Unrecognised Hazards

Despite the strength of the female work force in India and their vital contribution to the national economy, women continue to be exploited and marginalised. More often than not they are not even recognised as workers, and, as a consequence, the health hazards related to their work also remain unrecognised. Even researchers and policy makers have not paid adequate attention to these women workers. Whenever health problems related to women's work are discussed, they either evoke scant interest or are dismissed as "inevitable aches and pains of poverty".

The major constraint, therefore, in attempting to focus on the occupational health hazards related to women is the question of acceptance of the hazards. Not only is the existing health system not prepared or oriented to tackle work-related problems of poor women, but progressive occupational health specialists also argue that work place health and safety concerns should not be divided into specific male- female components, because emphasizing the differences can strengthen the hands of the employers who would then exclude 'susceptible' workers from the job rather than make the workplace safer for all.

Another constraint in this sphere is that the existing protective legislations also do not reinforce any specific occupational health protections for women in the unorganised sector. The newly amended Factories Act, the Workers' Compensation Act, the Maternity Benefit Act and other similar legislations are only for the benefit of women in the organised, formal sector. Except for the Bidi and Cigar Act, women working in the informal sector are excluded from any legislation that takes cognisance of their occupational health problems.

In places where limited health facilities exist for this group of workers, mainly as a result of demands from unions or social welfare organisations, they are far from adequate. For example, dispensaries set up for bidi workers from funds collected as per the regulations of the Bidi and Cigar Act continue to function merely as treatment centres and do not propagate any preventive measures.

With the advent of increased mechanisation the problem becomes more acute. More and more women are being pushed out from the organised sector into the unorganised sector, particularly in the area of unskilled manual labour. As a result, an increasing number of women are being exposed to the unrecognised hazards in this sector and if the present climate of apathy continues, then the problem will grow to massive proportions.

The irony of the situation is the fact that even if the women workers become aware of the hazards of the unorganised sector, they have no choice but to opt for work in this sector. In their own struggle for survival, economically, the dilemma of the ensuing health hazards gets pushed into the background, resulting in a culture of silence and inability to protest. The choice for most of them is not between safe working conditions and hazardous working conditions, but between employment under any conditions and no employment at all. How long can this go on? Is there a way out?

One of the main hurdles in improving the situation is the absence of in-depth study and understanding of work-related health hazards faced by women. Very little documentation exists on health hazards faced by women workers in the country. A strategy for improving work place health and safety for women workers must start with such documentation and wider awareness-raising in the country.
Occupational Health Hazards of Women

According to many progressive occupational health specialists, workplace health and safety concerns should not be addressed as having a specific women's component. They have good reason for this argument. To emphasize the differences between men and women workers, we should strengthen the hand of employers who would rather stop employing women than make the workplace safe for all.

However, while men and women do have identical health concerns there are significant differences that need to be recognized, primarily for three reasons: one, because women are more sensitive to certain workplace hazards because of their physiological differences; two, because there are many sectors which predominantly employ women and preventive measures need to be taken in this sphere, to avoid major calamities and three, because traditionally women are more susceptible due to low resistance as a result of malnutrition, frequent child births, pressures of domestic chores and cooking in poorly ventilated kitchens etc.

Identifying Hazards

What are the working conditions which create hazards at the workplace? Given below is a simple categorisation of the possible hazards.

1. Stress

Stress is probably the most underestimated hazard of women's work today, and may be the most serious one. Stress can show up in many ways. Chronic stress may result in high blood pressure, heart disease or peptic ulcers. It may aggravate existing problems such as allergies or asthma. Reactions to stress may include headaches, problems with digestion, diarrhoea or nausea. Or emotional distress patterns with symptoms such as insomnia, fatigue, loss of appetite or depression.

Because stress is frequently accompanied by mental or emotional reactions, workers who suffer from it are often judged to be "inherently weak", over-emotional or mentally unbalanced. Since popular stereotypes already assign these roles to women, when stress-related illnesses strike, they are doubly prone to be ignored or overlooked.

2. Ergonomics

Another set of occupational health hazards, to which little serious attention is paid is the field of ergonomics which is the biological interaction of tools, equipment and machinery with the bodies of workers. Most work processes, workplaces and equipment are designed with relatively little thought given to the demands they make on our bodies.

In most of the work that women do, like hand rolling, stitching, knitting, food processing or assembly line work,

Health Hazards in Agriculture and Industry

Agriculture:

About 25 million women are engaged in agricultural occupations. They are mainly employed as agricultural labourers. Most of them are living below the poverty line, and get lower wages and there are no welfare laws.

