated districts i.e., Tirunelveli, Tuticorin, Tiruchirappalli & Vellore are used for this study. The study found that more than 70% of the beedi rollers suffered from eye, gastrointestinal and nervous problems while more than 50% of the respondents suffered from respiratory problems, mostly throat burning and cough. More than 75% of the respondents faced osteological problems. From the study is it understood that the health hazards level is very high. This study proposes a framework to be implemented with the Government agencies, NGOs and Welfare organizations for the welfare of the beedi rollers.

Shahla Yasmin et al. (2010)\textsuperscript{22}, A beedi is a thin South Asian cigarette made of 0.2–0.3 g of tobacco flake wrapped in a tend (Diospyroxmelanoxylon) leaf and secured with coloured thread at both ends. We studied the health problems of 197 female beedi rollers in Patna, Bihar, India to ascertain the effects of beedi rolling on health. The statistical analysis was conducted using unpaired t-test (2-tailed) and the level of significance was taken as p value $>$ 0.05. The study found that more than 70%
of the beedi rollers suffered from eye, gastrointestinal and nervous problems while more than 50% of the respondents suffered from respiratory problems, mostly throat burning and cough. More than 75% of the respondents faced osteological problems. Total RBC, WBC and platelet counts of the beedi rollers were significantly lower in comparison to the control subjects. Differential leucocyte count showed significantly risen lymphocytes and eosinophils and lowered neutrophils and monocytes in the beedi rollers as compared to the control group. Haemoglobin levels were lower among beedi rollers compared to the control group. The study revealed that women beedi rollers face numerous health problems possibly due to direct inhalation of tobacco flakes and dust. There is a need to impart education to the women beedi rollers regarding the health hazards caused by tobacco and the need to use protective clothing such as gloves, masks etc. Also, there is a need to provide alternative livelihood options from the point of view of economic viability and skills of women.

Surabhi Sing (2010), For more than a decade, farming has been rated as one of the dangerous occupations. A considerable number of adverse health conditions, including musculoskeletal disorders are linked to agricultural work. This paper presents the results of a literature review undertaken to determine the types and extent of musculoskeletal disorders of the farm women in India and to identify opportunities for ergonomic intervention. It was concluded that numerous types of musculoskeletal disorders such as disorders of the back and neck, nerve entrapment syndromes, tenosynovitis, tendonitis, peritendonitis, epicondylitis and non-specific
muscle and forearm tenderness were consequences of the occupational risk factors in agriculture including static positioning, forward bending, heavy lifting and carrying, kneeling and vibration. At the same time, ergonomics interventions have the potential to reduce musculoskeletal disorders among farm women. These may include designing of women friendly tools and equipment, improved work processes and stipulation of shorter rest periods for farm women. There is a need to increase awareness of musculoskeletal disorders and associated risk factors and to train farm women periodically for the proper and safe ways of handling tools and equipment in order to avoid musculoskeletal disorders. The information presented in this paper should result in (1) Prioritization of researches based on prevention of farm women from musculoskeletal disorders, (2) Development of new technologies for women for critical field problems such as hand cutting of plant materials, stooped posture, and lifting and carrying of heavy materials, (3) Funding and support for awareness and prevention programmes for musculoskeletal disorders.

TusharKantiSaha (2010)²⁴, Though India is now considered a major power and is turning into a developed country from a developing country, a large section of its population still belong to the poorest of the poor. In developing countries, great efforts are directed towards the advancement of small-scale industries as these are considered the engine for their economic growth. According to WHO, over 1000 million people worldwide are employed in small-scale industries. The ‘garment’ industry of India is one such industry. It is an unorganized sector, mostly run by
private establishments. It provides employment for both men and women, mainly those from the lower socioeconomic classes. The employees of this industry hardly ever benefit from occupational health-and-safety provisions. The objectives are, to find out the morbidity profile of the workers with special reference to musculoskeletal disorder, to assess the relationship of socio-demographic and occupational factors with the musculoskeletal disorders, to assess the felt needs of these workers. This was a community-based cross-sectional study carried out in a slum area of Kolkata. The study was conducted from September 2008 - November 2008. There are three main areas in the slum where almost all those engaged in the small-scale garment industry reside. One such area was chosen by simple random sampling. A complete enumeration of all workers in the chosen area was done. There were one hundred and twelve such workers who were identified and all of them consented to participate in the study. The subjects were then interviewed using a predesigned, pre-tested, semi-structured questionnaire that had been translated into the local language; the questionnaire collected data on socioeconomic conditions, occupational history, health problems. Stress at work is a growing problem for all workers, especially women. It is concluded that, the variety of morbidities detected among garment workers, especially the high prevalence of musculoskeletal problems, is alarming. It is high time that steps are taken for revising their wages and the other conditions related to their jobs so that they can improve their socioeconomic condition. Counseling for alcohol and tobacco addiction is necessary and they must
be educated regarding the prevention of common diseases and the importance of personal hygiene. Periods of rest in between their long hours of work and seats with adjustable backrests that provide support for the lumbar region would go a long way to reduce postural strain and low back pain. The responsibility for improving the health and safety conditions of garment workers lies with the government and nongovernmental agencies as well as the employers.

