

# **WOMEN and OCCUPATIONAL HEALTH**

**Issues and policy paper prepared for the  
GLOBAL COMMISSION ON WOMEN'S HEALTH**

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## SUMMARY

Identifying issues and problems in the occupational health of women remains a challenge. Much of women's work remains unrecognised, uncounted and unpaid: work in the home, in agriculture, food production and the marketing of home-made products, for example. Within the paid labour force, women are disproportionately concentrated in the informal sector, beyond the scope of industrial regulations, trade unions, insurance or even data collection. Women may undertake paid work at home, or combine part or full time paid work with household work and the care of children, the sick and the elderly. They are likely to move in and out of the paid labour force during different life stages; within the paid labour force they may have a variety of different occupations in succession.

Women's occupations are thus fluid and multi-dimensional. The first problem is to learn what those activities really involve in different situations and cultures: a simple occupational category is seldom sufficient as a basis for establishing specific health risk. Agricultural workers may dig and hoe and apply fertilisers and pesticides, but not all the workers will perform all of those tasks and where the tasks are segregated by gender the health implications for men and women may be very different.

The tasks which men and women undertake vary from culture to culture, and at different times in different places. While most cultures assign particular tasks to women, and in some women's roles are more regulated and their economic activities restricted, there are in general very few activities which can universally be described as women's work. Occupational health risks are seldom confined to one sex alone. The risks are only likely to be fully understood, and confronted, in the context of a gender specific analysis of occupational health.

Research into women's and men's occupational health also requires a recognition of the extent of intra-sex variations and careful controls for biological and social characteristics which may affect health outcomes. Poor nutrition, for example, may be a more important factor in some types of occupational health impairment than simply being female.

The effects of potential occupational hazards on women's reproductive health have been, probably, the major focus of concern in the health of women workers. This concern has increased in recent years as more environmental hazards are identified and as more women enter the paid workforce. A range of occupational reproductive hazards has been documented but a large number of possible risks still require further examination.

Legislation to protect pregnant - or potentially pregnant workers has been a universal response. However, where such legislation ignores potential reproductive hazards to male workers it is not only scientifically unsound but fails to protect men while depriving women of an income.

Some countries cannot enforce their protective legislation because of the realities of economic pressures. If other policies such as training criteria exclude women from learning to minimise the hazards they in fact face, women may paradoxically be at greater risk than if there had been no attempt to protect them.

For millions of women today, as in the past, sex work is an occupation: often the only one available to them. While the occupational health of sex workers varies with the meanings, customs and context of sex work in their local environment, the degree of control they can exercise over their lives is the crucial determinant of their health status. Risks especially of violence and of sexually transmitted diseases, but also of infections and contagious conditions - are mediated not merely through customers but those who manage or orchestrate the circumstances of sex workers: brothel owners, pimps and police amongst them. Repressive legislation may drive the women away from health agencies and health interventions.

Only when there is a fuller recognition of what work women actually do and in what circumstances, will it be possible to examine their health profiles in the context of occupation. How much of the reported high level of respiratory disease among women in many developing countries is related to cooking practices, for instance? Where morbidity data are available, they may offer clues to potential occupational health hazards among women. However, in most third world countries mortality statistics alone offer an indirect and fragmentary indication of health status.

The limitations of mortality as an indicator of occupational health risk are well known. There may be considerable time gaps between exposure to the risk and any outcome in terms of disease and ultimately death. Early manifestations of illhealth may lead to a change of occupation. In the case of women, who move in and out of different occupations and the paid work force, the difficulty of identifying a causal relationship between occupation and health impairment is compounded. Longitudinal studies and record linkages are required for an improved understanding of any potentially fatal occupational health risks which women experience.

The effects on health of women's multiple roles are still poorly understood. Longitudinal studies could be valuable here too in disentangling the impact of different roles and responsibilities at different stages of the life-cycle. If much of the current literature on women and paid work, especially that concerned with mental health, is ambiguous or contradictory, it frequently reflects inadequate research design and an unjustifiable level of generalisation about women's lives.

Not all women undertake paid work, but few can escape household labour. What that labour involves varies with income, class and culture as well as across societies, but it is not immune from hazards. Because the home is such a basic feature of everybody's life the routine risks of homeworking are easily overlooked. They can be found, nevertheless, in such things as chemicals used for cleaning or the fuels for cooking. They can also be found in the isolation of many wives, especially those who have married into an unknown family or whose husbands leave home to find work. And they can be found in the domestic violence perpetrated by husbands or other family members - which many women face as they go about their daily tasks.

Those women whose husbands work away from home have been, additionally, at risk of introduced diseases especially sexually transmitted diseases. When women themselves migrate, it is often to badly-paid work in exploitative conditions; international migration may bring problems of isolation and stress, as well as difficulty in accessing health information in a new language.

Household labour also frequently involves caring for other family members: children, the sick and the elderly. Even where men share the caring function, it is usually the woman who is the primary carer, and she may suffer additional health risks. These may be physical (for instance, musculo-skeletal problems caused by lifting) or involve extreme tiredness, stress or depression. Women predominate, too, as paid carers healthworkers of different types - and encounter many of the same problems in that role.

## RECOMMENDATIONS

1. Issues of women's occupational health should be examined within the context of gender-specific analyses of occupational health.
2. Such gender-specific analyses should identify the specific occupational health risks of particular industries, occupations and tasks not only for the individual worker but for other family members.
3. Women's work in the informal sector, in agriculture and in the home has to be conceptualised and measured if the specific occupational health risks of women are to be addressed.
4. The use of methodologies such as time-use surveys and record-linkage in longitudinal studies to identify and assess occupational health risks should be extended.
5. Legislation addressing women's occupational health needs should be reassessed to ensure that it neither discriminates against women nor overlooks potential occupational health risks among men.
6. International agreement about the classification of reproductive hazards (such as chemicals) and on the precautions needed to protect both men and women from those hazards, should be developed.
7. The need for a greater priority in addressing the occupational health needs of both men and women requires commitment and close collaboration on the part of the various international agencies concerned, such as WHO and ILO.
8. Interdisciplinary research with a strong social science component is essential for the understanding of gender related issues in occupational health. WHO and its appropriate collaborating centres should take the lead in identification and coordination of such research.

## **PREFACE**

Pat Giles  
Chair, Global Commission on Women's Health

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The Global Commission on Women's Health was established as one element of a wide ranging resolution, WHA 45.25 which addressed the responsibility of all aspects of the work of the World Health Organisation to women's health, and which stressed adherence to a life span approach to women's health.

With membership drawn from political and professional backgrounds, independent of governments, and broadly representative in a geographical sense, the Commission commenced meeting in April 1974, its objective to accelerate action at the national and international level to improve women's health as their fundamental human right. Terms of reference include producing an agenda for action on women's health, and consulting and advocating the promotion of women's health with all levels of government and non-government organisations.

With the benefit of preparatory work by WHO Regional bodies, the Global Commission produced an agenda for action, focusing on the predominant factors leading to morbidity and mortality in women of all ages around the world, and concentrating on those areas considered capable of yielding the most significant progress: nutrition, reproductive health, the health consequences of violence, ageing, life-style related conditions, and the work environment.

Among these priorities some such as nutrition and reproductive health have been thoroughly researched and remedial action could readily be advocated. Others have suffered a dearth of attention on a global scale and an imperative of the Commission was to rectify this situation.

The effect on women's health of the working environment is a glaring example in this category. Over recent decades useful studies have been undertaken in western societies, but the extremely harsh conditions in which the majority of the world's women work, and the consequent harm to their health and that of their families has hardly been broached. Needless to say, protective measures are non-existent in many parts of the world.

It was to encourage governments, the scientific community and industrial organisations to redress significant gaps in public knowledge and policy-making that this publication was designed. As an impetus to the wide range of study needed, it seeks to identify problems related to the social and health aspects of women's work, emphasising the necessity for a gender based approach and the indivisibility of the health effects of work inside and outside of the home.

On behalf of the Commission I extend sincere admiration and gratitude to Penny Kane and Professor Lorraine Dennerstein of the Office for Gender and Health for producing this valuable report within a minimum frame of time and resources.

It should be read with the understanding that it is intended as a first step on a long, complex process to which we hope to attract, urgently, much more detailed examination and inquiry for the sake of the millions of women whose health is daily compromised by the conditions in which they work.

## INTRODUCTION

### WOMEN AND WORK IN A CHANGING ENVIRONMENT

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Much of women's work has traditionally been carried out within the context of the family: growing food on a family plot; finding fuel, gathering water and preparing foods for family members; spinning, weaving and sewing the garments worn by that family; cooking and washing for the family and looking after its children and its sick and elderly members.

This remains the occupational environment in which many women - particularly rural women in developing countries - work today. Surprisingly little is known about the health hazards of this environment, in part because women's household work has been under-recorded and undervalued and hence there has been little incentive to examine it in detail.

As women move beyond their traditional occupations, they meet new health hazards which may either replace or add to their existing occupational exposure. Women's labour force participation rates have increased steadily, and not only in the industrialised countries. The dramatic economic successes of the newly industrialised states of Asia, for example, are substantially a reflection of increasing feminisation of labour in this region. In these economies, female workforce participation rates increased far more rapidly than male from the 1960s, although their jobs were largely less-skilled and poorly paid. Women workers formed the largest pool of workers in export-oriented light industries, such as electronics and textiles, which underpinned economic expansion (Lin Lean Lim 1993).

As the chapters on occupational mortality and morbidity show, women are reported to be at much lower risk of occupational injuries and accidents than men. Indeed, this is probably one of the reasons for the neglect of women's occupational health issues: immediate deaths or disabilities from identified occupational accidents are more urgent triggers towards intervention than the insidious progress of respiratory conditions brought on by pollution from household cooking.

Data which do exist are frequently presented in an aggregated form which masks many of the differences between men's and women's health profiles (Kane, 1991) and may entirely hide some of the genuine occupational health risks which women face. However, once the aggregate statistics are unravelled, specific risks of injury to women do become apparent.

From a survey of handicapped persons in Malawi 1983, it is possible to extract some disabling conditions which are likely to have arisen from accident or injury, rather than from other causes.

Table 1.1

Amongst those who have endured amputations - other than those resulting from leprosy - burns and scalds, men, as

would be expected, have a much greater total accident burden. However, more women than men have lost toes from one foot, and more women than men have been scalded sufficiently badly to be classified as disabled; almost as many women as men, too, have been badly burned. Digging and hoeing the fields, together with cooking, are clearly high risk occupations for women in Malawi.

Elsewhere too, the hazards in work situations which were previously assumed to be safe, such as school and hospital laboratories and the automated office, are now being identified. As a result, 'there is no real evidence to suggest that, as a general rule, women work in safer environments than men' (Cox and Cox, 1988).

The assumption that women's participation in the labour force was marginal to the economy, and that women worked just for 'pin money' - to collect savings for marriage, or have a little pocket money of their own - is clearly no longer tenable. It was an assumption which carried the corollary that women were only in the labour force for short periods, and were therefore not much exposed to any occupational hazards which those workplaces might present. In fact, however, women are also remaining in the labour force for longer periods, and returning to it after the birth of their children.

Increasing life expectation, which for many women means additional years of widowhood, together with work-related male migration, divorce and in some countries the increased tendency towards single parenthood, mean that the proportion of households headed by women is rising. The proportion is reported to vary from less than five per cent in Kuwait to more than 40 per cent in Botswana and Barbados ( UN 1995). While reported headship itself is a matter of cultural and subjective interpretation, it does suggest that substantial numbers of women are taking a leading economic as well as social role in households.

From the 1980s, recession and structural adjustment policies have created particular difficulties for women in some countries. These policies, for example, generally involve the promotion of cash crop farming at the expense of subsistence farming, which often results in worsening diets for women and children. The expansion of rural industries - such as sugar-cane in Belize (Karl, 1995) may bring paid employment to men, but leave the women struggling to farm alone, with deleterious consequences for nutrition and health. Modernisation and restructuring of economies often takes away jobs traditionally done by women, such as food processing or sewing (Kemp 1993). Male mobility often means women are left alone to face a triple burden of supporting children while managing the home, paid employment and subsistence food production.

Structural adjustment of national economies is generally accompanied by declines in public expenditure, which affect women in two respects. Firstly, reduction in budgets for education and

public health threaten literacy rates and health status for women and children, especially girl children. Secondly, declines in public sector employment have meant job-shedding in sectors with high female employment, which has resulted in women moving increasingly into the informal labour sector, particularly in tourism, services and subcontracting for

manufacturing and textiles. Unemployment has also contributed to increasing levels of internal and external migration. In some countries women constitute the largest pool of migrant job-seekers (Morrow, 1995).

Poverty and unemployment have led many women to work in the sex industry, where they face the risk of contracting HIV and STDs. Thus in Bangladesh, for instance, periodic fluctuations in the garment import quotas allocated by the United States and the European Community, among others, have led to corresponding cycles of lay-offs and re-employment among the women workers concerned. Major increases in organised urban prostitution indicate one avenue of survival for these women (Adnan, 1993). Similarly, in South Korea, an exodus of manufacturers forced more women into the growing 'entertainment' industry. Enticed by even cheaper labour, the manufacturers had moved abroad (Enloe, 1995). Industries such as footwear, clothing and electronics are relatively mobile and respond quickly either to demands for improved pay and conditions in the existing location, or to new offers from elsewhere. Such enticements frequently include a tax-free period and immunity from local labour laws and unions.

The transition from salaried, regularised employment to self-employment or out-work has had several deleterious impacts on women's health. Longer working hours, a central feature of informal sector employment, have created serious difficulties in terms of child care, maintenance of breastfeeding, care of selves and other family members and exhaustion and stress (UNICEF 1994). Amongst the countries of Eastern and Central Europe, too, the excessive burden of work in the daily lives of women has been exacerbated by the severity of the economic crisis caused by restructuring (WHO, 1994).

Informal sector employment, including that of migrant workers, is generally excluded from protective legislation, leaving women vulnerable to workplace hazards, such as industrial toxins, inhaled particles, excessive noise, musculo-skeletal strain, and physical and sexual abuse.

### **National responses to issues in women's occupational health**

From the nineteenth century, when the conditions of work for women and children began to be viewed with concern, legislation or other forms of restriction to protect women in the workplace became increasingly common. Such legislation frequently excluded them from particular industries or occupations, either because these were seen as too physically

demanding, or because the work might threaten the outcome of a woman's pregnancy. Legislation was also used to forbid night-work to women, or to otherwise restrict the circumstances in which they could work.

Although occupational health measures along these lines have been enacted throughout most of the world, implementing them has proved to be a greater problem. Thus, in 1988 the government of Vietnam drew up a list of heavy labour or harmful jobs expressly forbidden to women, but many women continue to work in such

occupations from necessity. Even within state enterprises, the introduction of competitive market economy practices has reduced or eliminated many of the protective health provisions (Morrow, 1995). In the Newly Independent States of the former USSR, it is estimated that 400,000 women are undertaking heavier than legally sanctioned manual labour, and that between 20 and 50 per cent of female workplaces do not meet safety requirements (WHO, 1994).

In a weak economy in particular, the gap between legal provision and inescapable practice may have consequences which, though unforeseen, have actually added to the hazards of women's work. In Russia, training in about 600 of the 5000 recognised workers' occupations is prohibited to women on the grounds of the health risks involved. However, such provision is not - indeed, cannot be rigorously enforced, so that while women continue to be barred from training, they are employed for example in driving tractors to apply pesticides: without the requisite training and skills levels, and on lower pay (Fong, 1993).

With the growth of the women's movement and the introduction of measures such as the Convention on the Elimination of All Forms of Discrimination Against Women, the purposes and the practical implications of much of the 'protective' legislation on women's occupational health began to be questioned. One criticism was of what has been described as the 'perpetual pregnancy' myth: the assumption that because women can bear children they are always about to and that therefore all women should be excluded from certain jobs which could potentially affect a foetus.

A further criticism was that potential dangers to men's ability to reproduce and produce healthy children were not taken into account. If a process involved hazards, it was argued that instead of excluding women, those hazards should be reduced for all workers. A classic example involves work with lead, from which, in a number of countries including for instance the USA, Canada and Australia, women were for many years excluded. There is, however, no significant difference in the toxicological responses between the sexes and the effect of the legislation was to leave men unprotected whilst women were excluded from such work (ILO, 1995).