The main health hazards can be classified as:

(i) Accidents: Insect and snake bites as well as accidents due to agricultural tools and machines.
(ii) Toxic hazards: Poisoning are due to exposure to fertilizers, pesticides and insecticides.
(iii) Physical hazards: Repetitive heavy manual work, postural problems, hazardous work environment.
(iv) Respiratory diseases: Exposure to dusts of grains, rice, coconut fibres, tea, tobacco, cotton, hay and wool are common.

Non-agricultural Occupations:

About 2 million women are engaged in these occupations. The spectrum ranges from self-employed petty traders to daily wage labourers. Most of the health hazards stem from the unorganised nature of their jobs. The specific hazards depend on the job.

(i) Tanning and Leather Manufacture: Workers are exposed to chemical hazards, infection and accidents.
(ii) Coir Industry: Hazards of accidents, skin infections, and exposure to sulphur dioxide fumes are commonly encountered.
(iii) Cashewnut Industry: The roasting of kernels produces acid fumes, the oil causes allergy and dermatitis.
(iv) Soap Industry: Fats and caustic soda are boiled and allowed to react. Burner scalds, chemical burns, occupational allergy and problems of ventilation and high temperature are the main hazards.
(v) Cotton Pickers and Fod openers: Mainly women are employed. They have to work in the open at high temperatures and continuous opening of the pods causes bleeding fingers.
(vi) Tea Pickers: Pesticide hazards and insect and snake bites are predominant. Occupational asthma due to tea dust and irritation of the bronchi have been noted also.

Source: Occupational & Environmental Health Problems of Indian Women, State of the Art, Department of Science and Technology, Government of India, 1984.
demand the use of one particular set of muscles over and over again, while other parts of the body are very restricted in their movement and make extremely unhealthy and uncomfortable demands on the person. Repeated bending, pushing and pulling, places unnatural wear and tear on the muscles and joints and can contribute to arthritis.

Women working on construction sites or in carpentry etc. where hand-tools are required, face problems in handling the tools. Part of the reason is that these are traditionally male jobs and the tools are made only with man in mind. As a result, the grips are too large, the balance is wrong for a smaller hand, or the trigger is too far away. Women’s inability to handle these tools properly has had nothing to do with strength or ability.

Even in more time-honoured women’s work such as garment making, women may be at a disadvantage working with scissors made for male tailors, with inappropriately sized grips and finger grooves. The strain on hand and wrist, particularly when cutting through several layers of fabric, or combined with a high working surface, may be unbearable painful.

Movement is essential for the healthy function of the body. Unless it occurs, the heart has little help in circulating blood and as a result, swollen ankles and varicose veins result from work that requires sitting or standing in one place for most of the day. Although many women might be aware of this fact, but because of the imperative need in terms of survival to complete a fixed target, particularly in piece rate work, they push themselves and their bodies and do not stop for breaks.

3. Reproductive Hazards

Chemicals at the work place environment affecting the female reproductive system are listed in the table below. Various toxic substances like common insecticides cross the placental barrier and affect the unborn baby, causing malformation. Similarly, toxic residues are also passed through mother’s milk to the baby while breast feeding. Lead, for example, apart from causing anaemia, colic and nephropathy also causes premature delivery, abortion, sterility, infant mortality and mental retardation. Legally, in India, the concern about the reproductive hazards which women face are restricted only to the advanced stages of pregnancy, in the organised sector. But preventive measures are not taken into account. It would be worthwhile to work out a system wherein during pregnancy and early child development, women workers are transferred to jobs in the same establishment where there would be less physical and chemical hazards.

In the unorganised sector, especially in agricultural and construction work, women also are engaged in physically strenuous jobs, besides being exposed to cement, pesticides etc. and sometimes, pregnant women undergo spontaneous abortions or even give birth to babies at the workplace.

4. Physical Hazards

Physical hazards at the workplace are those which arise from exposure to different kinds of energies heat, cold, noises, vibrations, light, radiation etc. These factors affect the organs which are sensitive to each particular hazard; like noise damages the hearing capacity, vibrations from a hand-held tool can cause numbers in the hand etc.