Unna Murray (2009), The number of child labourers in the agricultural sector is nearly ten times higher than the number of child labourers in other sectors (e.g. in manufacturing, mining, etc) (ILO, 2006). Yet, there has been less research to understand and, develop and deepen strategies for combating child labour in agriculture and rural employment, when compared to other sectors. It would seem that research and activities focusing on the girl child labourer in agriculture are neglected. However, it is well know why gender equality is important in the general context of combating child labour. Key factors include discrimination faced by girl child labourers; the vulnerability of girls to sexual exploitation; and the fact that girls often face a double burden of economic work and unpaid household chores. Amongst the many actors involved in efforts to eliminate child labour, the argument that child labour concerns should be better integrated into mainstream policy has gained momentum in order to ensure more “joined-up thinking” amongst all involved in efforts to combat child labour. This paper reviews some current thinking on
approaches to mainstream responses to child labour, focusing on agriculture and the rural girl-child.

Samata Patil (2009) Textile industries is one of the informal sectors which has high working population. The women are engaged in weaving, spinning, tailoring, ironing and many more unskilled jobs. Usually women earn very low wages because their payments depend in amount of acceptable pieces produced in a given time. The objectives are, To assess nutrition and health status of the female textile workers, To assess the occupational stress, To study the relationship between nutritional status, health status and occupational stress, To know the impact of selected demographic variables on nutritional status, health status and occupational stress. There are total 300 female workers presently working in these industries. For the research 50 per cent of workers were selected randomly as sample considering following criteria.

1. Age range from 20 years to 60 years
2. More than 5 years of working experience.

Thus 154 respondents were selected as the sample for the present study. For analyzing the relationship between health status nutritional status and occupational stress, Karl Pearson’s correlations coefficient was used in this study. Thus the results of the present study revealed that the selected sample was suffering from occupational stress and health problems (neurosis). But it was noteworthy that the
most of the respondents were having normal nutritional status and nearly one third of them fell in at risk category. Few personal characteristics viz., age, educational level, work experience, distance and so on have influenced nutritional status, health status and occupational stress of the respondents. It can be concluded that there could be few other factors which influence nutritional, health problems and occupational stress.

Elias.M.S et. al (2009)²⁷, The main aim of this study was to know about the effect of environmental pollution on subjective and mental health of the workers in tobacco industries has been investigated. A total of 540 workers, 340 from tobacco (polluted) industries (210 Males and 130 Females) and the remaining 200 from non-tobacco industries, (120 Males and 80 Females) were selected using simple random sampling technique. Workers included in the sample were interviewed with three measuring instruments: (a) The Inventory of Subjective Health, (b) The General Health Questionnaire and (c) The Interview Schedule on Personal and Health Related Questionnaire. Two way ANOVA techniques for mental health and subjective health has been used in this study. The results showed that the workers of tobacco industries suffered more from Subjective health and mental health related problems than those of the non-tobacco industries. The male workers were found to have better subjective and mental health than their female counterparts. The causes of difference between the male and female workers’ conditions may be explained in the way that the female workers have to work under a lot of pressure. Most of them got early
married, had a number of Environmental pollution and health problems of children, lacked nutritious food, insufficient health care facilities and belonged to hand to mouth socioeconomic conditions. Most of them were divorced, separated or abandoned. As a result, they all had ill health and were suffering from many diseases. That is why they had to survive with poor subjective and mental health conditions than their male colleagues. The present study concluded that, Male workers were found to have better subjective and mental health compared to the female workers, and the unmarried workers had better mental health than the married workers. Moreover, unhygienic home environment, malnutrition, lack of health care facilities, use of raw materials, anxiety, tension and job dissatisfaction were some of the health risk factors as perceived by majority respondents of tobacco industries than that of the non-tobacco industries.