Similarly, common restrictions like those which prohibited women from doing work involving lifting more than a certain number of kilos, when there were no weight restrictions for men, were seen to be discriminatory as well as poor practice. They kept women out of particular occupations, while offering no good general worker protection (Mason, 1995). As one study in the USA showed (Root et al., 1984) protective legislation or policy regulation was least common in those industries in which women predominated. Some of the hazards which women in those industries faced, however, were comparable to those in the male-dominated industries or occupations from which the legislation excluded women.

Women, for example, were initially refused work in the New South Wales steel industry because of statutory limitations on weight limits in women's work. No similar restrictions applied to men. But the company involved had not identified jobs which involved lifting such loads, so that those women who were later employed in the industry often had to undertake such lifting: the prejudices of management, rather than regulations, affected employment practices (Mason, 1990).

As a result of the enactment of legislation against sexual discrimination, a number of countries have recently re-examined their laws and regulations on occupational health, and revised them accordingly. In Germany, to take a typical example, bans on women working at night were found to be unconstitutional. Among other restrictions affected by this ruling, was the exclusion of women from the building industry. This in turn triggered examination of the reasons for the existing high levels of accidents and industrial diseases across the industry, and review of the existing occupational health and safety regulations (Hoffmann and Meyer, 1992).

A continuing problem in the development of occupational health policies and programmes for women is the gender structure of the institutions involved. In Australia over the past two decades, legislation and tripartite structures have provided an institutional framework for occupational health and safety which covers all workplaces, emphasises prevention and involves employers, union/workplace committees and government. However, a preponderance of ambitious and highly placed men in the three systems at first effectively excluded women, whose particular occupational health concerns were frequently overruled. Despite recurrent efforts to redress the situation, a recent report notes that women workers have been under-represented in occupational health and safety training funded by the Federal government (Mason, 1995).

### **International responses to issues in women's occupational health**

The World Health Organisation Regional Office for Europe held an expert group meeting on 'Women and Occupational Health Risks' in Budapest in February 1982. Discussions focussed on working women, with emphasis on problems arising from their exposure to toxic chemicals and to physical, biological, psychosocial and ergonomic factors in occupational health. The phrase 'working women' was interpreted more simply than it would be today, as covering only those women in employment outside the home.

The Meeting's concerns were with any risks which were either specific to women - for example, risks during pregnancy - or to which women were more vulnerable than men. The latter group might include, among other things, vulnerability because of ergonomically inappropriate machinery or working conditions. It concluded, somewhat tentatively in view of the paucity of available data, that although women on average might be smaller than men, have a shorter reach, and so on, the extent of overlap between the sexes suggested there was little evidence of vulnerability based on sexual differentiation.

In 1991, the WHO Regional Office for Europe commissioned a study to establish a situational analysis of women at work in Europe (Maw, 1991). The report examined the statistical data on numbers of women employed in Europe, and the industries and occupations in which they were concentrated, and also assessed recent changes in

employment patterns as well as future prospects. Issues of unpaid work and of paid work undertaken in the home were not explored, and those concerning part-time work, and work in the informal sector, received very limited discussion. The Report remained in manuscript form only.

A proposal for a WHO Strategy on Occupational Health For All was developed and adopted at the Second Meeting of WHO Collaborating Centres in Occupational Health, held in Beijing, China 11-14 October 1994. The proposal was then put forward to the 49th World Health Assembly (25 May 1996) where it was formally endorsed. Whilst the document has an undoubted value in drawing attention to the urgent need to improve occupational health and safety and to strengthen occupational health services, it does have limitations so far as women's occupational health needs are concerned.

The situation analysis, with which the Strategy opens, describes the work of women largely in relation to women's increasing participation in the formal workforce. The heavy concentration of women in the informal sector of work in 'small-scale enterprises, home industries, small farms' is not apparent: the paragraphs (7, 20) which discuss the informal sector once mention 'pregnant women' but otherwise talk only of 'family members'.

What is tagged as the paragraph on the special occupational health needs of working women (27) instead describes problems, such as the 'heavy physical work' and 'less developed working methods' which women in developing countries experience. It indicates that machinery and tools designed 'according to male anthropometry' would be unsuitable for women: a view not held by the 1982 Europe Region meeting. It states that women may face problems of occupational exposures which are hazardous to reproductive health; there is no parallel recognition that occupational exposure may also affect men's reproductive function.

In contrast, the International Labour Conference of ILO had, in 1985, already passed a resolution on equal opportunities and equal treatment for men and women in employment which specifically called for research and consequent action to protect both women's and men's reproductive health function. The conference also called for a review of all protective legislation affecting women's work in the light of technological change and scientific knowledge.

Earlier still, in 1981, the International Labour Conference had adopted the Workers With Family Responsibilities Convention (no. 156) designed to promote equality of opportunity and treatment for men and women workers. A survey conducted in 1993 by ILO's Committee of Experts on the Application of Conventions and Recommendations revealed that a number of governments, as well as employers' and workers' organisations, did not seem to understand clearly the purpose and requirements of the Convention and its Recommendation. This finding helps to explain why, to date, only 25 countries have ratified it.

By 1995, ILO had begun to implement a gender training programme for its staff and constituents (ILO, 1995). In the following year, the ILO Conference adopted a

Convention and Recommendations on homeworkers, setting minimum standards for pay and conditions which can - at least in theory - be translated into national policies and laws.

There is, in sum, a considerable way to go before the issues around women's occupational health are fully understood, let alone fully taken into account in policies and programmes. The Global Commission's identification of the topic of occupational health as one of those key subjects for examination is itself a significant milestone along the road. Subsequent chapters of this report indicate that women do face significant occupational health problems, but that their specific manifestations in particular circumstances and their extent require considerable further investigation before effective strategies to tackle those health problems can be applied. As a recent assessment of women's economic roles and child health (Basu, 1996) stated, even less is known of the nature and extent of the impact of productive work and housework on the health of women themselves than is the case for child health, and the need for research and planning to take this into account if female employment is to be a worthwhile goal for society cannot be overstated.

**Table 1.1 Numbers of persons with one disability attributable to accident, by type, sex and area: Malawi, 1983**

	total		rural		urban	
	m	f	m	f	m	f
Amputations (excluding leprosy):						
fingers	1956	697	1863	663	93	34
1 leg	1245	394	1165	334	80	60
toes, 1 foot	559	676	511	666	48	10
1 arm	402	228	350	228	52	--
fingers (2 hands)	88	--	88	--	--	--
2 legs	75	--	65	--	10	--
toes, 2 feet	40	18	35	18	5	--
Burns	663	591	612	558	51	33
Scalds	364	474	339	468	25	6
Total	5392	3078	5028	2935	364	143

Source: Malawi National Statistical Office, 1987

## 2. WOMEN'S REPRESENTATION IN THE WORKFORCE

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### Defining the workforce

The concept of labour force, especially as applied to women, has always been a difficult one to define. There is little consistency in definitions, either at the international level between UN agencies, amongst different countries, or in national statistics over time and great caution should be used in making international comparisons. A personal occupation implies attributes - separation of home and workplace, individual mobility, cash earnings and continuous employment - which do not fully reflect the circumstances of many women's lives.

The difficulty is greatest in developing countries, because workers are more likely than their Western counterparts to be self-employed rather than wage-earners, to work seasonally rather than year round, to be underemployed rather than formally unemployed and to engage in a fluid or sporadic pattern of diverse economic activities. In addition, the boundaries between domestic production for the household's own consumption, and economic activity for sale or exchange, is less clearly drawn in the rural sector (Dixon, 1982).

The family, rather than the individual, was traditionally recognised as the economic unit in Britain, as in other countries, but with the growth of manufacturing industries it became important to know how many workers were employed in each sector. Once individual workers were recorded in the census, the question arose of how to classify other family members. In the 1851 census of England and Wales, women engaged in domestic duties were recorded in a separate class of occupations, rather than among the economically inactive. The 1871 Census report affirmed a wife's economic functions in the household, but it also pointed out that 'housewives' carried out other occupations as well, and was confused about how to deal with the problem of double counting if those other occupations were recorded as well. In subsequent censuses, women engaged in household work were excluded from among the economically active. By the end of the century, the censuses of England and Wales, as well as those of other industrialised countries, had succeeded in identifying only those occupations in which activities were gainful, as opposed to those that were productive.

Even then, there are still problems in classifying paid work. For example, how to distinguish part-time work from seasonal, casual or temporary work? Thus temporary employment is defined differently in different countries belonging to the OECD. In Ireland it refers to seasonal or occasional work; in Germany short-duration contracts, in Australia, to casual work. However, in all OECD countries employed women of any age are more likely than men to be in temporary employment. In the countries of the European Union, temporary jobs account for 11.9 per cent of total employment amongst women and are most common in the agricultural sector (OECD, 1996).

Similarly, if somebody undertakes seasonal, casual or temporary work, are they otherwise unemployed? How is unemployment itself defined, and who is excluded from that definition? As the official history of the General Register Office in Britain points out, definitions and classifications reflect the preconceptions of those who devise them and, once devised, they in turn produce inescapable conclusions and policies (Nissel, 1987).

### **Women's unpaid work**

The distinction between productive work and gainful work often depends upon time and place. In third world cities, as well as in Western countries, flour is bought ready ground; heat and light come from electricity; water from taps: these commodities form part of the industrial sector, are bought and sold, and those who work to provide them are gainfully employed. In poor agricultural societies, growing and processing food, gathering fuel, collecting water and cooking are traditional female activities. Women in Sub-Saharan Africa provide about 70 per cent of agricultural labour. In Uganda, for example, women produce 80 per cent of the country's food, largely working in the subsistence sector while also performing a greater share of household tasks than men (UN, 1996). Because such activities are unpaid, their crucial contribution to community survival remains unrecognised.

The 1981 Census in Pakistan, for instance, defined participation in the labour force as those 10 years or older who had been involved in any economic work during a one-week period before the Census. Those working part time in the informal sector, full time in family businesses and seasonally on agricultural land were therefore uncounted. Thus the female participation rate was recorded as a mere 3 per cent. Yet a Census of Agriculture, undertaken the previous year, had estimated that 73 per cent of women in agricultural households were economically active.

In the province of Baluchistan, the contrast between the official labour force participation figure for women (one per cent) and a description of women's work is particularly dramatic. In agriculture, the women undertake all activities except sowing; they sort and process fish; manage livestock and poultry and their products, both domestically and commercially. Housework includes fetching water from as far as 10 kilometres away, two to four times each day; collecting wood and fuel for heating and for the stove; managing the home and children; and - in their 'leisure' time - supplementing the family income by wool sorting, embroidery, straw weaving and so on (WHO, n.d.).

Time-use studies, which look at all the activities of individuals over a fixed period of time, offer perhaps the most comprehensive picture of women's contributions but are still rarely undertaken in developing countries. However, some data are available for three countries in South Asia. These show that women and girls in those three countries spend from 3 to 5 hours each week more than men on subsistence activities, such as carrying water and wood, growing and processing primary agricultural products; they spend an additional 20-30 hours more than men on unpaid housework.

#### Table 2.1

In Australia, a similar time use study found that women above the age of 15 spent twice as much time as men each week performing unpaid household activities. Australia during the 1990s became one of the first countries to attempt to quantify the unpaid work component of time use, and to begin to incorporate unpaid household work and voluntary and community

work into its system of national accounts. Australia used the replacement cost method, which assigns value to the time spent on household production by household members according to the cost of hiring a market replacement for each individual function. The calculations suggest that the total value of unpaid work was equivalent to 58 per cent of GDP as that is normally calculated; in other words, if unpaid work was included, the country's domestic product would have been larger by three-fifths (ABS, 1994).

### **Women in the labour force**

As the Australian example suggests, household production is often combined with some income-generating employment, whether full-time, seasonal, part-time or occasional. Over the past two decades, women's share in the labour force has increased significantly in all regions except east Asia, where women's labour force activity was already quite high by 1970, and sub-Saharan Africa, where structural adjustment programmes have forced some women out of the formal labour sector. They may be employed in the formal, structured, sector of the economy, or in the informal sector: in the mass of small scale labour intensive operations like tailoring, street vending, beer brewing, or food preparation.

Figure 2.1

While the male labour force is distributed across the agriculture, industry and service sectors of the economy, women tend to be highly concentrated in a single sector. In the more developed regions, Latin America and the Caribbean some three quarters of the female labour force is to be found in service industries.

Table 2.2

A notable exception is Russia, which not only has a majority of women in the labour force, at 52 per cent in 1991, but has proportions of women in the industrial sector (37 per cent) almost as high as in services (41.8 per cent) (Fong, 1993).

The distribution by industry alone, however, is not very helpful for the assessment of potential occupational health risks. Industry categories as such encompass all types of workers, from managers and supervisors to typists, drivers and labourers: categories with a diversity of occupational health risks. For the assessment of potential health risks, knowledge of occupation may be, in many instances, more important than in what industrial field the occupation is pursued.

Another aspect of the classification of economic activity is by employment status. As far as occupational health

risks are concerned, employers, for instance, are almost certainly less vulnerable than employees. Specific differences in occupation vary among regions and over time, but a characteristic common to all regions is that women are under-represented in administrative and managerial posts and in production and transport. By contrast, they are widely found in clerical and service as well as professional and technical jobs.

Table 2.3

Work in the services sector is frequently poorly paid, although in a few OECD countries (Japan and Italy) low pay is more prevalent in the manufacturing industries. In every OECD

country, however, women are much more likely than men to be working in low paid jobs (OECD, 1996).

The distribution of working women by industry, occupation and status in employment is dependent upon the level of the country's economic development, and also on cultural perceptions of women's roles and status in the society. The difference in the distribution of economically active women between a less developed country and a more industrialised country can be seen by comparing the distribution of working women by industry in Zambia and Chile.

Table 2.4

Two thirds of the Zambian economically active women worked in primary industry - predominantly agriculture. In contrast, most Chilean women worked in community, personal and social services; one in six working women had a job in trade outlets, restaurants and hotels, and one in ten in manufacturing industry. The occupational distribution of working women in an Asian developing country, Sri Lanka, indicates employment conditions similar to those in Zambia.

Table 2.5

The other factor associated with the position of women in economic activity is culture, often mediated by religion. In many countries with prevailing Islamic tradition women are not expected to work outside the home, unless they are well educated professionals or, in contrast, so poor that the family cannot afford to forego the wife's potential earnings. The point is clearly depicted by comparison of age-specific labour force participation rates (proportion of women reported as working or looking for job out of 100 women of a given age) in Canada, Zimbabwe, Tunisia and Jordan.

Table 2.6.

In Jordan, the country with the lowest recorded participation of women in economic activities, of the 29.5 thousand of women reported as 'economically active', 17.1 thousand (57.9 per cent) were in professional and technical occupations; another 3.6 thousand (12.2 per cent) were service workers and 2.1 thousand (7.3 per cent) production and transport equipment operators - some of whom were either Palestinians or hired from overseas. Ninety-five per cent of the economically active women were employees; only 211 were recorded as employers and 1,085 as working on their own account: most of them in manufacturing and personal and social services.

### **Women in the informal labour sector**

Although fewer women than men worldwide are in the overall labour force, in some countries, such as Zambia, Honduras and Jamaica, the informal sector employs more females than males, while in a number of other countries, women make up 40 per cent or more of the informal sector. The significance of the informal sector, in relation to overall production and labour force, varies from country to country but is thought to be greatest in Africa.

Table 2.7

These data suggest that women are found in the informal sector more often than men because of lack of opportunities or other obstacles to wage employment. There is a positive

correspondence in the country studies between the importance of informal sector production and women's participation in that sector. Where there are high levels of informal production, women's participation is high.

A World Bank study of local urban communities in Lusaka, Zambia; Guayaquil, Ecuador; Metro Manila, Philippines and Budapest, Hungary. found that the majority of women workers - and more women than men - work in the informal sector of petty trade and service activities. That study showed that declines in household income resulting from economic adjustment programmes and declines in public spending were an important reason for women to join the labour force. Their young daughters are more likely to work in the home, releasing other family members for paid employment: in Zambia one in five young girls looked after siblings; in the Philippines half did so while in Ecuador the proportion was two out of three. The incomes the women were able to earn, and the contributions of their daughters to housework and child care, were essential in keeping the family alive (Moser, 1996).