### Examples of environmental agents that affect reproduction in the female

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Known effects on conceptus or reproductive function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metals</td>
<td></td>
</tr>
<tr>
<td>Lead</td>
<td>Abortion, mental deficiencies</td>
</tr>
<tr>
<td>Mercury</td>
<td>Abortion, menstrual disorders, birth defects</td>
</tr>
<tr>
<td>Cadmium</td>
<td>Retarded foetal growth</td>
</tr>
<tr>
<td>Selenium</td>
<td>Abortion</td>
</tr>
<tr>
<td>Pesticides, herbicides, organic solvents etc.</td>
<td>Abortion, birth defects, stillbirth</td>
</tr>
<tr>
<td>Organophosphorus biophenyls</td>
<td>Retarded growth, natural depression</td>
</tr>
<tr>
<td>Pesticides</td>
<td>Birth defects, malformations, ovarian dysfunction, abortion</td>
</tr>
<tr>
<td>Herbicides (2, 4-D &amp; 1, 3, 5-T)</td>
<td>Stillbirth, birth defects, menopausal dysfunction, anemias</td>
</tr>
<tr>
<td>Benzene, toluene</td>
<td></td>
</tr>
<tr>
<td>Gases</td>
<td></td>
</tr>
<tr>
<td>Carbon monoxide</td>
<td>Fetal death, brain damage</td>
</tr>
<tr>
<td>Ozone</td>
<td>Abortion, birth defects</td>
</tr>
<tr>
<td>Anaesthetics</td>
<td>Infertility, birth defects</td>
</tr>
<tr>
<td>Radiation</td>
<td></td>
</tr>
<tr>
<td>X-ray, gamma ray</td>
<td>Mutations, microencephaly, mental deficiencies</td>
</tr>
<tr>
<td>Drugs and hormones</td>
<td>Birth defects</td>
</tr>
<tr>
<td>Thalidomide</td>
<td>Vaginal adenocarcinoma in offspring</td>
</tr>
<tr>
<td>Diethylstilbestrol</td>
<td>Neural deficiencies, growth retardation</td>
</tr>
<tr>
<td>Alcohol</td>
<td></td>
</tr>
</tbody>
</table>

Sources: Bucher (RL) and Page (RD). Introductory Remarks: Environmental and Endogenous Hazards to the Female Reproductive System. Environmental Health Perspectives: 30; 1981; 3527.
A coalition of 40 trade unions and community groups in the USA has formed a nation-wide effort to force semiconductor chip manufacturers to remove hazardous chemicals from their workplaces after a study, conducted by the University of Massachusetts. The study showed a 39 percent increase in cancer rate among women in the "clean room" where gases and strong nitric acid and sulfuric acids are used to dissolve the circuit image on silicon chips. In addition, women who worked on the photolithography area with exposure to various solvents, including glycol ethers which are known to harm the reproductive system, had a miscarriage rate of 29 percent. These rates can be compared to 18 percent in the study's control group working in microchip production and national average of 20 percent. The final result of the study are expected to be published in November of this year.

The U.S. labour and community group coalition has called for the following action by the semiconductor industry:

- Removal of substances known or suspected of causing reproductive damage and substituting safer chemicals;
- Use of engineering control to prevent worker exposure;
- Offer of transfer to another job for prospective parents, both male and female as a temporary measure until engineering controls are installed;
- Financing of independent wide studies to assess health effects of workers exposed;
- Integration of occupational and environmental health and safety concepts into research in product and process design.

An epidemiological study of workers at the Rare Earths Division of the Indian Rare Earths Limited, Alwaye in Kerala, examined the mortality profiles of workers for the last 15 years. Taking control groups from the workers outside of this unit, the study demonstrates a significant difference in the incidence of cancer and mortality due to heart diseases and other causes between Indian Rare Earths (IRE) workers and the control population. The incidence of sterility among the IRE workers and the genetic disorders among their children also appear to be high (Ref: Economic and Political Weekly, March 8-15, 1986).

A new agreement to protect workers and the public from the danger of asbestos was launched in the UK in February this year. The agreement lays down strict standards for removing the deadly material from public and private buildings. It calls for: (1) Training for employees in the dangers of asbestos, use of respiratory equipment and protective clothing, working methods and decontamination units; and healthcare and safety issues; (2) Medical examination every 2 years at the employer's expense for all workers involved in asbestos removal; (3) Employers to keep proper records of staff training; (4) Guidance to employers on staff observation of licensing and health and safety legislation; (5) Working practices that will ensure safe removal of asbestos; and (6) Issuing of asbestos certificate to all workers involved in asbestos removal.