Manjunatha.R et. al (2008)\textsuperscript{28}, The study of illnesses causing absence of workers from work in industries is a practical method to study the health status of industrial workers and to identify occupational health hazards. The iron and steel industries are particularly hazardous places of work. Published data from India on health status of iron and steel workers is limited, therefore this study was undertaken to investigate the sickness absenteeism, morbidity and workplace injuries among this population. Workers were selected using stratified random sampling. Stratification was done between men and women to have an equal representation in the sample. A structured pre-tested interview schedule was used to collect the data. A p value of <
0.05 was considered for statistical significance. From a total of 2525 workers, 353 (mean age 55.1 yrs, male 69.4%) participated in the study. The overall proportion of sickness absenteeism was 66.9% (95% CI: 0.62 – 0.71). Overall 16.4 days were lost per worker per year (male = 16.5 & female = 16.2) due to sickness absence. A blue collar worker lost 21.5 days compared to 11.9 days by a white collar worker (p > 0.01). Among workers, health ailments related to the musculoskeletal system (31.4%), gastrointestinal system (25.8%), hypertension (24.4%), respiratory system (18.1%) and other minor ailments (19.3%) were found to be high. It concludes that, Sickness absenteeism is significantly higher among iron and steel workers when compared to other occupations in India. Blue collar workers and shift workers loose higher number of days due to sickness absence, and they face problems related to musculoskeletal system, gastrointestinal system and hypertension in higher proportions compared to their counterparts. Women experienced hypertension as the common health problem and higher proportions of injuries outside the work environment.

Bhuyar.P et. al (2008)²⁹, BPO (Business Process Outsourcing) has been the latest mantra in India today. For many employed in the call center sector, "the daily experience is of repetitive, intensive and stressful work, which frequently results in employee "burnout". Call centers are established to create an environment in which work can be standardized to create relatively uniform and repetitious activities so as to achieve economies of scale and consistent quality of customer service. This
weakens employee autonomy and enhances the potential for management control. Loss of control is generally understood to be an important indicator of work related stress. Besides, the stress, the working hours of call centers may cause sleep disturbances and disturbances in biological rhythm. Physical health also may adversely affect because of irregular and sedentary working hours and unhealthy lifestyles. Job pressure at call centers also may adversely affect social health. Call centre workers in BPO face unique occupational hazards - mental, physical and psychosocial. A sample 100 call centre workers of both sexes and from two cities Pune and Mumbai were surveyed by both qualitative and quantitative methods for the above health problems. Percentage analysis has been made in this study. A high proportion of workers faced sleep disturbances and associated mental stress and anxiety. Sleep disturbance and anxiety was significantly more in international call centers compared to domestic. There was also disturbance in circadian rhythms due to night shift. Physical problems such as musculoskeletal disorders, obesity, eye, and hearing problems were also present. Psychosocial problems included disruption in family life, use of tobacco and alcohol, and faulty eating habits. Better personal management, health education and more research is indicated to study the health problems in this emerging occupation.

Nishchith (2007), Shrimp processing is a labour intensive activity with a large export potential. As a result, seafood-processing plants have provided employment, and the majority of those employed are women. However, the multiple
roles of women in this sector have always been underestimated and overlooked. The present investigation was undertaken to gain insights into many aspects related to the role, status, and contribution of women working in sea food processing units. A survey was undertaken to understand the socio economic status, migration, income mobility, and expenditure pattern of women employed in fish processing factories and to assess their contribution to the economy of the industry. The investigation also evaluated the economics of production of the processing industries for different scales of operation. The survey indicated that women dominate the industry with a male to female ratio of 3:10. The majority of the women employed were in the age range 21-30 years, educated, and come primarily from Kerala. Fifty percent of the income earned by the women was kept as savings. Women were provided with hostel facilities, travel allowances, bonuses, opportunities to work overtime and annual salary increases of about 15%. It was noticed that the capacity utilization and the technical efficiency of the surveyed plants were moderate. The long hours of work, constant exposure to cold water and chlorine resulted in muscle cramps, skin irritation, eczema, and respiratory illnesses. Lengthy isolation from their families caused many of the women to become depressed. The study showed that women were overworked and underpaid, and that there existed a conspicuous disparity in favour of men between the wages and benefits paid to men as compared to those paid to women working in the industry. The women employed in the processing plants experienced certain job-related health ailments. However, the payment received by
these women is not in proportion to their efforts and these women in fisheries are always at the mercy of the contractors. In most factories, payment to these women was made through the contractors. However, it is important to note here that the processing units were providing some basic benefits such as leave opportunities, subsidised food, travel allowances, short term loans, medical benefits, etc. The study revealed that while the processing units are contributing substantially to the employment of women the extent to which they are contributing to their empowerment, and hence the emancipation of women, is debatable.

Buyite (2007)\textsuperscript{31}, The construction industry has a poor safety record. It has a high accident rate. Building construction is a high–risk industry. The accident rate is very high when compared to other industries. Population engaged in construction activity comprises 1.5% of total world population. Most construction workers are not well educated. Their friends and relatives recruit them to work on sites. Subcontractors employed worker’s physical ability and skill to carryout works; they have not provided safety training to the workers in the construction sites. This means that workers lack safety awareness and conscious on the job–related safety and health issues. The frequent change of site environment and poor equipment supplied making them difficulty for compliance of safety standards. The accidents that occur are due to management and workers who lack safety awareness, cut corners to work and perform unsafe behavior at work. In fact most construction workers lack proper education, they have not received proper safety training and trade skill training in the
construction field. The aim of this study is to assess knowledge of construction
labourers on occupational hazards and to identify the utilisation of safety measures
by the construction labourers.