The informal sector is also a major area of child labour. While the labour force participation rates of girls under the age of 15 are lower than those of boys, approximately one in five girls in sub-Saharan Africa and in East Asia and Oceania are reported as workers. Overall, eighty per cent of girl workers, as well as 75 per cent of economically active boys, are to be found in the agricultural sector.

#### Figure 2.2

The informal sector in most countries probably includes a large number of part-time workers, especially among women, as the time-use data from the three South Asian countries given above suggest. In the countries of the European Union in 1992, 29 per cent of women in work were part-time workers, compared with 4 per cent of men. In most EU member states, the numbers working part-time were twice as high when the woman had children (Eurostat, 1995). Part-time workers tend to be concentrated in female-dominated and lower-paid occupations, and are less likely to have rights to insurance benefits or other social welfare provisions.

Restructuring the Russian economy has involved high unemployment, especially amongst white collar workers. In 1992 women - who tend to have higher qualifications than men - made up 71 per cent of the unemployed. Some industrial enterprises have introduced mandatory part time work or 'administrative leave' and workers may be required to take days or even months off, frequently without pay. Reduced shifts in, eg, the textile industry which employs a mainly female labour force, are often a precursor to unemployment (Fong, 1993).

Work undertaken at home has traditionally been a feature of the informal labour sector, but it is now increasingly associated with modern patterns of production in a range of industries. Thus, for example, homeworkers in Yorkshire, England, assemble components of electric blanket switches for a subcontractor of a German firm, who ships the completed switches back to Germany (Drew et al., 1995). As identified by the European Union, the category of 'homeworker' includes not only the self-employed but employees whose formal agreements with their employers include reference to home working. Across the Community, 5.2 per cent of women workers and 4.7 per cent of male workers were working at home (Eurostat, 1995).

#### Figure 2.3

In Portugal, women working from home are concentrated in agriculture; in Spain the footwear and clothing industry accounts for many such home workers; elsewhere the work is largely the provision of services.

### **Women and unemployment**

Data on unemployment are of uneven quality and are seldom comparable between countries; where populations are heavily dependent on subsistence agriculture unemployment itself is difficult to define. Those data which are available, such as information on the countries of the European Union, suggest that unemployment rates for women are frequently, though not universally, higher than those of men. Any reported unemployment rates for women are probably under-estimates as more women than men become discouraged from seeking work - especially those who have been unemployed for a long time - and drop out of the labour force.

**Table 2.1 Time use in three southern Asian countries, 1989/92**

		Hours per week of economic activity			Hours per week of housework	Total work hours per week
		Paid	Subsistence	Total		
Bangladesh	Ages 5+					
	Women	14	8	22	31	53
	Men	38	3	41	5	46
India	Ages 18+					
	Women	28	7	35	34	69
	Men	43	4	47	10	57
Nepal	Ages 15+					
	Women	18	17	35	42	77
	Men	29	12	41	15	56

Source: UN, 1995

**Table 2.2 Percentage distribution of the female and male labour force by industrial sector, 1994**

Developed regions	Female labour force			Male labour force		
	Agriculture	Industry	Services	Agriculture	Industry	Services
Eastern Europe	17	35	48	20	45	35
Western Europe and other developed	7	20	73	7	43	50
<b>Africa</b>						
Northern Africa	25	29	46	27	33	40
Sub-Saharan Africa	75	5	20	61	15	23
<b>Latin America and Caribbean</b>						
Central America	7	19	74	41	23	36
South America	10	14	76	27	28	45
Caribbean	11	12	77	23	28	49
<b>Asia and Pacific</b>						
Eastern Asia	35	29	36	29	34	37
South-eastern Asia	42	16	42	47	19	34
Southern Asia	55	25	20	59	14	27
Central Asia	33	20	47	34	31	35
Western Asia	23	15	61	19	33	48
Oceania	21	13	66	27	29	44

Source: UN, 1995

**Table 2.3 Percentage distribution of the female and male labour force by major occupational group, 1970 and 1990**

	Percentage distribution of the labour force, each sex							
	Professional and technical; administrative and managerial		Clerical, sales and service		Agriculture and related		Production and transport workers and labourers	
	<u>1970</u>	<u>1990</u>	<u>1970</u>	<u>1990</u>	<u>1970</u>	<u>1990</u>	<u>1970</u>	<u>1990</u>
<b>Women</b>								
Developed regions	13	23	49	48	14	8	20	15
Northern Africa and western Asia	25	21	26	35	37	27	9	9
Sub-Saharan Africa	5	6	27	23	54	53	7	9
Latin America and Caribbean	13	15	54	55	11	5	15	14
Eastern and south-eastern Asia	8	9	31	38	33	35	20	14
Southern Asia	4	11	8	12	65	44	21	19
Oceania	16	17	22	37	58	21	3	13
<b>Men</b>								
Developed regions	13	20	20	22	15	9	48	43
Northern Africa and western Asia	7	11	25	29	24	18	38	35
Sub-Saharan Africa	4	5	14	14	48	50	28	21
Latin America and Caribbean	6	11	16	25	44	21	27	36
Eastern and south-eastern Asia	7	9	25	23	32	37	29	29
Southern Asia	2	5	10	20	73	39	13	26
Oceania	7	13	9	15	67	32	17	28

Source: UN, 1995

**Table 2.4 Economically active women by industry.  
Zambia (1980) and Chile (1982) (numbers in thousands)**

Industry division	Zambia (a)		Chile (b)	
	no.	%	no.	%
Total economically active	394.3	100	959.5	100
Agriculture, hunting, forestry, fishing	271.3	68.8	20.7	2.2
Mining and quarrying	2.5	0.7	2.2	0.2
Manufacturing industry	10.2	2.6	103	10.7
Electricity, gas, water supply	0.3	0	1.9	0.2
Construction	0.5	0.1	4.1	0.4
Wholesale and retail trade, restaurants, hotels	41.9	10.6	160.5	16.7
Transport, storage, communications	2.5	0.7	15.6	1.6
Finance, insurance, real estate, business services	5	1.3	32	3.3
Community, personal and social services	44.5	11.3	517.3	53.9
Not adequately described	15.4	3.9	102.2	10.8

(a) women aged 12+ years (b) women aged 15+ years

Source: UN, 1992

**Table 2.5 Economically active women classified by occupation  
and status. Sri Lanka, 1981 (numbers in thousands)**

Occupational category	Employer	Own account worker	Employee	Unpaid family worker	Total
Professional, technical & related	0.3	1.3	114.3	0.2	116.1
Administrative & managerial	0.2	0.2	2.9	0	3.3
Clerical & related	0.3	0.1	57.6	0.1	58.1
Sales	0.8	9.6	12.8	0.9	24.1
Services	0.6	2.7	40.6	1.3	45.2
Agricultural, hunting, fishing, forestry	2.8	87.9	329.9	35.9	456.6
Production and transport	2.1	12.1	126.4	1.2	141.8
Not adequately described	–	--	–	--	25.7
Total	7.3	115.7	707.6	40.2	870.8
Per cent	0.8	13.3	81.3	4.6	100

Source: UN, 1992

**Table 2.6 Percentage of economically active (working or looking for job) women in Canada (1986), Zimbabwe (1982), Tunisia (1984) and Jordan (1979)**

Age group	Canada	Zimbabwe	Tunisia	Jordan
15-19	45.6	46.8	25.2	3.4
20-24	80.9	50.9	38.1	15.7
25-29	75.7	48.5	29.4	13.5
30-24	71.7	50.2	23.6	8.7
35-39	72.4	51.3	19	5.2
40-44	72.0	52.6	14.6	3.3
45-49	67.1	52.3	12.9	2.4
50-54	57.9	50.6	11.6	2
55-59	44.7	50.7	9.8	1.8
60-64	27.5	31.7(a)	4.4	1.1

(a) age group 60 and over

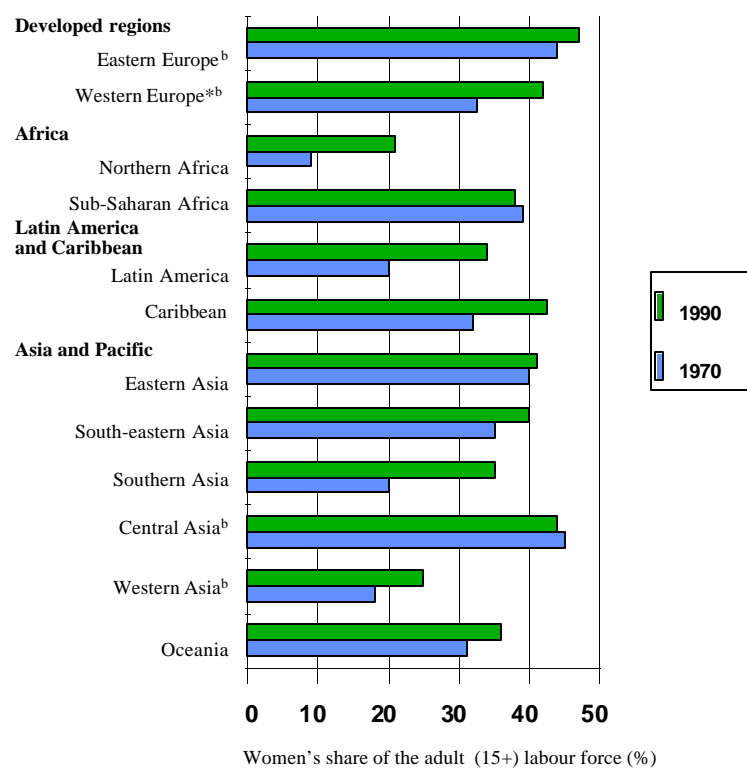
Source: UN, 1992

**Table 2.7 Percentage distribution of informal sector employment in selected countries by type of industry, 1984/92**

	Percentage distribution of informal sector employment		
	Industry	Transport	Services
Africa			
Burundi	45	2	53
Congo	30	3	67
Egypt	39	15	46
Gambia	20	3	77
Mali	38	1	61
Zambia	24	1	75
Latin America and Caribbean			
Brazil	17	6	77
Costa Rica	26	2	72
Honduras	31	3	66
Jamaica	22	5	74
Mexico	15	7	78
Uruguay	30	4	66
Venezuela	21	15	64
Asia and Pacific			
Fiji	26	16	59
Indonesia	22	6	72
Iraq	28	22	50
Korea, Republic of	21	5	74
Malaysia	22	6	72
Qatar	24	10	65
Syrian Arab Republic	13	5	82
Thailand	23	13	65
Turkey	31	17	62

Source: Compiled from national studies by Lourdes Ferrán as consultant to the Statistical Division of the United Nations Secretariat

Source: UN, 1995

**Figure 2.1 Women's share of the adult labour force, 1970 and 1990<sup>a</sup>**

Sources: For 1970, prepared by the Statistical Division of the United Nations Secretariat from estimated economically active population in *Economically Active Population - Estimates, 1950-1980, Projections, 1985-2025*, six volumes (Geneva, International Labour Office, 1986); for 1990, prepared by the Statistical Division from ILO, *Year Book of Labour Statistics*, various years up to 1993 (Geneva) and national census and survey reports.

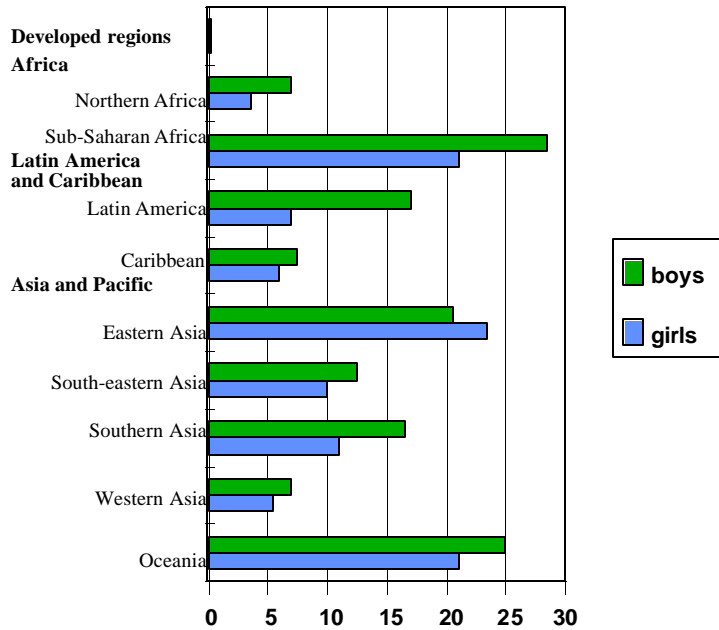
\* and other developed regions

<sup>a</sup> Estimates for 1990 based on national population census and survey data as reported by countries and not adjusted for comparability to internationally recommended definitions. Covers fewer countries than the ILO estimates for 1970.

<sup>b</sup> Figures for 1970 include ILO estimates for States succeeding the former USSR.

Source: UN, 1992

**Figure 2.2: Labour force participation rates of boys and girls 10-14 years old, 1990**



Source: International Labour Office, *Bulletin of Labour Statistics*, 1993, No.3. Based on data compiled by ILO from censuses and surveys in 124 countries

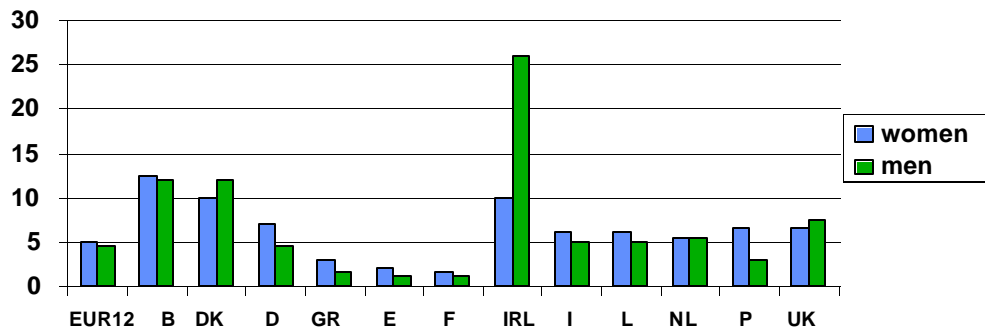
**Percentage distribution of economically active boys and girls under 15 years of age by sector, 1990**

	Girls	Boys
Agriculture, hunting, forestry, and fishing	80.1	74.6
Mining and quarrying	0.5	0.5
Manufacturing	11.5	8.6
Electricity, gas and water	0.1	0.0
Construction	0.1	1.2
Wholesale & retail, rest., hotels	2.1	7.2
Transport, storage and communication	0.0	0.7
Financing, insur., real estate, busin. serv.	0.0	0.2
Community, social and personal services	5.0	5.6
Activities not adequately defined	0.6	0.8
Total	100.0	100.0

Source: International Labour Office, *Bulletin of Labour Statistics*, 1993, No.3. Based on data from 19 countries

Source: UN, 1995

**Figure 2.3 People who usually work at home, as a percentage of all working people, by sex, 1992**



B-Belgium, DK-Denmark, D-Germany, GR-Greece, E-Spain, F-France, IRL-Ireland, I-Italy, L-Luxembourg, NL-Netherlands, P-Portugal, UK-United Kingdom

### 3. UNDERSTANDING OCCUPATIONAL DISEASE IN WOMEN WORKERS

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Recognising and understanding the relationships between health hazards on the job and development of disease in both men and women workers is challenging for many methodological and practical reasons. Many occupational diseases and disorders are chronic, meaning that they take long years of exposure to manifest themselves. Most are multifactorial in origin, so that non-occupational risk factors may also play an important role in causing or exacerbating them. Exposures may not be completely identified and they may change well before the disease becomes apparent. The numbers of workers exposed may be insufficient for any relationship to be 'established' statistically or even suspected.

Recognising and understanding women's occupational health hazards has, in addition, been impeded by the notion that women's jobs are 'safe'. If health problems are identified among women workers, too often they are attributed to unfitness for the job, to hormonal factors or to the likelihood that women will just be complaining without real cause. Special attention must be given to research methods and practices that can reveal risks to the health of women workers.