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In 1983 the National Institute of Occupational Health (NIOSH) and SEWA conducted a study of the Occupational Health Problem of 178 Beedi workers in Ahmadabad, all of whom are women. Medical examination of the women revealed the occurrence of the following symptoms:

**Occurrence of Symptoms among Beedi Rolling Women**

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Percentages of Women Workers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backache</td>
<td>68.0%</td>
</tr>
<tr>
<td>Headache</td>
<td>39.6%</td>
</tr>
<tr>
<td>Pain in Neck</td>
<td>26.0%</td>
</tr>
<tr>
<td>Burning of Eyes</td>
<td>17.0%</td>
</tr>
<tr>
<td>Pain in Chest</td>
<td>8.0%</td>
</tr>
<tr>
<td>Giddiness</td>
<td>22.0%</td>
</tr>
<tr>
<td>Loss of Appetite</td>
<td>3.0%</td>
</tr>
<tr>
<td>Nasusa</td>
<td>10.0%</td>
</tr>
<tr>
<td>Pain in Hand and Leg</td>
<td>18.0%</td>
</tr>
</tbody>
</table>

The medical report reveals high levels of nicotine and cotinine in the urine of the women workers. However, this level is less than that experienced by tobacco workers. Nicotine gets absorbed through the skin while handling tobacco in rolling beedles. Perhaps, it is possible that nicotine absorption has a negative effect on women's reproductive health. While more research is needed in this regard the initial indications are disturbing.

**Reproductive Health of Women Workers**

<table>
<thead>
<tr>
<th>Problems</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Abortion</td>
<td>19%</td>
</tr>
<tr>
<td>2. Irregular Menstruation</td>
<td>13%</td>
</tr>
<tr>
<td>3. Scanty Flow</td>
<td>12%</td>
</tr>
<tr>
<td>4. Premature Delivery</td>
<td>7%</td>
</tr>
<tr>
<td>5. Dead Full Term Delivery</td>
<td>34%</td>
</tr>
<tr>
<td>6. Sterility</td>
<td>19%</td>
</tr>
<tr>
<td>7. Menopause</td>
<td>19%</td>
</tr>
</tbody>
</table>
Fifteen persons were hospitalised when they inhaled chlorine gas which leaked from a private factory in Raja Paleyam in Tamil Nadu's Kamarajar district. The factory using liquefied chlorine gas was producing bleaching water to bleach bandage cloth, when the mishap occurred.

Workers exposed to Dimethyl Formamide (DMF) are suffering from hepatis— a chemical induced liver disease. The outbreak occurred in Connecticut, U.S.A., factory where fabrics are coated with a polyurethane polymer. Of 45 employees who agreed to liver screening tests after a colleague was taken ill, 30 were found to have suffered liver damage, 11 cases of which were serious.

More than 100 workers exposed to methylene chloride at levels below the US Occupational Safety and Health Administration's exposure limit (500 PPM-8 hour time weighted average) have developed nervous system disorders and other severe health problems, according to data reported to the Environmental Protection Agency.

Twenty five people were affected when a tanker carrying ammonia overturned when hit by a bus on the Satara-Deola Road near Nasik. The tanker was carrying the gas from Sakharwadi to Udaipur. The passengers and the villagers nearby complained of pain in the chest, stomach and eyes.

There is a high pesticide level in the blood of Malaysians, reveals a University Pertanian Malaysia study. For the Cyclo-diene group of pesticides the average Malaysian has 14 times more residues in his blood than the average American. The average Malaysian has about five times more DDT in his blood than the average American. For other pesticides, the average Malaysian has even higher residues. He has about 40 times more BHC, some 14 times more dieldrin, and 114 times more Heptachlor Epoxide in his blood compared with average Americans. Such residue level is much higher among padi farmers and rubber estate workers.

As many as 74 people including 58 children were admitted to the hospital following a gas leak from a chemical unit in the Bhosari industrial area in Pune. The mishap occurred around noon when oleum gas leaked affecting about 420 residents of the area.
Occupational Health Problems of Tobacco Workers

In tobacco plantation and processing industry in India, majority of the workers are women. They work long hours and their difficult working conditions are made worse by health problems related to their occupation. For several years now, it has been observed that women handling both cured and uncured tobacco leaves suffer from specific health problems commonly known as ‘green symptoms’. The green symptoms generally are manifested in the following ways: (1) Neurological headache, giddiness, nausea and vomiting, (2) Respiratory cough with or without expectoration and breathlessness; (3) Gastrointestinal indigestion, diarrhoea and constipation.

An NIOH study (Annual Report NIOH, 1977 p. 43) states that 250 of 290 workers studied, or about 86%, reported “green symptoms”. These workers were all engaged in the cultivation and harvesting of tobacco. The study established that workers engaged in the cultivation and harvesting of tobacco suffer from one or more of these symptoms at any given time. Further, the complaints or symptoms are related to the particular stage of tobacco processing in which the workers are involved. For example, nausea and vomiting were common in workers involved in the tobacco curing process, while headache and giddiness were prevalent in those who operated tobacco plants or plucked green tobacco leaves.