Metgud.D.C (2007)\textsuperscript{32}, The main objectives are, To identify musculo-skeletal
problems among women workers in spinning section of woolen textile industry, To
identify the risk group pertaining to respiratory disorders, To study the volumetric
lung functions of the workers with the risk of respiratory disorders, To offer
suggestions based on ergonomic approach to improve upon work performance.
Cross-sectional observational type of survey was conducted in spinning section of
small scale labor-intensive woolen textile factory. In this study out of 350 workers in
the spinning sections, 100 females in the age ranging between 30 to 45 years were
randomly selected by convenient sampling from volunteers after taking consent from
them. Percentage analysis and probability has been made in this study. Contrary to
expectation, there was no significant change in respiratory function. However, the
musculo-skeletal problems were found to be abundantly present with pain in 91% of
the subjects. In the conclusion, pain and fatigue were found to be the main problems
for women in the spinning section of the small-scale industry under this study.
Women have to take up dual responsibility of a full-time job as well as the domestic
work. It was considered that ergonomic factors such as provision of a backrest and
frequent rest periods could remediate the musculo-skeletal symptoms.
Parimalam et al (2006), The main objectives is the work environment in a majority of these units is unsafe and unhealthy. The study was conducted in 18 Garment manufacturing units located in Madurai city. A total of 216 workers from these 18 garment manufacturing units formed the study sample. Percentage analysis has been made in this study. The work environment in the garment manufacturing units is unhealthy an unsafe for the workers, resulting in several health problems. Analysis of Garment manufacturing units using a combination of techniques revealed that the congested work area, improper ventilation, dust, unergonomic work stations, excessive noise and non-use of personal protective equipment were the major constraints faced by the workers in these units. Based on the study, interventions to improve the work environment, safety aspects and work methods have been suggested which could be adopted on a wider scale.

Jannet J V, et. al (2006), The main objective is to study the Pulmonary functions of women laborers employed in ginning factory located in Tirupur, a textile-based city in Coimbatore district of Tamil Nadu, India. Ginning factories discharge large amounts of cotton dust, which leads to decreased pulmonary function in the exposed subjects. An attempt was made to study the pulmonary functions of women laborers employed in ginning factory located in Tirupur, a textile based city in Coimbatore district of Tamil Nadu, India. The women were subjected to spirometric analysis and chest X-ray examinations. Occupational lung disorders that included byssinosis, chronic bronchitis and occupational asthma were studied in
these women by assessing their pulmonary function tests, clinical symptoms, age and
duration of exposure to cotton dust. Standard normal distribution, Chi-square analysis
and multiple correlation analysis were the statistical methods applied in this study.
Significant occupational acute and chronic pulmonary changes were observed in
these women. Both age and duration of exposure together had a significant impact on
their pulmonary function as per the results of the multiple correlation statistical
analysis. There was a significant distribution of women with pulmonary impairment
in all the sections of the ginning factory. Some recommendations were also suggested
for controlling the occupational lung diseases caused by cotton dust.

Medhi.G.K (2006)\textsuperscript{35}, The Objective is to compare morbidity, disability
Activities of Daily Living – Instrumental Activities of Daily Living (ADL-IADL
disability) along with behavioral and biological correlates of diseases and disability
of two elderly population groups (tea garden workers and urban dwellers) living in
same geographical location. Two hundred and ninety three and 230 elderly from
urban setting and tea garden respectively aged > 60 years were included in the study.
Subjects were physically examined and activity of daily living instrumental activity
of daily living (ADL-IADL) was assessed. Diagnosis of diseases was made on the
basis of clinical evaluation, diagnosis and/or treatment of diseases done earlier
elsewhere, available investigation reports, and electrocardiography. Hypertension
was defined according to JNC-VI classification. BMI (weight/height\(^2\)) was
calculated. Logistic regression analysis was performed to see the impact of important
background characteristics on Non-Communicable Diseases (NCD) and disability. Hypertension (urban - 68% and tea garden - 81.4%), musculoskeletal diseases (urban - 62.5% and teagarden - 67.5%), COPD and other respiratory problems (urban - 30.4% and tea garden - 32.2%), cataract (urban 40.3% and tea garden - 33%), gastro-intestinal problems (urban - 13% and tea garden - 6.5%) were more commonly observed health problems among community dwellings elderly across both the groups. However in contrast to urban group, serious NCDs like Ischaemic Heart Disease (IHD), diabetes were yet to emerge as health problems among tea garden dwellers. Infectious morbidities, under nutrition and disability (ADL-IADL disability) were more pronounced among tea garden dwellers. Utilization of health service by tea garden elderly was very low in comparison to the urban elderly. Both tea garden men and women had very high rates of risk factors like use of non-smoked tobacco and consumption of alcohol. On the other hand, smoking and obesity was more common in urban group. Most morbidities and disabilities were associated with identifiable risk factors, such as obesity, tobacco (smoked and non-smoked) and alcohol consumption. Educational status was also found to be an important determinant of diseases and disability of elderly population. Age showed a J-shaped relationship with disability and morbidity. Sex difference in health status was also detected. This study highlights the physical dimension of health problems of elderly individuals. Social circumstances and health risk behaviors play important role in the variation of health and functional status between the two groups. Life-style
modification is warranted to prevent onset of chronic diseases. To improve quality of life, rectification of poor health status through affordable health service for disease screening and better management of illness, nutritional improvement and greater health awareness are necessary particularly among low socio-economic group. Low-cost intervention like cataract surgery could make a difference in the quality of life of elderly Indian.