Appropriate indicators must be found for the hazards in women's jobs. These do not stand out when examining compensated work accidents and injuries, the usual indicators of occupational health problems. Men have from three to ten times more compensated industrial accidents and illnesses per worker than women (Pines et al., 1992; Robinson, 1989; Wagener and Winn, 1991; Laurant, 1991). Some of this excess is a result of the fact that women and men do not have the same job distributions; when comparisons are made within the same industry, sometimes women have more accidents than men, sometimes fewer. Women average more industrial disease than men (Messing and Boutin, in press), and their problems may be underestimated since many industrial diseases go unrecognised. It is easy to recognise that a leg broken in the workplace is an occupational problem but an allergy or inflammation that develops more slowly is not readily associated with the job (Kraut, 1994; Michele, 1993). Women's illness and injury rates may also be artificially lowered by a technical factor. Because women tend to work fewer hours than men at paid jobs, accident rates of women appear lower when, as is

usual, the rates are calculated per worker rather than per hour worked. Of 14 studies comparing women and men, only two gave information on person-hours worked (Messing et al., 1994).

The major reason it is necessary to develop specific tools for research into women's occupational health problems is that the labour force is still very much divided by sex, so women and men do very different work and are exposed to different risks. In order for men and women to be evenly distributed across the job market, about three quarters of women would have to change jobs (David, 1986). A recent study of workers in North Carolina, U.S.A., puts this figure at 76 per cent, even higher than that for racial segregation: 55 per cent (Tomaskovic-Devey, 1993). Despite considerable progress in integrating women into the labour force, women are still found in jobs where employment conditions are relatively unfavourable. This sexual division of labour affects women's health in at least six ways:

- 1) Women's jobs have specific characteristics (repetition, monotony, static effort, multiple simultaneous responsibilities) which may lead over time to changes in physical and mental health;
- 2) Spaces, equipment and schedules designed in relation to the average male body and lifestyle may cause problems for women;
- 3) Occupational segregation may result in health risks for women and men by causing task fragmentation, thereby increasing repetition and monotony;
- 4) Sex-based job assignment may be vaunted as protecting the health of both sexes and thus distract from more effective occupational health promotion practices;
- 5) Discrimination against women is stressful in and of itself and may affect mental health;
- 6) Part-time workers are excluded from many health-promoting benefits such as adequate sick leave and maternity leave.

Recent years have seen an increase in the number of women in the labour force and public health practitioners, workers and scientists are starting to include women's concerns in their occupational health activities. Methodological questions are emerging, such as how to analyse data by gender; how to take into account the different life patterns of women and men; how to identify health problems which arise in women's traditional work and for which strategies may not have been developed. Related social issues arise and must also be dealt with, such as how to make sure that recognition of health hazards in women's work does not lead to denial of employment opportunities for women; should men and women be distributed in a more random way across employment categories or is each gender more 'suited' to a specific type of work?

### **Problems in data collection and analysis**

Problems in data collection can preclude women from being studied. For example, a Canadian study of the effects of agricultural exposures was forced to eliminate women since only the husband of a farming family was identified as a farmer in most provincial records (Semenciew et al., 1993). Also, many death certificates have not contained information on women's profession, in part because once a woman has retired she may be considered to be a housewife. Women's jobs may not be studied because they work in very small workplaces which are not easy to study one

by one. A priority for research in women's (and men's) occupational health is establishment of appropriate data bases.

### **Exclusion of women from studies**

In the past, women were excluded from studies of occupational health. Greenberg and Dement (1994) found a large excess of studies of occupational disease involving only males. A well-documented example is the field of occupational cancer. Of 1233 cancer studies published in 1971-1990 in the eight major occupational health journals, only 14 per cent presented analyses of data on white women and only 10 per cent on non-white women (Zahm et al., 1994). Part of the reason for exclusion is the choice of jobs for study: miners, refinery workers and foundry workers are almost always men.

These exclusions create a circular situation where there is evidence of health problems only among men, leading to a reluctance to study women because of an impression that not many women get occupational disease. One consequence is that workers are studied as if they were all men. For example, Greenberg and Dement (op cit) describe the numerous biological differences between women and men that can affect their responses to toxic chemicals. These have not usually been taken into account in standardsetting and exposure assessment.

### **Validation of research instruments**

Research instruments and standards which have been derived with all-male populations have sometimes been used without further validation on female populations. An example is the well-known Karasek questionnaire on job demands (Hall, 1989) or strength testing done by procedures validated on male populations (Messing and Stevenson, 1996). Occupational prestige scales and social class scales are often used which use the husband's job to ascribe a score to the wife (Blishen et al., 1987). This causes problems when data on health are adjusted for social class, since some social class influences on health may be mediated through common family revenue dependent factors such as nutrition and others may be specific to the individual situation such as education-related health-protective behavior.

### **The sexual division of labour**

When analysing data, there has sometimes been confusion between male- and female-specific health problems and effects of the sexual division of labour. Women and men are not distributed at random over the labor force, but are segregated into specific industrial sectors and into female-majority jobs within these sectors. Women are more concentrated into a few professions, with about one-third employed as secretaries and clerks, generally in five office work professions, including secretary, bookkeeper, information clerk (Stellman, 1994). Women are also over-represented in services jobs, in particular in personal service professions, including cleaners, waitresses, hairdressers and in the caring professions, including teachers, nurses, social workers. They are underrepresented in manufacturing and resource generation and are not uniformly distributed within those sectors, but can be found in specific factories and parts of factories. In the clothing industry, women are sewing machine operators making women's clothes, while men's coats are usually sewn by men. Cutters are almost always men while pressers are sometimes women. In the auto industry, women sew seat covers and men install engines. The division in

jobs with a manual component usually follows a pattern. On assembly lines, men are found at the beginning and the end, women in the middle where their production is pushed by the person who furnishes them with materials and pulled by the person ahead waiting for them to finish. If they work too slowly, pieces pile up and the surrounding workers suffer.

There is also vertical segregation in the job market. It is much more common for men to be in positions of higher prestige and authority. Women are three times as likely as men to work part-time and three times as likely to be temporary workers. Also, women are more apt to work in small workplaces employing less than 20 workers (White, 1993).

Perhaps even more surprising than the extent of male-female job segregation is that of task segregation. Male cleaners may mop and female cleaners dust (Messing et al., 1996). Women and men with the same job titles can have very different exposures, a fact which has implications for epidemiological research. For example, male and female gardeners may have different exposures to pesticides where women do more planting and weeding and men do more pruning (Messing et al., 1994).

The fact that women and men are treated differently in the workplace makes it inappropriate to consider that women and men with the same job title have the same working conditions. In health research, using job title as a proxy for exposure may introduce inaccuracy and bias according to the gender of the worker. Hsairi et al. (1992) used expert estimates derived from job titles to classify workers in 13,568 jobs as exposed or not exposed to dust. Workers' reports of their own exposure and self-reports of symptoms of dust exposure (difficulty breathing, asthma) were correlated with experts' ratings. Self-reports of symptoms were better correlated with self-reports of exposure than with experts' estimates of exposure. Expert estimates were significantly closer to men's self-reports than women's. The authors interpret these results as implying a 'better perception' of exposure by the men, but it is also possible that experts' estimates of exposure according to job title are based on experience with male job-holders.

### **Gender insensitivity and oversensitivity**

Descriptors representing the place of people in society (gender, race, class) pose a special problem for epidemiological research. They may include higher probabilities of some biological characteristics (hormonal status, blood groups, nutritional status) but they also represent probabilities of different occupational exposures. If researchers simply adjust ('control') their analyses for gender, or if they include gender as a variable along with other exposure variables, the effects of genderspecific exposures may disappear from sight. For example, all the studies of carpal tunnel syndrome cited in a major review article were adjusted for gender (Hagberg, 1992), even though it has been shown that gender is not related to carpal tunnel syndrome if anthropometric measurements related to wrist anatomy and physiology are taken into account (Stetson et al., 1992). Adjusting or treating gender as an independent variable would be appropriate only if gender were an independent determinant of poor health reports: for example if women were weaker or complained more than men, or if the health effects had an important independent contribution from sex hormones or other biological differences.

An example is scientific studies on the effects of indoor air pollution. We searched the CISILO data base and found twelve epidemiological studies that related working conditions to symptoms

thought to be related to indoor air quality (Skov et al., 1989, 1990; Norback et al., 1990, 1990; Hodgson et al., 1991; Harrison et al., 1992; Kelland, 1992; Mendell and Smith, 1990; Menzies et al., 1993; Franck et al., 1993; Stenberg et al., 1995; Nelson et al., 1995). Women by and large suffered two to four times more symptoms than men, a fact that was mentioned in almost all the articles. However, only three articles even discussed this difference in symptoms. Only Stenberg and Wall took into account the gender division of labor in such a way as to allow us to understand why women had more symptoms: women in offices probably did more photocopying than men, with consequent increased exposure to ozone, toners and electrostatic effects; they shared offices more often, resulting in more exposure to second-hand smoke and less ventilation per person. Lack of attention to differential exposure leaves the reader with the impression that being female is a cause of the symptoms, perhaps because of weakness or psychological problems.

Thus, a decision must be made on whether to separate women out in occupational health studies. As we have seen, women can be included in two ways: they can be part of the main group (that is, they are no longer arbitrarily excluded, as in the past) or they can be part of one or more subgroups that may be based on gender. The decision whether gender is a suitable criterion for subgroup eligibility depends on both the biological plausibility for a gender-based effect, and the availability of sufficient numbers of subgroup members to ensure adequate statistical power for subgroup analyses to be meaningful (Angell, 1993).

### **Specific health problems**

Women and men do not experience the same health problems in the same proportions. When data are corrected for age, women are more apt to suffer from arthritis, high blood pressure and mental problems, whereas men have more heart disease and intravertebral disk disorders (Verbrugge and Patrick, 1995; Guyon, 1996). Some of the causes of these problems may be found in the workplace. We list here a few of the many health effects associated with women's jobs whose analyses may pose problems if special attention is not given to making them gender-sensitive.

*(i) Musculoskeletal disorders:*

One of the major research areas in women's occupational health is probably musculoskeletal problems (Hagberg et al., 1995) which make up the majority of cases of compensated occupational diseases. Although women live longer than men, women and men in many countries can expect to live a similar number of years in good health (Silman, 1987). Put differently, women spend about twice as long as men being disabled. One cause of disability is muscle and joint problems, more often found among women.

Manipulating heavy loads is the most commonly-studied musculoskeletal condition. Although women in many countries do carry heavy loads (in farm work, caring for children and nursing, for example), women's working conditions also include other, less visible stressors: highly repetitive work and prolonged standing, for example. In many jobs assigned to women (as well as some assigned to men) the work cycle is under ten seconds long and the same movements are repeated many thousands of times in a day. These movements can individually make trivial demands on the human body, but the enormous degree of repetition makes tiny details of the work environment assume primary importance. A chair the wrong height or a counter the wrong width may cause constant overuse of the same tendons or joints, yet the observer may see no problem. This explains why sewing machine operation, classed as light work, is associated with a very high probability of disability (Vezina et al., 1992). When analysing the effects of repetitive work, it is therefore important to separate out moderately repetitive work from the highly repetitive work done by many women (Fallentin et al., 1996; Silverstein et al., 1987).

Many women's jobs require static effort, exerted when muscles are contracted for long periods. This type of effort creates musculoskeletal and circulatory problems due to interference with circulation (Boitel et al., 1982; Abramson et al., 1981). Cleaning jobs (dusting high surfaces, bending over toilets) often require this type of posture (Messing et al., 1996). Many women's jobs in factories or services (sales, hairdressing, tellers, cashiers) require standing for long periods of time, resulting in back and other musculoskeletal problems. This kind of constraint is often forgotten when studying musculoskeletal problems.

Women are shorter on average than men and are proportioned differently (Pheasant, 1986). Tools and equipment are not always available in the right dimensions for women. Therefore, even the same tasks do not necessarily interact the same ways with men's and women's bodies, and women may develop ways to do specific tasks which are different from those of the average man. Lortie (1987) showed that, on average, female hospital orderlies lifted patients differently from men; they found ways to change lifting tasks into pushing and pulling tasks, in accordance with differential distribution of muscle strength. However, in a rigid, repetitive sorting task, where there was little control over task parameters and where certain dimensions of the work station caused problems for shorter workers, women had more work accidents than men (Courville et al., 1992).

These results support caution in using job title to estimate exposure for both genders if the job exposure matrix has not previously been validated separately by gender. In

addition, it may be unwise to adjust relationships between job title and disease incidence for gender, thus treating gender as a confounder when it may be a proxy for specific exposures.

*(ii) Stress and heart disease:*

The work of Karasek (1982) and others (Johnson and Hall, 1988) has related several workplace variables (degree of job control, level of demand) to effects on the cardiovascular system. Hall (1989) found that jobs assigned to women are characterised by a low level of decision latitude and more likely to be stressful. The double workday is another source of stress. Adequate data on the effects of stress on heart disease in women are not available because, unfortunately, most scientists who have studied heart disease by occupation have restricted their samples to men (Pickering et al., 1991). Although coronary artery disease is the most common cause of death among women, and more women than men report hypertension, heart disease is still thought of as a man's problem and many studies have not been gender-sensitive.

*(iii) Exclusion of problems specific to women:*

Menstrual symptoms are among the most commonly-diagnosed disorders of women, but until recently they were considered to be personal, possibly neurotic (Iglesias et al., 1980). During the mid-1980s, several researchers suggested that menstrual symptoms might be useful for the study of occupational effects on reproductive health, as well as indicative of health problems which should be addressed (Mergelr and Vezina, 1985; Harlow, 1986). Parameters of the menstrual cycle which can be studied in relation to occupation include regularity and length of cycle, length and volume of flow, and symptoms of pain and discomfort associated with the periods. The latter symptoms are quite common and can be studied in normal populations. Evidence is accumulating, both on parameters of the cycle which vary with exposure and on variations among working populations (Shortridge, 1988; Messing et al., 1992; Hatch and Friedman-Jiminez, 1991; Blatter and Zielhuis, 1993).

Information is also lacking on the relation between working conditions and age at menopause or menopausal symptoms. Age at menopause can be an indicator of exposure to environmental pollution, as shown by its relationship to smoking and a possible relationship to carbon disulfide exposure (Stanosz et al., 1995).

## **Conclusion**

There is great intra-sex variation on virtually every human characteristic within the female sex. Studying 'women' requires that a host of related biological and social characteristics be carefully controlled if the analysis is to have any meaning at all. Of particular concern is the possibility that gender-based analyses will obscure more meaningful variables and predictors of health-related outcomes, such as poverty, age, lifestyle, occupation, and so on. On the other hand, if women are not studied specifically, there is a strong likelihood that occupational factors that pose a risk for women's health will not be uncovered.

## 4. ISSUES IN OCCUPATIONAL MORTALITY OF WOMEN

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There are two ways in which occupational mortality is assessed: directly, by focusing on the influences on mortality of particular occupations and the health risks associated with them. Indirectly, by analysing mortality differentials by social class which, in turn, is determined by reference to occupation. The first approach was taken in the classical studies of Farr and Ogle in 1864 and 1885, respectively (Fox and Goldblatt, 1982); the latter approach was initiated by Stevenson (Fox, 1977). It must be emphasised, however, that in the indirect method differences in mortality may have been caused not only by occupational hazards, but also by differences among social classes in life style and social environment - including, for instance, diet, smoking and drinking habits, and quality of housing.

In the countries which carry out a regular census at five-year or ten-year intervals, a question is usually asked on individuals' occupation, occupational status and the industry in which he or she works. Similarly, registered deaths give the deceased person's occupation. Thus, in theory at least, it is possible, in countries which have a complete registration of deaths, to derive mortality rates either by occupation or by social class (subdivided by age and sex) for the years surrounding the census.

The usual measure of occupational mortality is a set of age and sex- specific mortality rates for the particular occupational category. However, in most instances, because of the comparatively small number of deaths in the typical age range of economic activity - say 15-54 years for women - the age specific death rates are rather unstable and may fluctuate considerably from year to year. To bypass this problem, a Standardized Mortality Ratio (SMR) is frequently derived. By taking the age-specific mortality rates for all women in the workforce as standard, and applying them to the age distribution of women in the particular occupation, the 'expected' number of deaths is obtained. A ratio of the actual - 'observed'- number of deaths and the calculated - 'expected' number is the MR (the ratio is usually multiplied by 100 for convenience). A MR value larger than 100 for a particular occupation indicates higher than average mortality in that occupation; and MR below 100 indicates lower than average mortality. The calculated MR can be easily tested for statistical significance to avoid drawing conclusions from non-significant MR values.