The workers in the tobacco processing factories also face similar problems, reports another study conducted by NIOH (Annual Report, NIOH, 1980). The study notes, however, that such symptoms occur only after heavy dust exposure or during hot summer days.

It further observes that in most cases, the symptoms subsided without the use of any medication and the labourers could continue work the next day. Thus, the symptoms were mild and did not incapacitate the workers from their routine work.

Experiences of working among the women workers in tobacco field and processing shows that the workers suffer from such symptoms chronically. Many do not use any medication because they do not have the means to purchase it or because earlier experience showed that when used, medication did not alleviate their problems effectively and permanently. It has been found that workers are aware of the long term health problems caused by tobacco, but unemployment and under employment together with their low skills force them to continue working.

Apart from “green symptoms”, various physiological abnormalities have also been detected among the workers involved in the tobacco industry. X-ray observations of workers handling the tobacco leaves (Annual Report NIOH, 1977) showed that there is more prevalence of emphysema among persons exposed to tobacco leaves. The respiratory function tests also show a significant reduction of breathing capacity which is technically known as vital capacity (V.C.) and Forced Vital Expiratory Volume (FEV). It is also found that there is a greater reduction of lung function among exposed workers who experience “green symptoms”. All the above studies noted that among women tobacco workers all lung functional parameters show a downward trend (Annual Report NIOH, 1978, p.40). The study noted that women seem to have greater reduction in lung function because they are associated with the processing of tobacco and thus inhale more tobacco dust. Male workers are less affected because they are mainly involved in manual load carrying operations.

The NIOH studies also mention that workers in both the growing and processing of tobacco seem to be exposed to higher rates of nicotine and continue (a major metabolite of tobacco). The NIOH studies also show that workers involved in tobacco growing show high eosinophilia (white blood cells). It is perhaps due to pollen grains, fungal spores and tobacco dust. Some cases of hypertension are also observed among workers in tobacco cultivation but none among the tobacco processing workers.

The NIOH studies have revealed the nature of work related problems in the tobacco industry. All the studies are prospective i.e. conducted at a given point in time. There is a need for longitudinal studies (between certain time intervals) on workers’ health to determine the long-term effects of such exposure. It is possible that problems that appear minor or almost non-existent may become more serious overtime.

Review by Mitali Chatterjee, SEWA, Vithorra Garden, Ahmedabad.

For details of the study report, contact National Institute of Occupational Health, Meghani Nagar, Ahmedabad.
Consolidated List

Consolidated List of Products whose consumption and/or sale have been banned, withdrawn, severely restricted or not approved by Governments. Second Issue.

A United Nations Publication—Sales No. E.87 IV.1

Studies on Occupational Health Problems Among Tobacco Workers in India


The study ascertain the incidence of green symptoms among tobacco workers handling cured and uncured tobacco leaves. The frequency of symptoms found in the study is very high.


Symptoms including vomiting, giddiness, headache etc. are found among the workers. Taking various tests the study concludes that symptoms in tobacco processing workers might possibly result from nicotine toxicity.

Health Hazards of Nuclear Cycle

An article, emphasised the little known fact of the ghastly hazards of nuclear radiation. The article emphasises the effects of radiation, especially low levels of radiations.


Contact Radical Journal of Health, C/o 19, June Blossom Society, 60A, Pal Road, Bandra (West) Bombay 400 050, India.

Stress and Strain: A Workers Guide to Job Design

This booklet contains information on job designs to prevent wrist disorders, back injuries, muscle fatigue and a variety of aches, strains and sprains. It provides some principles to design job tools to prevent occupational hazards caused due to faulty design.

Contact: International Union UAW Purchase and Supply Department, 8000 E. Jefferson, Detroit, Michigan 48211.

Safety in Construction Industry

A book based on the proceedings of a National Seminar on Safety in the construction industry, organised by the Central Labour Institute. The papers in this book provide statistics on accidents in the construction industry. It also provides some information on means to be adopted for controlling accidents in the construction industry.

Contact: Central Labour Institute, Bombay 400 022.

Occupational and Environmental Health Problems of Indian Women: State-of-the-Art

A booklet prepared by the Department of Science and Technology presents information on Occupation Health Problems faced by Women in female intensive occupations.

Contact: Department of Science & Technology, Government of India, New Delhi.

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45, Sainik Farm
Khanpur
New Delhi - 110062

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