Medhi. G.K (2006)\textsuperscript{36}, Assam is the highest tea producer State in the country. There is scarcity of reliable information on health and nutritional status among tea garden population of Assam to enable initiating public health response to their health needs. The main aim is to describe health problems and nutritional status among tea garden population of Assam. Community-based cross-sectional survey in eight randomly selected tea gardens of Dibrugarh district of Assam. Socio-demographic and behavioral characteristics of participants were recorded. Health problems and nutritional status were assessed through medical examination, evaluation of medical records, anthropometry and laboratory investigations Percentage prevalence; Chi-square test was applied wherever applicable. Out of 4,016 participants, 1,863 were male and 2,153 were female. They were mostly illiterate, and nearly 52.9% (1,197 of 2,264) of adults were manual workers in the garden. Alcohol and oral tobacco use were common. Prevalence of underweight among children was 59.9% (357 of 596), and thinness among adults was 69.9% (1,213 of 1,735). Anemia was widespread. Worm infection (65.4%, 217 of 332); skin problems; respiratory infections, including
tuberculosis; filariasis were present in a significant way. Children suffered more in various diseases. Major non-communicable diseases like hypertension, stroke were emerging in the community and were associated with modifiable risk factors like alcohol and tobacco use. Finally it concludes that, Health status of the population can be ameliorated through better hygienic practices, environmental sanitation, creating health awareness, nutritional intervention and overall improvement of socioeconomic conditions of the population.

Melvin Chagus Silva (2005)37, This study aimed to describe the prevalence and associations of hazardous drinking in a male industrial worker population in India. A total of 984 subjects from a randomly selected sample of 1013 workers from four industries in Goa, India, were recruited. Interviews included the 10-item Alcohol Use Disorders Identification Test (AUDIT) as an indicator of hazardous drinking and the 12-item General Health Questionnaire (GHQ12) as a measure of Common Mental Disorders (CMDs). The prevalence of hazardous drinking, defined as an AUDIT score of more than 8 was 21%. There was a significant association with CMD (OR 2, \( P = 0.003 \)). Hazardous drinking was significantly associated with severe health problems, such as head injuries and hospitalization, whereas CMD was found to be a confounder in its association with adverse economic outcomes. Hazardous drinking is common among male industrial workers in Goa. Interventions in the workplace must target both drinking problems and CMDs, since they often co-exist and are associated with different types of adverse outcomes.
Hasalkar S et al (2004), Indian agriculture is a labour intensive industry, and the majority of the population is dependent on agriculture. Rural women in India are the major labour force in agriculture. They perform almost all agricultural activities, from sowing up to harvesting and post-harvest activities. Under the All India Coordinated Research Project on Ergonomics of Farmwomen’s Drudgery, research was conducted to assess the drudgery of farm women and to evolve tools/techniques to increase the efficiency of the women. Thirty healthy women of 25–35 years of age, performing agricultural activities regularly, were selected for the study. Heart rate, energy expenditure, and the perceived exertion by the farm women were the parameters used to evaluate the drudgery of selected farm activities experienced by the farm women with existing and improved tools and techniques. The results revealed that the physiological cost of work for farm women while weeding with an improved weeding tool was reduced (by 0.84 beats/min) compared with weeding with the traditional tool (‘saralkurpi’). The top dressing of fertiliser activity showed 2.07 beats/min reduction while working with the improved fertiliser trolley compared with the existing method. The incidence of musculoskeletal problems was reduced and the grip strength was improved with the use of improved tool/techniques. The work output increased significantly while performing the weeding activity with the improved tool, the saralkurpi. Farm women expressed significantly lowered perceived exertion while performing the selected farm activities with the improved tool/technique compared with the use of traditional tools. In
today’s agricultural situation, women are in need of such improved agricultural tools, which can reduce the circulatory stress and physiological cost of work and increase their efficiency and work output. Only this can help women to be released from the drudgery and become the primary partners in agricultural development.