If the investigation of occupational differences in mortality is expanded into an examination of differentials by individual causes of death, the age-sex-cause specific death rates are likely to show even greater random fluctuations, because of small numbers in the cells of the detailed cross-tabulations of deaths by cause-sex-age. In such instances proportionate mortality ratios

(PMRs) are often used instead of mortality rates. The Proportionate mortality ratio is a ratio of observed deaths (from a given cause) and expected deaths,

$$\text{PMR} = \frac{\text{number of observed death from a given cause}}{\text{number of expected deaths from that cause}} \times 100$$

The expected deaths are computed by applying the proportion of total deaths due to the given cause in the general population to the total deaths in the occupational category of interest. Thus, for instance,  $\text{PMR} = 300$  indicates that the proportion of deaths attributable to a given cause was three times as high among the specific occupational category as among the national population.

A word of caution, however: the proportional mortality for the cause of interest is influenced by the relative frequency of other causes of death. The proportional mortality ratio of suicides among, say, agricultural labourers may be higher than among, for instance, teachers not only because suicides are more frequent among the former but because the number of deaths from cardiovascular diseases - to take one example differs between the two occupational groups. As a result, an observed excess for one cause of death in the occupational group may be the result of a deficit of deaths from another cause or causes, rather than being a true increased risk from the particular disease of interest. This is a serious weakness of the index and care has to be taken when interpreting PMRs.

Whichever method of calculating occupational mortality measures is used, the underlying assumption is that the information in the census and the death registry is comparable and complete. Unfortunately, this is not the case. The quality of the information on individual's occupation collected in the census is likely to deviate from that in the death register. The census information is about the person still alive and is likely to be provided by that person. The entry in the death registry is based on a statement furnished by the relatives. It sometimes happens that occupation is inadequately described or omitted altogether in answering the census question; but such a failure occurs much more often in filling out the death certificate. As a result, the occupational deaths rates calculated in the usual way are flawed and almost invariably markedly under-estimated.

In Australia, for example, the 1991 population census tabulations provided distribution of persons by occupation and age and sex. Age grouping available in the published table is in broad age groups 15-24, 25-34, 35-54 and 55 & more (ABS, n.d.). The census enumerated 3,025,220 women employed; for 178,229 (5.9 per cent) occupation was not stated at all and for another 24,267 (0.8 per cent) it was inadequately described. In all, for 6.7 per cent of employed women occupation was not known. This proportion varied by age, as shown in Table 4.1.

Table 4.1

Annual death statistics give deaths divided by sex, age, and occupational category. In the published table 'occupation not stated' is combined together with 'other'. The proportions of deaths in this combined category in the three years centred on the census year were: 20.1 per cent in 1990, 19.7 per cent in 1991 and 19.2 per cent in 1992. However, the average proportion of 'not

stated' and 'other' occupations in the registered deaths of women of typical working age, 15-54 years, in 1990-1992 was a staggering 42.1 per cent (see Table 4.1).

Such a defect in occupation reporting in death registration is not exceptional. The London Office of Population Censuses and Surveys (OPCS) analysed the agreement between the statement of occupational category of women aged 15-64 in England and Wales in the 1971 census and in the death record of those who died during the year after the census date. Table 4.2 summarises the result:

Table 4.2

The marginal figures show that while of the women who died in 1971, 33 per cent gave an occupation at the 1971 census, only 21 per cent had an occupation recorded in the death register. These figures, disconcerting as they are, disguise the fact that only for 15 per cent of deaths was occupation recorded both in the census and in the death register (McDowall, 1983). The situation has not improved over time: in England and Wales in 1979 of the 46,493 deaths of women in the workforce aged 15-64 years, 71.9 per cent had occupation inadequately described or not stated in the death register.

Hence, any calculation of occupational mortality rates will under-estimate the true levels of mortality in all the specified occupational categories. In the Australian data, the bias will be larger in the 15-54 years age groups and in the 'total' than in the 55+ age group (Table 4.3) in which the proportion of indeterminate occupation was similar in the census returns and in the death registration. In addition, it has to be kept in mind that the extent of the defective reporting of occupation, in particular in the death register, may vary from one occupation to another. Consequently, the validity of the differences in occupational mortality rates becomes doubtful and it may be impossible to draw any meaningful conclusions about the pattern of such differences between occupations.

Table 4.3

If one assumed that the occupations inadequately described and not stated, both in the census and in the death registry, are distributed in proportion to the known occupational categories, one could calculate the mortality rates as shown in Table 4.4. In this instance it appears that the highest was mortality of women occupied as tradespersons; the lowest seems to be mortality of sales and personal service workers.

Table 4.4

However, as pointed out earlier, it is not advisable to attribute meaning and importance to differentials in mortality rates in the open-ended age category 55-years and over. Similarly, in some occupational categories at the youngest age group the number at risk as well as the number of deaths is very small, rendering the rate unstable. This is, for instance, the case of 'managers and administrators' in the age group 15-24 years. The way of circumventing this problem is to calculate SMR for each occupation. This has been done for the age range 15-54 years and the results are shown in Table 4.5.

Table 4.5

It appears that women occupied as tradespersons and paraprofessionals have mortality nearly 50 per cent higher than the national average for all working women. The other two occupational categories with higher than average mortality are

professionals and managers and administrators; in these cases the excess mortality is about 20 and 12 per cent, respectively. In contrast, women in sales and personal services have the lowest mortality (about 30 per cent below average), followed by those working as plant and machine operators (about 12 per cent below average). All these differentials, though, reflect reality only if the underlying assumption - that the distribution of the women with inadequately described or unidentified occupations is proportionate to the distribution of identified occupations - holds true both in death records and census count. Unfortunately, examination of the limited data from an English longitudinal study shown below in Table 4.6 does not encourage us to believe that the estimates presented in Table 4.5 are not corrupted by the assumption of the proportionate distribution of the 'inadequately described or not stated' occupations.

Medical and epidemiological research on specific medical problems - such as studies on the relationship between exposure to risk at work or medical treatment and subsequent morbidity and mortality - have used linkages between routine records for statistical purposes. During the 1970s such an approach was extended in Great Britain to two national statistical sources: the National Cancer Registration Scheme and the Longitudinal Study of the former Office of Population Censuses and Surveys (OPCS-LS). The OPCS-LS was established in England and Wales to obtain medical, social and demographic statistics from a sample of the 1971 population census and vital registration records for the subsequent years. Bringing together statistical data from various sources has at least two advantages: firstly, it assures comparability between the occupation stated in the census count and in the death registration. Secondly, it makes it possible to analyse changes in individuals' characteristics over time, that is longitudinally. This has removed one of the serious drawbacks of cross-sectional studies of differential mortality and refined the analysis and understanding of the mortality differential between various groups of the population, such as social classes.

Table 4.6

An investigation of occupational mortality of women based on OPCS-LS carried out in England focused on selected causes of death from 1971 to 1985 (Devis 1993). Occupation was not tabulated as such but, rather, used to identify social class of individuals. The result for three causes of death is given in Table 4.6. It appears that deaths from ischaemic heart disease and cerebrovascular disease have higher than average incidence among women in social class IIIIN, IV and V - that is, in the manual and unskilled worker categories, than among the professionals and managerial occupations. The differential by social class in breast cancer mortality appears to be the opposite: women in social class IV & V show lower mortality than those in social class I & II.

One category of health risk that is easier to link with work performed than the often delayed or chronic effects of work is accidental death. The study of accidents by occupation leads to associations which have an obvious explanation: motor vehicle accidents rank high for drivers of road goods vehicles, drivers of agricultural machinery, bus, coach and taxi drivers and commercial

travellers. Women (like men) occupied on trains, boats and aircraft have higher incidences of other traffic accidents. Window cleaners have high rates

for falls; and mining, forestry and general labourers have high rates for accidental deaths other than transport accidents, poisoning and falls. In most instances the published statistics of deaths by cause do not specify whether the accidental death was associated with work or not. There is, however, at least one exception: the recently released reconstruction of death statistics of Russia for 1965-1993 separates accidental deaths associated with work from other accidental deaths (Mesle et al., 1996). Unfortunately, there is no distribution of accidental deaths by occupation of the deceased person available.

#### Table 4.7

Table 4.7 presents estimates of mortality from work related accidents in Russia for the period 1983-87. Mortality rates for women appear to be about one tenth or less of those for men in almost all categories of accidents. It seems that women in Russia were employed at jobs that are less exposed to the risk of accidental death. Women are less also likely to be killed in an accident not related to work than men (Table 4.8), although the difference is not as great as in the work-related situations.

#### Table 4.8

Another well known cause of work-related health impairment is stress. Levels of stress and dissatisfaction among workers in different occupations vary; very high levels of stress have been found among the health professionals, and in particular among women. In this instance, the source of stress was sometimes the conflict between career and personal life (Firth-Cozens, 1990). One of the extreme manifestations of the effects of stress is suicide. There is only limited information available about suicide among men and women in various occupations; in addition, because of the relatively small number of cases, random variations of the indicators may be quite considerable.

A recent study of suicide by occupation in England and Wales by Kelly et al. (1995) used proportional mortality ratios (PMR) as an indication of how the incidence of suicide in a particular occupation differs from that of the whole population (see the definition of PMR earlier in this paper). Suicides of women aged 16-59 in ten occupations with the highest PMRs as found by the study are set out in Table 4.9.

#### Table 4.9

The small number of suicides in some of the categories (veterinarians, inspectors, physiotherapists, ambulance persons, teachers) necessitates treating the PMRs with caution. The high risk occupations appear to include those with an easy access to drugs as a means of committing suicide (veterinarians, medical practitioners, nurses, pharmacists).

## Conclusions

There are many problems encountered in the study of occupational mortality in general and of women in particular. In addition to the lack of availability of data and poor comparability of

information from the two sources - censuses and death registers - described and illustrated above, a few additional caveats must be mentioned.

Mortality is not the best indicator of occupational health risk. A worker who displays symptoms of illness that may be related to the working conditions and environment is often transferred to less exposed, lighter or altogether different work. If he/she dies, the occupation registered will be the more recent one, not the occupation which may have been related to his/her illness and, eventually, death.

Another problem in studying the occupational mortality of women in particular is their tendency to move in and out of occupations, especially during various stages of the family life cycle, and thus to have less exposure to any one occupation. Many women leave the workforce when they start a family, and return - often several years later - when, for instance, the youngest child starts going to school or leaves home. In other cases family breakdown by divorce may be the reason for returning to the workforce. Very often the woman returning to the workforce after years at home finds that her former qualifications and skills may not be now recognised and that she may have to accept a lower quality (less paying) job.

Some part of the mortality difference between working and nonworking men and women is due to the healthy worker effect those with jobs (including those actively seeking job) are, on average, healthier than those without. The effect appears to be stronger for women than for men. In particular, married women who suffer from chronic illness are less likely to be in gainful employment than healthy women. Since the mortality of the sick is higher than of the healthy, selection may have an effect on mortality differentials.

In the preceding sections the great advantages of longitudinal studies of occupational mortality and differentials, and of the practice of record linking were pointed out. It is rather regrettable that such studies as the English OPCS-LS are not replicated in other countries. Admittedly, record linkage raises questions about the confidentiality of the information collected for one purpose and, by data linking, used for another goal. This is frequently a stumbling block which prevents the introduction of record linkage in many countries - Australia being one of them - despite the lack of evidence that the assurances given to the public about protection of confidentiality by the data processing authorities have ever been violated.

**Table 4.1 Proportion of working women whose occupation was inadequately described or not stated. Australia, 1991 census and deaths registered in 1990-1992**

Source	15-24	25-34	35-54	55+	Total
Census 1991	6.4	5.8	6.4	13.0	6.7
Deaths 1990-1992	37.0	37.3	43.9	12.7	19.6

Source: ABS, n.d.

**Table 4.2 Comparison of stated occupational category of women, 1971 Census and death registration: England and Wales**

	Death registration		Total
	% with occupation stated	% with no occupation stated	
<b>1971 Census</b>			
percentage with occupation stated	15	18	33
percentage with no occupation stated	6	61	67
Total	21	79	100

Source: McDowall, 1983

**Table 4.3 Mortality of women by occupation. Australia 1990-1992 Average annual mortality rates per 1,000 women**

Occupation	15-24	25-34	35-54	55+	Total
Managers/administrators	0.65	0.34	1.10	34.58	5.58
Professionals	0.39	0.41	1.22	64.78	4.06
Para-professionals	0.44	0.58	1.45	78.69	5.05
Tradespersons	0.60	0.66	1.35	175.66	11.71
Clerks	0.29	0.40	0.89	32.00	2.58
Sales and personal service workers	0.26	0.33	0.63	33.35	1.80
Plant and machine operators and drivers	0.28	0.22	0.92	83.78	6.05
Labourers and related workers	0.46	0.49	0.78	33.90	3.56
<i>Inadequately described and not stated</i>	<i>2.84</i>	<i>4.05</i>	<i>11.07</i>	<i>44.70</i>	<i>12.33</i>

Source: ABS,n.d.

**Table 4.4. Adjusted mortality rates by occupation and age (rates per 1,000 women)  
Australia 1990-1992**

<b>occupational category</b>	15-24	25-34	35-54	55+	Total
managers & administrators	<b>0.97</b>	0.52	1.84	34.	6.51
professionals	0.58	0.62	2.04	65.	4.74
para-professionals	0.65	0.87	<b>2.42</b>	79.	5.89
tradespersons	0.90	<b>0.99</b>	2.26	<b>178.1</b>	<b>13.66</b>
clerks	0.43	0.61	1.50	32.45	3.00
sales & personal services	0.38	0.50	<i>1.06</i>	33.82	2.10
plant & machine operators & drivers	0.35	0.33	1.55	84.95	7.06
labourers & related workers	0.68	0.73	1.30	34.37	4.15
all	0.49	0.63	1.62	46.	4.22

**bold** = maximum value; *italics* = minimum value

Source: ABS, n.d.

**Table 4.5 Standardised Mortality Ratios of women in the workforce in age range 15-54 years during the period 1990-1992: Australia**

<b>occupational category</b>	<b>total deaths</b>		<b>SMR</b>	<b>95% confidence</b>
	expected	observed		<b>interval</b>
managers & administrators	828.2	928.4	112.1	92.6-107.4
professionals	1327.8	1598.7	120.4	94.0-106.0
para-professionals	720.8	1055.4	146.4	91.0-109.0
tradespersons	317.6	474.9	149.5	86.3-113.7
clerks	2621.9	2430.7	92.7	96.2-103.8
sales & personal services	1756.8	1239.2	70.5	96.0-104.0
plant & machine operators & drivers	267.8	235.0	87.7	88.6-111.4
labourers & related workers	1153.9	1032.8	89.5	94.4-105.4
all	8995.0	8995.0	100.0	

Source: ABS, n.d.

**Table 4.6 Standardised mortality ratios (SMR) for women by social class, occupation and selected causes of death. England and Wales, 1971-1985.**

Age in 1971	Period	Social Class					Observed deaths	
		All	I&II	IIIN	IIIM	IV&V		Other
<b>Ischaemic heart disease ICD-9 410-414</b>								
35-44	1971-5	100	64	58	75	143	242	15
	1976-80	100	44	48	13	107	0	37
	1981-5	100	73	82	86	125	75	53
observed deaths			20	8	46	29	2	105
45-59	1971-5	100	52	65	115	104	139	180
	1976-80	100	61	69	107	133	109	383
	1981-5	100	78	78	105	118	124	534
observed deaths			185	92	423	340	57	1097
<b>Cerebrovascular disease (ICD-9 530-438)</b>								
35-44	1971-5	100	85	0	105	171	0	17
	1976-80	100	35	96	109	144	403	31
	1981-5	100	42	0	134	158	128	34
observed deaths			11	3	38	26	4	82
45-59	1971-5	100	68	53	103	108	161	95
	1976-80	100	71	94	86	96	89	139
	1981-5	100	69	99	104	118	87	216
observed deaths			82	48	167	132	21	450
<b>Malignant neoplasm of breast (ICD-9 174)</b>								
35-44	1971-5	100	91	125	130	31	128	31
	1976-80	100	60	164	114	96	113	72
	1981-5	100	115	132	86	98	109	82
observed deaths			46	27	75	32	5	185
45-59	1971-5	100	109	123	84	93	93	130
	1976-80	100	97	125	102	65	122	164
	1981-5	100	108	65	116	73	83	160
observed deaths			123	54	172	87	18	454

Source: Devis (1993)

**Table 4.7 Work related accidents: Russia 1983-1987**  
(average annual rates per 100,000)

code	description	Number		Mortality rate	
		females	males	females	males
CD-162	motor vehicle accidents	974	12803	0.53	6.58
CD-164	other traffic accidents	648	5266	0.35	2.71
CD-167	accidental poisoning	156	1576	0.08	0.81
CD-170	accidental fall	343	4159	0.19	2.14
CD-172	accidents due to fire	307	2367	0.17	1.22
CD-174	drowning	95	1810	0.05	0.93
CD-177	by firearms	12	343	0.01	0.18
CD-179	by electric current	191	4891	0.10	2.52
CD-180	other principally due to work	822	10427	0.45	5.36
CD-182	other related to work	872	10080	0.47	5.18
	all work related accidents	4420	53722	2.41	29.24

Source: Mesle et al., 1996

**Table 4.8 Mortality from accidents not related to work.**  
**Russia 1983-1987**

code	description	Number (a)		Mortality rate (b)	
		males	females	males	females
CD-160	motor vehicle accidents	44508	10157	17.82	3.34
CD-161	involving pedestrian	35757	16143	14.31	5.31
CD-163	other traffic accidents	23896	8535	9.57	2.81
CD-165	alcohol poisoning	80454	23550	32.20	7.75
CD-166	other accidental poisoning	45211	17157	18.10	5.64
CD-169	accidental fall	20476	11746	8.20	3.86
CD-171	accidents due to fire	14086	7317	5.64	2.41
CD-173	drowning	57849	10372	23.16	3.41
CD-175	inhalation of a foreign object	19475	6549	7.80	2.15
CD-176	accidents by firearms	1619	159	0.65	0.05
CD-178	accidents by electrical current	6511	1359	2.61	0.45
CD-168+CD181	other accidents	58598	24035	23.46	7.91
	all accidents unrelated to work	408440	137079	163.49	45.09

(a) total deaths 1983-1987

(b) average annual death rate per 100,000 population aged 15+ years

Source: Mesle et al., 1996

**Table 4.9 Proportional Mortality Ratios (PMR) of women aged 16-59 in the ten occupational categories with the highest incidence of suicide. England and Wales, 1982-87 and 1988-92.**

Occupation	Number of suicides		PMR	
	1982-87	1988-92	1982-87	1988-92
government inspectors (a)	4	3	458	365
veterinarians	2	3	415	387
medical practitioners	27	25	347	322
pharmacists	10	4	270	141
physiotherapists	9	3	248	99
ambulance women	2	3	234	402
health professionals n.e.c. (b)	22	7	220	81
literary and artistic professions	51	42	173	112
teachers in higher education	16	7	171	74
nurses	286	247	149	154
all occupations	6,536	4,651	n/a	n/a

(a) includes environmental health officers, building inspectors, statutory inspectors (factories, public utilities, trading standards, Customs & Excise officers, immigration officers).

(b) n.e.c. = not elsewhere classified; this group includes dispensing opticians, chiropodists, medical technicians, dental auxiliaries and therapists.

Source: Kelly et al.(1995)

## 5. OCCUPATIONAL MORBIDITY

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### Introduction

For reasons already discussed, the occupational health problems of women have been frequently unquantified and largely invisible. As a result, this chapter is inevitably impressionistic; it cannot present a comprehensive report of the occupational health hazards to which women are subject, neither can it document the extent of any particular health problems that are described here. Nevertheless, the conclusion of a World Bank study of women in India (1996) that 'Indian women encounter health hazards in virtually all their occupations' is likely to have general application.

Another World Bank report (1995) described Indonesia's weak enforcement of labour laws as resulting in less than desirable conditions for working women - violations of labour contracts, exposure to dangerous substances, high noise levels, physically exhausting and repetitious tasks, and vulnerability to sexual harassment especially in the rapidly-expanding industrial sector. In the informal sector, long working hours and unhealthy working conditions were noted.

Such data as have been collected suggest that a similar statement could be made about occupational health hazards for women across the less developed countries, and that women in the wealthier nations still face substantial hazards

The risks to health which women face, even when occupations which women undertake are superficially similar, are not necessarily identical and of equal significance everywhere. The specific circumstances of women's work in particular countries and cultures mean that women are not necessarily undertaking identical tasks, and may not be exposed to similar types of risks. Thus, for example, one study of gender and work (Sirisambhand et al., 1987) in Thai villages examined the contribution of men and women to the cultivation of castor beans, cotton and vegetables. The study found that while men and women were equally likely to undertake insecticide spraying of cotton, women undertook a lesser share of the spraying of vegetables. Fertiliser was applied more by women than men to both cotton and vegetables. In another study, of rice-growing in the Philippines (Banson-Bautista and Dungo, 1987) women were not reported to apply fertiliser at all.

According to a WHO report on women's health in Central and Eastern Europe (1994), occupational diseases develop mainly in women between the ages of 31 and 50, with between 11 and 20 years of work of exposure to the particular hazard. Future rates of cancers, skin diseases, stress-related conditions and diseases of the muscles and joints depend on actions - or neglect - now.

## Interactive health hazards

The same report emphasises the interactive and synergistic nature of health hazards. Thus poor sanitation, inadequate

water supply and garbage disposal, heavy indoor air pollution and crowding create serious and interactive health risks to the poor. Indoor air pollution contributes to acute respiratory diseases, chronic lung disease, cancer and adverse pregnancy outcomes, while crowding increases respiratory infections and frequency of personal violence.

Similarly, in Chile, a survey (Diaz Barr et al., 1994) of female fruit pickers, and workers in the fisheries and garment industries - all doing seasonal, short-term work found three main causes of health problems: workstation design (eg posture, ergonomics); noise, air and surface pollution; stress and fatigue. Varicose veins, swollen legs and feet, and back, neck and shoulder pain were the most common complaints, especially from the first two industries in which women stand all day and have few breaks to stretch. The effects were compounded in women who had small children and a heavy housework burden.

For convenience, the following discussion of women's occupational morbidity categorises the conditions into various groups. However, it should continually be remembered that many women will be exposed to multiple health risks whose impact should not be considered in isolation.

## The epidemiology of occupational morbidity

One of the few countries for which there are reasonably comprehensive statistics, at least for women in the paid workforce, is the former Federal Republic of Germany, which has a long tradition of State-supported health insurance.

### Table 5.1

According to Table 5.1, German women are most likely to claim sickness leave from work for respiratory diseases, followed by leave due to musculo-skeletal disorders. There are notable differences, however, in the duration of illhealth between the two conditions, with musculo-skeletal disorders resulting in an average absence from work of 26 days, compared with 10 days for those suffering with respiratory problems. The impact of musculoskeletal disorders can also be assessed from the women who take early retirement from work because of continuing ill-health.

### Table 5.2

Nearly 31 per cent of all such early retirements result from health impairment due to musculo-skeletal problems. Psychiatric problems account for a further fifth of early retirements amongst German women, with diseases of the circulatory system (including strokes and heart attacks) in third place, closely followed by neoplasms. While it is not possible to identify any specific occupational contribution to these conditions, it seems probable that the individual's work is a factor in the first two -musculo-skeletal and psychiatric problems - at least.

## Infectious and parasitic diseases

In India, most women are employed in the informal sector and the majority - poor rural women - work in agriculture. Long hours spent in water while weeding and transplanting rice, which here is essentially a female occupation, increases susceptibility to vaginal infections, infectious and parasitic diseases, and insect bites. Rural women in Pakistan are also described (WHO, nd) as being affected by parasitic and other infections, tetanus and heat exhaustion.

### **Toxic chemicals and carcinogens**

The WHO report on women's health in Eastern and Central Europe identifies exposure to pesticides in agricultural work as perhaps the greatest occupational health risk to women, because of their preponderance in labour-intensive manual work in the fields and hence exposure to heavy doses of pesticides in the soil and surface water as well as the products they handle. Direct and concentrated exposure to dangerous chemicals while picking and processing crops presents serious threats to the women themselves and to their foetuses.

A cultural tradition of using smoky coal in domestic cooking in parts of China is believed to contribute to very high rates of lung cancer amongst women in those communities (Mumford, 1987).

Industries which process coir, jute and cashew nuts, or involve cotton, tea or rubber, as well as the textile industry, expose women to toxic chemicals and physical stress.

Limiting her study to industries employing at least 25000 women in the United States in 1992, Stellman (1994) identified every industry in which the more than 5000 toxic substances contained in the US National Library of Medicine's Hazardous Substances Data Base were used. The extracted data set was also used to determine industries in which known and suspected human carcinogens identified by the International Agency for Cancer Research could be found, and some of their industrial uses. She depicted a wide range of occupations and industries in which women might have been exposed to carcinogens and concluded that 'women are, indeed, employed in hazardous occupations'.

### **Respiratory problems**

One study of rural kitchens in India found concentrations of pollutants averaging 100 times the levels acceptable to WHO; in another Indian study, women's exposure to cooking fumes was calculated as equivalent to smoking 20 packs of cigarettes a day (World Bank, 1996). Health impairments for the rural women of Pakistan are also identified as including respiratory infections and tuberculosis, linked to smoke and dust levels. Indian women home workers who earn an income rolling bidis (a form of local cigarette) are exposed to tobacco dust and susceptible to problems which include tuberculosis and asthma as well as other allergies, backache and rheumatic complaints.

Domestic smoke, combined with the inhalation of silica particles whilst hand-grinding maize between rocks, has been linked (Grobbelaar and Bateman, 1991) to a form of pneumoconiosis observed in rural Southern African women. The condition, termed 'Transkei silicosis', is seen amongst women in their fifth decade, after many years of exposure. The total respirable dust concentrations during maize

grinding approached those of the dustiest mining activities and often exceeded the recommended industrial time-weighted averages. In addition, average smoke concentrations during cooking far exceeded those permitted in industry.

Silicosis has also been diagnosed in Sweden amongst women working in potteries (Gerhardsson and Ahlmark, 1985). As another WHO report points out (Sims, 1994), many women in the developing countries make their own pots or are engaged in ceramics work and pottery industries. The designation of silicosis as a 'male disease', coupled with the long latency period, enhances the risk of it remaining undiagnosed in women, especially where the women are rural and living in developing countries.

Ninety-eight per cent of all meat wrappers in the meat processing and packing industry in the USA in the 1970s were women. Prevalent amongst them was 'meat wrappers asthma', as well as the more obvious risks of accidents and animal transmitted infections (WOHRC, 1979)

### **Skin allergies and diseases**

Skin allergies and diseases are reported amongst the Pakistani women of Sindh who work as fish processors, and as hairdressers, beauticians, brickmakers and fieldworkers. Similar problems were also reported by Chilean fisheries workers and fruit-pickers.

### **Musculo-skeletal disorders**

Fruit pickers in Chile report repetitive motion injury and associated tendonitis. Indian women working in agriculture suffer arthritis and rheumatism, with back pain and osteoarthritic complaints also common. Women in the carpet industry suffer ankyloses and chronic postural defects which may result in difficult pregnancies or even sterility. Indian women workers in the garment and embroidery industry complain of chronic back pain and eye problems due to poor workplace conditions and lighting.

Australian Worker's Compensation data (Worksafe Australia, 1994) show that over 40 per cent of claims by women came from the community services sector, which includes the health industry, education, museum and library services as well as welfare and religious institutions. The health industry was responsible for more than three fifths of the cases in the community services sector, with nurses and ward helpers being the most affected occupational groups. Three out of every five cases involved sprains or strains, especially to the back or arms.

Women in Bulgaria, undertaking heavy manual work involving repetitive monotonous motions with high force demands or sustained static contractions were found (Draganova and Kamenova, 1996) to be vulnerable to musculo-skeletal diseases - tendonitis/tenosynovitis, neurovascular dystonia and neck tension syndrome. In the garment industry in Canada, musculo-skeletal problems were associated with duration of employment in piecework (Messing, 1996).

One prospective study of packers in a chocolate factory (Veiersted and Westgaard, 1993) found that 17 out of 30 developed clearly indicated pain of the trapezoid muscle within the first year of work. On average, it took from 23 weeks for the illness to progress from identified symptoms to clinically confirmed trapezius myalgia.

## **Gynaecological problems**

The women of Kibweze, a marginal area of Kenya, have been reported (Ferguson, 1986) as more susceptible than men to chronic disabilities between the ages of 20 and 39. Gynaecological conditions, and general body pains, were the major complaints. Women in that age group make more than half of all trips undertaken by the community to collect water, on average carrying 20-25 kg loads over 3.5 kilometres once or two times each day on rough ground in temperatures of up to 40 degrees C. Many are pregnant or breastfeeding.

Long working hours, anaemia, malnutrition and frequent childbearing exacerbate the occupational health problems in many countries. Indian women, for example, typically work until late in their pregnancies, with no special provisions for rest or food. Water in Pakistan has frequently to be carried long distances over difficult terrain and this is linked to increased rates of miscarriage. Pregnant farmworkers in China face traditional pressures which mean they may continue to work in the fields when their medical condition or stage of pregnancy make this unwise (Yan Renying et al, na).

## **Accidents and injuries**

Among Indian women aged 18-39 hospitalised for fractures, most resulted from work-related accidents. Authors suggest various contributory factors, including: work done by young girls which involves stooping or carrying heavy loads (detrimental to bone integrity); early and continuous nutritional deprivation contributing to osteoporosis; and work carried out by adult women which requires sitting, standing or stooping for long periods of time and that is dangerous, or badly paid or both. In Pakistan, rural women risk accidental injuries and snakebite.

Falls, burns and electrical shocks combine to make the home the most common place of accidents in developed as well as developing countries. Vulnerability to electrocution may be particularly high in developing country neighbourhoods where bundles of electric cables are often exposed, or where electricity is illegally diverted for use. In countries where cooking is carried out on an open fire, women are especially at risk of burns (Kane, 1985). In addition, muscle and bone injuries including slipped discs and torn ligaments from heavy loads often result from household work and childcare.

A further type of injury also affects women in their everyday work especially in countries like Cambodia where, as the result of conflict, there is a shortage of able-bodied men to labour in the fields. In Cambodia alone it is estimated by the Red Cross that over 300 people are injured or killed by landmines each month. Landmines have the capacity to kill or maim long after war ends: in Poland, 15 million mines laid during World War II were cleared between 1945 and 1977, but over the same period 4000 Poles were killed and 9000 maimed by mines.

## **Exhaustion and stress**

The propensity to suffer occupation-related accident or injury is affected not only by the inherent risks of the work itself, but by the individual's ability to control or avoid those risks; an ability which may well be reduced by factors like stress or exhaustion. A study of health and work in Barcelona, Spain (Ajuntament de Barcelona, 1992) found that the average number of hours of

sleep amongst workers was 6.5 hours, with no significant differences between men and women or by age. However, when various occupational groupings were analysed, workers in the hotel and domestic service industries showed higher percentages of people who slept less than seven hours; amongst women the proportion sleep-deprived rose to almost two-fifths.

Although no serious long-term health effects were found amongst women electronic shift-workers in Singapore, certain types of shift worker reported sleep problems, tiredness, indigestion and headaches. These women were involved in 12-hour rotating, and 8-hour weekly rotating, shifts (Chan, 1994).

### **Occupational risks in the home**

Within the home, a variety of household products, from soaps and detergents to paint removers, can be the cause of dermatitis or allergies. Common cleaning substances, such as bleaches, ammonia and various cleaning fluids containing solvents, may cause irritation of eyes and lungs, give off poisonous gases when combined with each other, and - in the case of cleaning solvents - are suspected carcinogens. Household pesticides can result in serious poisoning and nerve damage. Repetitive injuries like tenosynovitis and bursitis are frequent in the home, too: indeed, bursitis used to be described as 'housemaid's knee' (WOHRC, 1979).

Women domestic servants are frequently unskilled and temporary or casual workers; in some countries, they include a high proportion of immigrants. Poor pay, a heavy workload which demands considerable flexibility, and long working hours often intensify the health hazards. Health impairments include damage to the spine, shoulder and arms as well as skin problems (Spannhake and Elsner, 1991).