Radi.S et. al (2004)\textsuperscript{39}, To examine the relationship between organisational constraints at work (psychological demand, decision latitude, and social support at work), depressive symptoms, and cardiovascular risk factors (obesity, smoking, alcohol consumption, and sedentary behaviours). OEM abstracts 5 of 10. The study was conducted among 426 men and 183 women selected from a cohort study designed to examine the relationship between behaviours and incident hypertension. Twenty volunteer occupational physicians included 203 cases on their 739 incident hypertensive subjects and matched each case for age (\(\pm 10\) years) and sex with two controls. In men, low decision latitude was related to high alcohol consumption (odds ratio (OR) 2.75; 95% confidence interval (CI) 1.36 to 5.59). In women, low social support at work was associated with obesity (OR 15.65; 95% CI 4.28 to 57.20). In both genders, low social support at work was significantly related to depressive symptoms (OR 2.34; 95% CI 1.08 to 5.05 in men, and 9.31; 95% CI 2.08 to 41.74 in women). Men who reported depressive symptoms were less likely to be obese (0.2% v 9.2%; \(p = 0.0001\)) and more likely to have sedentary behaviours (72.7% v 56.0%; \(p = 0.03\)) than those who did not report depressive symptoms. It concludes that, our results support the hypothesis that the link between organisational working
conditions and behaviours on the one hand and depression on the other hand might explain the relationship with cardiovascular disease. These occupational factors may have different effects in men and in women.

Habibullah et.al (2004), India being a developing nation is faced with traditional public health problems like communicable diseases, malnutrition, poor environmental sanitation and inadequate medical care. However, globalization and rapid industrial growth in the last few years has resulted in emergence of occupational health related issues. Agriculture (cultivators i.e. land owners+ agriculture labourers) is the main occupation in India giving employment to about 58% of the people. The major occupational diseases/morbidity of concern in India are silicosis, musculo-skeletal injuries, coal workers’ pneumoconiosis, chronic obstructive lung diseases, asbestosis, byssinosis, pesticide poisoning and noise induced hearing loss. There are many agencies like National Institute of Occupational Health, Industrial Toxicology Research Centre, Central Labour Institute, etc. are working on researchable issues like Asbestos and asbestos related diseases, Pesticide poisoning, Silica related diseases other than silicosis and Musculoskeletal disorders. Still much more is to be done for improving the occupational health research. The measures such as creation of advanced research facilities, human resources development, creation of environmental and occupational health cells and development of database and information system should be taken.
Mining is an ancient occupation, long recognized as being arduous and liable to injury and disease. The lifecycle of mining consists of exploration, mine development, mine operation, decommissioning and land rehabilitation. The objective is to study about the physical, chemical, biological, ergonomic and psychosocial occupational health hazards of mining and associated metallurgical processes. Mining remains an important industrial sector in many parts of the world and although substantial progress has been made in the control of occupational health hazards, there remains room for further risk reduction. This applies particularly to traumatic injury hazards, ergonomic hazards and noise. Vigilance is also required to ensure exposures to coal dust and crystalline silica remain effectively controlled. There is a tendency to outsource non-core functions, including occupational medicine. Epidemiological studies are needed to understand the relationship between genetic markers and the risks of diseases.

The Bangladesh garment industry is the largest employer of women in the formal manufacturing sector. The owners have been described, alternatively, as risk-taking entrepreneurs of a modernizing economy and as oppressors of women in exploitative sweatshops. This article analyzes the literature to explore the social, political, and economic contexts of this class and how women’s earnings affect household gender dynamics within a framework of exit and voice. It draws on interviews of these garment factory workers to explore how work has different meanings for workers of different classes and how these perceptions
influence gender roles and practices within the household. The conditions of the 1971 war, in fact, created the proto-capitalists, and the post-1975 economic policies of the military regime enabled them to become capitalists. The work has different meanings for women of different classes and these perceptions influence gender roles and practices within the household. Women from various class backgrounds are employed because they can be molded into compliant workers. The multi-class character of the workforce combined with the threat of layoffs prevents solidarity and makes unionization difficult. Some single women feel empowered by their earnings. Most married women are unable to leverage their income into greater decision making power. But the income is essential for household welfare, and women need these jobs. Policy recommendations involve national and international actors; they emphasize crèches (day care centers), savings, and severance pay at the garment factory level as well as the institution of global living wages and working standards by the International Labour Organization.

Sinwal.S (2004)\(^3\), India is mainly an agricultural country, having farming as one of the largest occupations. Occupational health in agriculture is a new concept. Agriculture consistently ranks among the industries with highest work related injuries and deaths. To develop a scale to assess occupational health hazard among farm women, as they make up 46% of the total agricultural workforce. The scale was developed and standardised using the Likert Summated rating method. Data was collected from 50 subjects to assess hazard proneness. For the scale, approximately
90 statements were excluded and 74 retained. The final list of 40 statements was made after expert evaluation. In item analysis, t values of each statement were calculated and statements with highest t value were selected. After collection and analysis of data it was concluded that most of the respondents (74%) fell into the category of high hazard incidence and no respondent was reported as having a low incidence of hazard proneness. Such high scores indicate that working conditions of women farmers in India are alarming. The hazards faced by them in agriculture calls for the immediate attention of planners and policy makers.