## Violence against women

Physical violence is a major contributor to women's health risks, whether within the home or in a formal workplace. A recent Australian survey of women's safety (ABS, 1996) discovered a significantly higher incidence of violence and sexual assault upon women than was previously thought. More than seven in every 100 women had experienced some form of violence during the preceding 12 months. Amongst those women physically assaulted by a man who was not their partner, 35.4 per cent were attacked at home and 16.4 per cent at work. Comparable figures for sexual assault by a non-partner were 55.5 attacked at home and 8.2 per cent at work.

Not husbands, or even men, alone are responsible for violence towards women: mothers-in-law or other relatives may also participate in the abuse, especially where the woman marries out of her natal family. The physical suffering, and the misery, experienced by so many women across different cultures has been documented (?? 1996) as resulting in substance abuse, eating and sleeping disorders, physical trauma/soreness/bruising, traumatised or unwanted pregnancies, sexually transmitted diseases and skeletal muscle tension, as well as suicide. Physical violence may culminate in murder, as exemplified by the burning of infertile or otherwise 'unsatisfactory' spouses in India.

### Case Study: Vietnam

*Martha Morrow, Nguyen Thi Thom, Jo-Anne Rayner Smith*

Most Vietnamese women work in agriculture, and consequently are exposed to particular hardships and risks. Long working hours, heavy manual labour in the absence of even intermediate technology and inadequate nutrition all take a toll on the health of rural women over the lifespan. Studies have found that rural women report increasing levels of illhealth as they age. Women in agriculture are exposed to contaminants from fertilisers and pesticides, musculo-skeletal strains of heavy manual labour, gynaecological infections from standing in water, malaria, trachoma and other eye diseases, skin and internal diseases.

Studies in agricultural and tea growing areas found high levels of improper storage and excessive concentrations of pesticides, and evidence of pesticide poisoning in up to 57.7 per cent of screened workers. Accidental injury is common, with women accounting for 85 per cent of those injured doing farming work in Nam Ninh district in 1986; the proportion in 1961 was only 75.5 per cent. Frequent childbirth is the norm in rural areas; it is reported that 75 - 80 per cent of women continue to work as usual until the time of birth.

Women employed as road builders and in construction also undertake physically taxing and sometimes dangerous work. Exposure to toxic fumes and melanosis

*(continued next page)*

Case Study: Vietnam (*continued*)

are common among asphaltting workers. A study of tar sprayers working in the Ministry of Transport and Communication found worksite temperatures were 4-5 degrees C. higher than the open air and hydrocarbide gases were 2-3 times higher than accepted standards. Over 30 per cent of the women had irregular periods and 23 per cent had abortion with sepsis or premature deliveries. Nearly half had darkened skin disease.

Work in industry is accompanied by a number of risks. A review of conditions between 1984 and 1994 carried out by the National Institute of Occupational and Environmental Health found inadequate systems for ventilation, control of toxic fumes and temperature in workplaces for both males and females. Workers often sweated excessively (in microclimates 3-5 degrees C. higher than allowed) and ate insufficiently to cover calorie expenditure. Those working in cold storage were likely to suffer from digestive, circulatory, skin and arthritic conditions. Others were exposed to dangerous chemicals (between 2 and 100 times recommended limits) and dust with a high silica content, thus risking silicosis. Noise levels exceeding the threshold limit (above 90 dBA at several worksites) caused headaches, increased accidents, illnesses and hearing loss. Employees in older textile plants were exposed to high levels of respirable dust (up to 83 per cent of total dust concentrations). A listing of occupational diseases affecting women included silicosis (chemical production), lead contamination (battery production), benzene contamination (paints, plastics and printing), hearing loss, skin discolouration, respiratory disease, miscarriage and birth defects.

Other work environments were found to have particular risks. For example, a study on conditions for microcomputer workers revealed excessive levels of carbon dioxide and noise, together with sensori-nervous and musculo-skeletal strains. Those working in radiological units (sex not specified, but likely to include women) were sometimes exposed to excessive radiation.

A survey of women working as weavers found poor working environments, with excessive noise, heat and dust; high work intensity and repetitive movements were probably related to early retirement of these workers, who lose their capacity within 15 to 20 years.

Women undertaking routine household chores are also potentially at risk. Poorly ventilated kitchens, where coal and wood-smoke are the norm, are a worrying source of inhaled particles for women.

*from: Women's Health Profile: Vietnam WHO Regional Office for the Western Pacific. Manila, 1995*

**Table 5.1 Sickness leave of employed women, 1993 (Federal Association of Company Health Insurance Funds)**

	frequency (per 1,000 insured)	average duration in days
all cases	1,372.4	22.1
musculo-skeletal disorders	211.9	26.2
cardiovascular diseases	63.3	22.1
respiratory diseases	421.5	10.0
digestive system diseases	179.4	9.0
psychiatric disorders	37.0	33.3

Source: Statistics of the Federation of German Pension Insurance Companies and of the Federal Institute of Occupational Safety and Health

**Table 5.2 Early retirement due to reduced earning capacity following illness**

Disease	Number	Percent
infective and parasitic	694	0.64
neoplasms	13,532	12.44
endocrine, nutrition, immune system	3,136	2.88
blood and bloodforming organs	190	0.17
psychiatric diseases	24,055	22.11
nervous system	7,210	6.63
circulatory system	14,568	13.39
respiratory system	3,463	3.18
digestive system	2,418	2.22
genito-urinary system	1,105	1.02
complications of pregnancy	31	0.03
skin	459	0.42
skeleto-muscular system	32,710	30.07
congenital anomalies	905	0.83
diseases originating in perinatal period	40	0.04
inadequately described conditions	2,044	1.88
injuries and poisonings	2,118	1.95
undiagnosed cases	119	0.11
total	108,797	100.00

Source: VDR Statistik, 1995

## 6. PAID WORK, GENDER AND HEALTH

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### Introduction

The relative health benefits for women of paid work and traditional roles have been the focus of much controversy. The impact of paid work on women's health - especially mental health and well-being - has been, and continues to be, extensively studied; the lack of consensus in research findings reflects methodological problems (such as heterogeneity of sample groups) and, often, simplistic research design. The comparison of women with and without dependent children, for example, often assumes that the burden of childcare is the same whether there is one child or six siblings, and whether the children are toddlers or adolescents (Kane, 1991).

A further difficulty is that of disentangling the various strands - behavioural, environmental, socio-economic and so on - which contribute to individual health. In a population study of the adult Norwegian population, Dahl (1994) found that among socioeconomic variables affecting health, occupational status stood out as the most important predictor of ill health. However, the occupational class of women's husbands significantly and universally correlated to ill health more than when women were classified according to their own occupation. This suggests that women's ill health is more strongly related to their off-work living conditions than to their working conditions and that their living conditions still depend on their husband's class.

### Marriage, work and health

Marriage has long been recognised to have a protective effect upon the health - including mental health - of men, while both community-based and treatment studies clearly showed that more married women than married men had mental ill-health problems. Gove and Tudor (1973) argued that because of the roles women occupy in western society, women are more likely than men to have emotional problems.

Major reasons proposed were that: 1) men have two sources of gratification - work and family - whereas women have only one - family; 2) raising children and keeping house is frustrating; 3) the role of housewife is relatively unstructured and invisible; 4) when a married woman works she is in a less satisfactory position than the married male; 5) expectations confronting women are unclear and diffuse.

In a population study of mid-aged Massachusetts women followed for five years, McKinlay et al (1990) found that self-assessed health, restricted activity and new chronic conditions were related primarily to employment status and only secondarily to stress caused by spouse. Working women were less likely to report worse health, restricted activity days or new chronic

conditions. Among women who were not employed, those reporting worse health were most often those whose husbands were a source of stress.

In a UK community-based study of 259 respondents, Cochrane and Stopes-Roe (1981) found that the lack of paid employment for women outside the home was a major predictor of symptom levels, especially depression ( $p < 0.01$ ). These results are compatible with the suggestion of Brown and Harris (1978) and others that employment affords a protection against depression for women in much the same way that it does for men. Marital status was not related to psychological symptom scores on any of the scales in this study. The study also found higher symptom scores for women whose husbands were unemployed.

In a US population study, Ross and Bird (1994) found that housework increased women's depression levels but did not appear to affect depression levels of men. However women's level of activity varied between undertaking half and all of the housework while men's varied between none and half of the total housework. Thus it may not have been that housework is in itself intrinsically ungratifying but that a lack of shared responsibility increased the sense of inequity. The study found that shared housework, which meant less than 60 per cent, was not psychologically damaging and may have the health benefits of all types of physical activity.

Ross et al (1983) tested the hypothesis that in societies which value the family and the woman's role in the home, psychological distress levels of married men and women will be more similar. These authors used a questionnaire to compare an Anglo-American community with a Mexican community. The gap in psychological distress levels of married men and women was less in Mexican culture than in Anglo culture. However education and the wife's participation in the labour force affected marital satisfaction, which in turn affected the level of psychological distress. Education increased marital satisfaction whereas paid employment decreased it. The wife's employment decreased her psychological distress directly in both cultures.

Physical health as well as mental well-being appear to be related to paid employment. A population sample from Germany found that women who gave up employment and became full time homemakers had adverse changes to cholesterol. Thus employment may exert a beneficial influence on coronary risk in women (Haertel et al, 1992). These findings were also confirmed in USA studies (Kritz-Silverstein et al, 1992). The longitudinal US national health and nutrition prospective survey (Reviere & Eberstein, 1992) found that women who left the labour force and women who were homemakers were at relatively high risk of coronary disease.

### **Differentials in paid employment.**

In a US population study, Ross and Bird (1994) found that men were significantly more likely to be employed than women and if employed, to work full time, to have higher household income and less economic hardship and to do a significantly lower proportion of household labour. Men's objective advantages in paid work and households were reflected in their subjective experience. Men found their work significantly more rewarding than did women and had significantly lower distress levels than women.

These indicators of gender inequality and its social and psychological correlates negatively affected perceived health. Together, sex differences in labour and in leisure time physical activity explained a large part of women's worse health over the life course. The authors concluded that if women had the same levels of equality at home and at work and of leisure time physical activity as men, their perceived health would equal and then surpass men's by late middle-age.

However, a wide variety of studies show significant mental and physical health differences that favour employed versus non-employed women (Barouche et al 1987). Contrary to the belief that the more high powered a woman's career, the more dangerous it is to her well-being, the advantages are greater for women in occupations of higher status. Although being employed is beneficial even to women in low-level jobs, viewing one's work as a career rather than a job is associated with greater work satisfaction and less role conflict. The workplace appears more often than not to offer such benefit as challenge, control, structure, positive feedback, and self esteem and to provide a valued set of social ties. Specific conditions may increase the stressfulness of employment and reduce its positive effects. These include negative job conditions and difficult family situations (very young children, large number of children, being a single parent, primary responsibility for family work).

### **Motherhood and employment**

Russo (1990) in her review noted that parenthood, particularly when children are young, increases the symptoms of psychological distress for women whether or not they work outside the home and these symptoms appear to increase with the number of children living in the home. Whether or not employment brings mental health costs or benefits to women depends substantially on husband's attitudes, and satisfaction with child care. For employed mothers, if childcare was accessible and husbands shared in it, depression rates were low. In contrast, employed mothers without accessible child care and with sole responsibility for childcare had extremely high depression levels. For non-employed wives, children increased depression levels (Ross & Mirowsky 1988).

A Swedish study of 1500 male and female white collar workers aged 30-60 found that workload increased considerably more for women when the number of children increased. Women could reduce their workload to levels exhibited by men by working part time but only if the number of children did not exceed two. This enormous workload for women did not last throughout life but peaked between the ages of 30 and 40 years when demands from the family were at their greatest and career development was critical. After the age of 40, life became more organised, the total workload dropped as demands from the family decreased, there was less conflict between professional and family duties and women felt more established in their profession.

There was also a difference in time use. For men, use of time can be divided into orderly, solid, large, distinct time blocks for sleep, work outside the home, leisure and work at home. Even the time that men spend with children generally has a distinct block. In contrast, women tend to take a zigzag pattern of everyday activities with frequent interruptions. This especially applies for women with young children.

## Multiple roles and health

These differing patterns are evident in neuroendocrine correlates of stress. For example, a study undertaken at the Volvo manufacturing plant in Sweden, showed that during the working day the stress levels of both male and female managers were elevated to the same degree. However, after the day at work there was dramatic divergence in stress levels; male managers relaxed and the adrenalin levels decreased, whereas female managers exhibited increased levels of noradrenalin. In addition, the study showed that lunch times were more relaxing for male managers than for female managers. This finding that women managers stay in 'high gear' may be a warning signal of possible long-term health consequences. Changing work patterns had meant that women have adopted similar levels of stress to those of their male counterparts while retaining sensitivity to stress induced by traditional female areas of responsibility. Women unwind more slowly than men after work, partly due to the unequal division of labour at home.

Frankenhauser (1994) too notes that with changing gender roles, there has been a convergence of attitudes of women and men to demands in work situation. Women entering traditionally male professional domains (engineers, lawyers, bus drivers) exhibit stress responses previously considered to be typical of men only. As well, in situations involving female areas of responsibility (eg. taking a child to hospital) mothers experienced greater stress than fathers. Thus, women's double role may result in double stress.

Underlying the theory that multiple roles cause stress was a 'scarcity hypothesis': in other words, the expectation that roles drain energy and that women would have insufficient energy for greedy family roles and paid employment. A competing hypothesis is the 'expansion hypothesis' which emphasises the privileges of multiple roles in terms of the effects of rewards such as self-esteem, recognition, prestige and financial remuneration (Barnett 1993). Other research supports the expansion hypothesis for women as well as men and reports a positive association between the number of roles a person (woman or man) occupies and psychological well-being (Thoits 1983). Numerous studies show positive effects of multiple role involvement on women's and men's physical and mental well-being. Concern about negative effects of multiple roles is abating because of increasing evidence that for women as well as men, the more roles one occupies, the greater the chances of being physically healthier, more satisfied with life and less depressed.

Role quality is now thought to be a more significant predictor of stress and well-being than is role occupancy per se. Some roles and role combinations may be more beneficial than others (Barnett 1993). Rosenfield (1989) proposed that role overload causes greater symptoms for the same reasons as low power: through lowering an individual's sense of personal control. Thus employment may trade one source of low control for another. Personal control may also explain differences in symptomatology by social class.

Parry and Shapiro (1986) found that in the case of working class women, working outside the home was associated with less depression where there was good social support, but more depression where there was not good support.

Women's family roles, generally the role of mother, are both low in control and high in demand - that is, high strain roles. Indeed, the role of mother may be women's primary source of stress, and work roles may buffer family stress. Only the role of mother (not that of wife or paid worker) was related to the experience of role strain - that is, role overload and role conflict (Barnett & Baruch 1985).

### **Unemployment.**

Unemployment has been shown to be a contributing factor in increased rates of suicide among women, as well as men, during the period 1974-1986, when major rises in both unemployment and suicide occurred in many Western nations (Pritchard 1990). Pregnant women and mothers of young children who are unemployed also have higher rates of anxiety and depression than employed women (Brown & Harris 1978, Najman 1983).

Unemployment has an adverse effect on health, demonstrable even when social class, poverty, age and pre-existing morbidity are adjusted for (Wilson & Walker 1993). Women are less affected by enforced unemployment, but families are put at greater risk of physical illness, psychological stress and family breakdown. Women in unsatisfying jobs scored worse on psychological measures than those who were unemployed (Tiggermann & Winefield 1991). Depression was more common among unemployed men and women and their spouses and the anticipation of job loss had an adverse psychological effect on men and their families.

### **Conclusion**

There would appear to be sufficient evidence from research to date to encourage women to continue paid employment outside the home after marriage and childbearing. Recognition by society of the beneficial effects of paid work on women's mental health may lead to increased structural support for working parents, in terms of adequate and affordable child care and flexibility of work hours. Societal change may also assist to change the attitudes of male partners and fathers. Increased instrumental and emotional support by male partners would help maximise the potential beneficial effects of work outside the home for women.

## **7. HOUSEHOLD LABOUR AND HEALTH.**

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### **Gender-related division of labour in households**

Household has been defined as 'the bundle of relationships in a society through which reproductive activities are organised' (Kaaber, 1991). The term 'reproductive' includes not just biological, but also social, reproduction: the maintenance of the well-being of those individuals located within the boundaries of the household.