Purusottam Nayak et al. (2003)\textsuperscript{44}, There are three pillars of sustainable development such as ‘Environmental Protection’, ‘Social Equity’ and ‘Economic Well-being’ (Hemmati and Gardiner, 2002). Environmental protection requires a solid understanding of women's relationship to environmental resources, as well as their rights and roles in resource planning and management. It also requires acknowledgement and incorporation of women's knowledge of environmental matters, and an understanding of the gender specific impacts of environmental degradation and misuse. The present paper is an attempt to investigate gender issues in the mining sector in India with a view to understand how these issues impact on Sustainable Development imperatives in the mining industry as part of broader study of the Mining and Minerals for Sustainable Development initiative. Majority of the health problems in mining regions are caused due to unchecked pollution and high levels of toxicity, mine tailings and mine disasters. The health and safety problems
vary from one mineral to the other, from the technology used, type of mining-opencast to underground - and the size of operations. Because of the male dominated nature of the industry, in trying to better understand the gender issues at play, the study focuses not only on women’s experiences but also analyses how they are utterly neglected within the industry. It considers how mining industry contributes to sustainable development by promoting women’s economic advancement and reducing women’s poverty, by ensuring greater involvement of women in the mining sector.

Morris Brown (2002)⁴⁵, Using data from the 1960 and 1970 Swedish censuses and the Swedish Cancer Register for 1971 to 1989, this study investigated variations in cancer risk by gender associated with employment in painting trades and paint manufacturing. Among men, standardized incidence ratios were significantly increased for lung cancer among painters and lacquerers; bladder cancer among artists; and pancreas cancer, lung cancer, and nonlymphocytic leukemia among paint and varnish plant workers. Risks for women were elevated for cancers of the esophagus, larynx, and oral cavity among lacquerers and for oral cancer among glazers. These findings are consistent with the report of the International Agency for Research on Cancer that classified painting as an occupationally related cause of cancer and provide further evidence that the risk of certain cancers is increased by exposures in the paint manufacturing process.
At present in India more than thirty mines are in operation. It produces 2800 tonnes of asbestos per month (mainly chrysotile and tremolite) and in recent years substantial quantity (70%) is imported from Canada. The quality of asbestos produced in India is very poor. This paper reviews health effects (such as fibrosis, sequelae, bronchogenic cancer, and malignant mesothelioma) on the Indian mine workers caused due to asbestos mining related activities with respect to their present day condition. The mining and milling and other related processes expose the people to cancer and related diseases. Women are more affected by their exposure in processing unit compared to male who are generally working in mines. Direct and indirect employment in asbestos related industry and mine is around 100,000 workers. Latency period (length of the time between exposure and the onset of diseases) in India is estimated to be 20–37 yr. The causes for lung and breathing problem are mainly due to obsolete technology and direct contact with the asbestos products without proper precaution, because in India asbestos are sold without statutory warning. It concludes that, though lower fiber level has been found in all the mine sites, the health degradation among people is more due their exposure to processing units. So a further suitable strict control measure has to be adapted for importing asbestos and processing them in the milling units. Enormous studies shows the extensive epidemiological and toxicological studies which have confirmed the respiratory morbidity due to asbestos exposure which is related to dose and duration of exposure, the processes of work. So it is the
right time for the developing countries to keep this menace under control before it boomerang.

Millie Nihila (1999), The poor visibility of women's work (waged and non-waged) is well known and by now fairly well documented. Despite the problems and biases associated with the collection of data by the national level data collecting agencies, namely, the Census and the National Sample Survey, the work participation rate for women workers has been increasing both at the all-India and regional levels, in this case in Tamil Nadu. The objectives are given in two sections. In Section I we give a brief overview of the employment of men and women using secondary sources. Section II is based on our field study; it not only unravels the faulty process of data recorded by official agencies, but goes beyond to show how this 'officially sanctioned' faulty process has become a weapon or tool in the hands of employers and trade unions to 'legitimately' subordinate women workers. Percentage analysis has been made in this study. We began with an analysis of the picture presented by macro-level data on the nature of women's work. That data revealed an increasing trend over time in terms of numbers of women employed particularly in the secondary sector. However, it also simultaneously revealed the fact that much of the increase has been in the categories of 'self-employed' and 'casual temporary'. There has also been an official type about increasing employment having been generated in the post-reform period (that is, after 1991). Whatever data we have been able to collect show that the quality of the employment generated has deteriorated. Our
micro level study based on an analysis of data collected in the leather tanning industry has revealed how gender's subordination is built into the system such that merely tinkering with the Factories Act or labour related social welfare legislation will in no way change the macro picture of abysmal quality employment. Fundamental changes at the micro level are needed.

Pratima Pauil-Majumder (1996), This paper has analysed the impact of women's wage employment on their health. The analysis in the paper shows that the female workers employed in the garment industry of Bangladesh had to pay a high price in terms of ill health to acquire a socio-economic status in the society with their wage employment. A large number of female workers suffered from various illnesses after starting work in the garment industry in spite of the fact that due to wage employment they could afford to buy better food and better accommodation which have a positive impact on health. This is mainly due to overwork, incongenial working conditions and above all because of wide-ranging labour law violations. A bivariate analysis and a multivariate regression analysis of the determinants of workers' health status shows that gender is a significant variable in this context. The result of the regression analysis further shows that work hour exerts the largest negative influence on the relative probability of having good health. Grave concerns have also been expressed in this paper about the negative impact of garment work on female workers' mental health. Finally, the paper suggests that the introduction of a two shift working system, the implementation of labour laws regarding employing a
qualified medical practitioner and installing fire fighting equipment and the introduction of health insurance and health education programmes would ease the health problems of the female garment workers.

Millie Nihila (1993), Leather industry is one of the major export earning industries of India. It is the fourth largest item, contributing 7 to 8 per cent of the total exports, and, perhaps, it ranks first from the angle of net foreign exchange earnings. In Tamil Nadu leather industry plays a pivotal role. Tamil Nadu exports 55 per cent of total leather exported from India while 70 per cent of hides and skins produced in the country are tanned and finished in Tamil Nadu industry. We would like to point out from our queries that women are not provided water-proof footwear, leg coverings, and/or aprons and gloves. Women workers while getting into the pits cover their legs with tyre tubes; instead of aprons they use plastic sheets to cover their waist. The gloves, if provided, were not provided to each worker individually. Since they are all common property that is not maintained properly. Hence if a particular worker who has been affected by anthrax uses these gloves and leaves it without washing it thoroughly, another worker who uses it next, is likely to be infected by the anthrax bacteria. When the workers cover up their legs with tyre, the chemical solution get into the tubes and reacts with the skins and results in skin disease like dermatitis. Leather tanning industry is hazardous not only to workers, but people living close to tanneries also experience certain specific health problems. Besides, there are environmental hazards created by this industry. In this paper we
have confined our analysis to the impact of tanneries on the health of the workers only.

Vidyamal et al (1993)\textsuperscript{50}, Tea is the principal plantation crop in Sri Lanka and the largest foreign exchange earner for the country; it accounts for 10 percent of the cultivated acreage and employs 6 percent of the total Sri Lankan work force. The main objective is to study about the sociopolitical factors that impact upon a woman's ability to control her own income. The field survey covered 22 large plantations in the Nuwara Eliya district, which has the greatest concentration of tea plantation workers in Sri Lanka. The plantations that were included in the sample were managed by two Government Corporations-the Janatha Estate Development Board (JEDB) and the Sri Lanka State Plantation Corporation (SLSPC). The main populations ample comprised 420 female and 40 male unskilled tea plantation workers. The field survey consisted of administering an open-ended questionnaire. In addition, all health workers and senior managers of the 22 plantations were asked to complete two separate questionnaires. Data were gathered on the following categories: (1) income levels (female/male workers), (2) control of incomes within the households, (3) work schedules (females/males), (4) household demographics, (5) food habits and intra-household food allocation patterns, (6) health status and health delivery system, and (7) management structures. The high incidence of reported anemia among the women workers has obviously prompted the management to distribute iron pills to them. During our field survey we noted that all female tea
pluckers in the plantations we visited were given iron tablets when they reported for work every morning. It concludes that: Their success is largely attributable to the fact that such ventures have given the women their own space to gain self-safety measure confidence in the management of their own affairs, a lesson that needs to be seriously heeded in order to prevent the use of women workers as an exploitable resource.

**RESEARCH GAP**

Many of the above mention study have dealt with different types of industrial women workers and their health hazard in work environment such as beedi women workers, textile women workers, tobacco women workers, cement factory women workers, paper industry women workers, food processing industry women workers, tannery industry women workers etc has been analysed. Regarding the fireworks factory study, general safety measures and welfare measures has been explicit in the women status in the above mentioned studies. But the ramifications of women health status in respect of fireworks factories have not been done by them. This research fills this gap and undertake the present study of these aspects.


Buyite, Satischandra, “Assessment of knowledge on occupational hazards and utilization of safety measures among construction labourers at selected construction
sites of Mangalore”, Dissertation submitted to Rajiv Gandhi University of Health Sciences, Karnataka, Bangalore, 2007, pp-1-55.


Purusottam Nayak and S. K. Mishra, “Gender And Sustainable Development In Mining Sector In India”, pp-1-12.