The nature of women's domestic work, the conditions under which it is performed, and the relations of dependency and inequality that often underlie it, can all limit women's potential for positive mental and physical health. Women may also be responsible for the production of food and other items to meet their families' needs, as well as carrying out a variety of economic activities to earn extra income. Even when they take on paid work, most women retain responsibility for domestic labour.

All over the world women are more likely than men to be homeworkers, to be self-employed or to work in small unregulated businesses, and are less likely to be members of trade unions. Much of the recent expansion of the female paid labour force has taken place among married women with children, who fit their hours around their children's needs and their domestic responsibilities, often leaving little time for themselves. (Morris, 1990; UN, 1991)

### **Female-headed households**

Women's contribution to the household economy is greatest among female heads of household, and their proportion has been increasing since the 1970s. Female household heads in 1990 made up between 20 per cent and 46 per cent of all households in 174 countries studied (UNDP, 1991). Female-headed households in every country are swelling the ranks of the poor. Estimates indicate women as the sole breadwinners in one-fourth to one-third of the world's households. What is more, at least one-fourth of other households rely on female earnings for more than 50 per cent of total income (Agarwal et al., 1990).

One in five African households has a woman as its head. In southern Africa more than two in every five households is headed by a female; in the USA one third of households are managed by

women alone. In the Dominican Republic, the number of female-headed families has doubled to 21 per cent over the last decade.

### **Women's excessive workload**

UN studies of 31 countries show women working 10 to 30 per cent more hours than men. Two thirds of women's work is unpaid, unvalued and has traditionally been invisible (UN, 1995). Housework still remains a predominantly female

responsibility. In the United States women now spend about 30 hours a week on domestic tasks compared with 15 hours for men, while western European women spend 31 hours and men 11 hours (UN, 1991).

Data from the African and Asian regions indicate that on average, women work at least 12 hours longer each week than men (UN, 1991). In many countries women are engaged in subsistence agriculture, growing and then processing the food. Fuel is usually collected in the form of firewood; water is collected from a local source rather than piped to the house. Research has shown that for some women water collection depletes more than a quarter of the energy gained from their daily food intake (Rodda, 1991). Throughout the world women are carrying loads as great as 35 kilograms for distances of up to 10 kilometres. In many of the poorest countries, between 60 and 90 hours a week of hard labour are required to maintain minimal living standards in the face of economic recession.

These averages conceal the particularly heavy burden of poor women with young children and few resources. The number of women on or below the poverty line has increased dramatically in most developing countries over the past two decades.

### **Gender gaps in nutrition**

The physical impact of women's heavy workload is compounded by gender differences in access to nutrition. While both sexes may be damaged by lack of food, women are specially vulnerable, largely because of their special needs associated with the biological processes of reproduction. Menstruation, pregnancy and lactation all increase women's need for protein, vitamins and minerals. Worldwide, 450 million women are undernourished compared with 400 million men (PNUD ?). Women with anaemia (iron deficiency) total 458 million compared with 238 million men.

At the household level, gender bias in the allocation of resources usually begins at birth. In rural Bangladesh, for example, malnutrition was found to be almost three times more common among girls than among boys (Bhatia, 1985, Chen et al., 1981). Among forty-five developing countries for which recent data are available, there are only two where mortality rates for girls ages one to four are not higher than of boys (UNICEF 1986).

Girls almost inevitably receive insufficient nourishment for the energy they expend in daily chores, not to mention for proper growth and development. Thus a nutritional gender gap often develops in early childhood. In most countries with an overall life expectancy of less than 60 years, girls

have a higher mortality rate than boys and discriminatory practices make a contribution to this pattern (Waldron, 1987).

### **Gender and psychological health**

Nutritional discrimination is just one aspect of a wider discrimination against girls and women. At its most extreme, this is visible in 'missing' girl babies and female mortality rates. In India's Punjab State, girls aged two to four die at nearly twice the rate of boys. The pressure to bear sons is so great in India, China and Korea that women have begun using amniocentesis and ultrasound as sex-selection devices to selectively abort female foetuses. In a large Bombay hospital it was found that 95.5 percent of foetuses identified as female were aborted (Ramanamma, 1990).

It is important to recognise the psychological effects of these practices. Women and girls get messages about their own value from the way in which they are treated by others. Consistent experiences in discrimination are likely to lead to diminished self-worth and a "culture of female sacrifice" that continuously reproduces preferential treatment for males. Thus girls may be viewed as a drain on household income and receive less health care as well as less education: their ability to undertake both domestic and other work may be compromised, and their choice of occupation limited by gender bias in their upbringing.

### **Domestic violence**

Domestic violence is a public health issue on a global scale. The 1993 World Development Report indicated that rape and domestic violence together account for about 5 per cent of the total disease burden of women aged 15-44 in developing countries and 19 percent in developed countries. Four million American women are battered each year. Between 21 and 30 per cent of US women will be beaten by a partner at least once in their lives. Studies suggest that one out of every five Colombian women has been beaten by a partner; in Chile the proportion is claimed to be 80 per cent, and in San Salvador 57 per cent. In Norway 25 percent of female gynaecology patients have been physically or sexually abused by their mates. In Papua New Guinea, 60 per cent of women may have been victims of wife abuse. In Kenya, 42 per cent of women are estimated to have been beaten regularly by their husbands. In India, one study found that 22 percent of women with higher cast husbands were beaten.

It is clear that a significant proportion of the women who live with men have their health diminished or even destroyed by violence. Pregnancy often appears to be a precipitating factor. However, emotional violence is much more common than physical abuse and probably has the longest lasting effects. A number of studies have indicated that about a third of battered women suffer major depressions and some go on to abuse alcohol or drugs. One out of every four suicide attempts by women are preceded by abuse.

The relationship between domestic violence and homicide, however, may be even more profound. In Bangladesh, for example, assassination of wives by husbands is believed to account for around half of all murders. In Canada 62 per cent of women murdered in 1987 died as a result of domestic violence. And in Papua New Guinea, almost three-fourths of women murdered were killed by their husbands. In Spain, one woman a week is murdered by her lover or husband.

Studies from a variety of cultures confirm that when women kill men, it is often in self-defense, usually after years of persistent and escalating abuse. In the United States, as elsewhere, a woman is more likely to be assaulted, raped or killed by a male partner than by any other assailant (Browne & Williams, 1989).

### **Economic recession, a new burden**

The impact of the economic recession has been devastating for poor women: a sharp fall in real wages combined with rising unemployment; the unequal burden that the rising cost of living imposes on women; and the reductions in public spending for services on which women rely, highlight existing structures of female subordination and exploitation.

The great majority of single and married women also maintain that their families could not survive without their wages, suggesting that their wages are not supplementary but are making an essential contribution to the family income. For households under extreme poverty or at subsistence levels, the pressure to concentrate on the most urgent needs implies a continuous neglect of other expenses such as home upkeep. The restructuring of daily life generates changes in purchasing habits, such as shopping in cheaper markets, and increases domestic work: for example, cooking, fixing, mending and sewing at home (Benerías & Feldman, 1992).

### **Occupational hazards of household work**

Domestic accidents are relatively common especially among older women. In developing countries data on domestic accidents are extremely sparse, but it is clear from the nature of the work that here too they are a major risk. Damp and dilapidated houses require extra labour to keep them clean, and dampness appears to be linked to increased levels of asthma, and other respiratory diseases (Hyndman, 1990; McCarthy et al., 1985). Female agricultural workers are subject to hazards that also affect men, such as poisoning from pesticides and chemical fertilisers. They are at high risk for backache, postural defects and infectious and parasitic diseases (Chatterjee, 1991).

Looking after a home and its inhabitants may also bring women into contact with a variety of toxic chemicals that are largely unregulated and often inadequately tested, such as cleaning fluids, bleach, detergents, insecticides and pesticides. The average household in the USA contains some 250 chemicals that are toxic enough to necessitate medical attention if ingested (Rosenberg, 1984). Women describe most of their household tasks as monotonous, boring and repetitive - the very characteristics that occupational psychologists have shown to be most stressful for waged workers. The little satisfaction from their routine tasks which many women get is exacerbated by the lack of value awarded to domestic work by the wider society. In fact 70 percent of British housewives expressed themselves as 'dissatisfied' with their lives (Oahey, 1974).

### **Psychological hazards of household work**

The reality of daily child care can be both physically and emotionally demanding, especially in societies when there is little support from partner, friends or kin. Research in a number of countries has suggested that a high proportion of women suffer significant physical problems in the weeks and months after childbirth (Romito 1990). Many commented on the conflict between

child care and housework. For others the major problem was the isolation often imposed by child care and the lack of opportunity for significant relationships with other adults.

In some societies the role of mother-in-law and grandmother is a much valued one, offering women greater autonomy than at any other point in their lives. However for others the experience may be devastating if their identity has been vested in motherhood and their social and economic environment offers few options for growth or development. Under these circumstances depression and other mental health problems may well result.

About 15 percent of women of working age in the UK are caring full-time for someone who is sick, elderly or disabled. As a result many lose much of their independence, sometimes to the detriment of their own health.

### **Role conflict in the household**

In recent decades, the majority of women in industrialised countries, and an increasing number of women in the developing world, have joined the paid work force. Nevertheless traditional gender role patterns still largely persist, particularly with regard to home and family responsibilities. In the early nineties Lundberg et al. investigated the total workload (TWL) of men and women and its psychological correlates. TWL - a term proposed by Kahn (1991) - encompasses paid and unpaid forms of productive activity and denotes 'any activity that adds to the stock or flow of valued goods and services'. Thus a person's TWL includes not only regular employment and overtime at work but also household chores, child care, care of elderly or sick relatives, work in voluntary organisations, unions, and so on.

In a study by Gutek et al. (1991) work-family conflict was found to be related to the total amount of time spent in paid and unpaid work. Another important aspect of TWL is the responsibility for those unpaid duties. Stress and inter-role conflicts are not caused only by the number of hours in different activities, but also by having the main responsibility for seeing to it that each of the tasks gets done. One study (Frankenhaeuser et al., 1989), asked participants whether they or their partner carried the main responsibility for each of the various unpaid duties in the household. An important finding was that not only do

women white collar workers employed full time have a greater total workload and experience more stress and role conflicts than men, but this gender difference increases systematically with the number of children living at home.

Despite women's high educational levels and increasing engagement in the paid work force, they still have the main responsibility for household and child care. Consequently, women report considerably more stress and role conflicts as well as more hours in unpaid productive activities than do men, which possibly contributes to long-term stress-related health problems (Frankenhaeuser et al., 1991). Because husbands did not recognise the significance of the unpaid work, and thus of the conflicting claims upon women, their estimations of their wife's role conflict were significantly lower than the levels reported by the women themselves (Wortman et al., 1990). The lives of married women workers with young children require them to face conflicting role demands and time shortages on a regular basis (Wortman et al., 1991). For the majority of working men, blood pressure falls on going home in the evening, but working mothers' blood pressure does not fall when they go home.

### **Future strategies**

Generally speaking, women's involvement in campaigns relating to occupational health and safety issues has been limited. Many are employed in small workplaces, in the "informal" sector of the economy; most are occupied solely or partially within the home. Where trade unions do exist they have usually been male dominated, paying little attention to the specific concerns of women.

In response to this situation many women have developed new strategies, more appropriate to their circumstances than the traditional one of trade union bargaining. Most have been more broadly based, involving extensive research to identify hitherto invisible hazards in predominantly female occupations such as those described at the Congress of Women, Work, Health (Barcelona 1996). The Self Employed Women's Association (SEWA) has combined research into occupational health with organising a self-help network and is gaining recognition for women in national legislation and also in persuading the trade union movement and the International Labour Organisation to take up the cause of homeworkers.

The new strategies also recognise that research must explicitly incorporate women's unpaid housework in the conceptualisation and measurement of women's work activities. Similarly, traditional occupations such as farming must also be explicitly defined as work activity, given the importance of the informal economy and therefore of informal jobs for women.

We know that social support is an essential element in the promotion and maintenance of physical and mental health. Women play a central part in providing that support to those around them but too often they are denied it themselves. Women should promote a broader definition of women's health which encompasses the full length of their lives, the full range of their activities, and all the discomforts and illnesses they face.

## 8. MIGRATION, WORKFORCE AND HEALTH

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### Migration for marriage

In many traditional cultures the clear majority of all those who migrate at least once in their lives are women: marrying out of their natal village into a husband's family group. Ware (1981) drew attention to this neglected area of migration study more than a decade ago, pointing out that little is known about the ways in which women's lives are influenced by knowing throughout childhood that they will have to leave, as well as by having to adjust to a new life with a new family in a new place.

Out-marriage is frequently associated with a low status of women. The bride earns her (somewhat limited) entitlement to food and shelter by providing labour and bearing children, especially sons, for her husband's family; it is not unreasonable to describe her health risks as occupational hazards. In such societies, girl children may suffer neglect; discrimination in nutrition; and are likely to receive less health care and education. By the time they come to marry and migrate, their health status may already have been compromised.

Marriage in this environment is traditionally early; childbearing begins at a young age and pregnancies are frequent; so too is reproductive-related ill health. Simultaneously, the young bride is expected to take over much of the household work from other females, especially from the mother-in-law. Thus, in a typical study from Bangladesh (Cain et al. 1979), the total hours worked by daughters-in-law were almost double those of the mother in the household. Hence, these young women are amongst the most vulnerable to the various agricultural and domestic occupational health hazards (including violence) which have been described in earlier chapters.

The young woman has little autonomy: indeed, Dyson and Moore (1983) argued that the further the distance she migrates from her natal family, the greater her dependence. There are differences across societies in the type as well as the amount of social control exerted over the young woman, so that in one Indian survey (Basu, 1996), for example, only seven per cent of women under age 30 in Uttar Pradesh could decide on a sick child's treatment, while just over half of those in Tamil Nadu could do so. Nevertheless, the ability to act - even to assist a sick child - is, for many women in both groups, formidably constrained: it is likely (though the question is never asked) that their ability to make decisions for their own health is still more limited.

### Migration for work

Young women, including those who are married, may also migrate alone in order to get work. Some move within their own country, typically to the cities. Limited opportunities and lack of

family support may lead them into prostitution or some form of sexual barter; in East Africa, young girls provide sex for money to help support them and pay for their education (Orubuloye et al., 1994).

Commonly, young women find unskilled and poorly paid work. With the relaxation during the early 1980s of controls on movement in China, for example, large numbers of women from the poorer rural areas found work as maids and childminders in urban households. Their presence exacerbating already over-crowded conditions, they slept in passages or on the kitchen floor, and worked long hours for wages which were insufficient to guarantee any health care. Some complained of physical and sexual abuse.

Other women, whether single or married, travel abroad to find work especially within Asia, where according to the UN (1995), there is a uniquely high proportion of young female workers among migrants. These women come predominantly from Indonesia, the Philippines, Sri Lanka and Thailand, and work largely in the service sector especially in oil-rich western Asian countries.

Some never reach their destination: some 5000 Indonesian migrants, both women and men, are estimated to have drowned between 1990 and 1995 trying to reach Malaysia in overcrowded boats which were never designed for open seas (Jones, 1996). Both legal and illegal migrants can face inhumane working conditions and physical abuse, as well as withholding of wages, on the part of their employers. Isolation is a particular problem. Almost a third of Sri Lankan women working in West Asian countries reported that they had no contact with relatives or friends, while others maintained communication only by throwing letters over a wall or giving letters and cassettes to street cleaners who acted as messengers (Eelens, 1995).

In some instances - amongst migrant workers from the Philippines, for example - the women may be trained schoolteachers, or have other professional qualifications: they are prepared to work abroad as maids because of the low level of wages within their country, and abject family poverty. They may suffer from malnutrition or other health impairments linked to poverty; in addition, their sense of self-worth may be affected by the perceived decline in status.

Daughters of migrants, especially of women migrants, are frequently compelled to drop out of school to undertake the childcare and household tasks their mothers used to perform. Too early adoption of the adult role may create stress; in addition, it has been suggested (Eelens, 1995) that young teenage girls lacking maternal supervision are more vulnerable to sexual exploitation.

## **Migration with a family**

Not all women migrants are on their own: many - perhaps the majority - move as part of a family. While the threat of sexual abuse is reduced, other challenges may include isolation from family and friends, and language barriers which not only add to loneliness but may prevent the women from understanding health messages or negotiating the health system. However, as the UN has pointed out (1995), the invisibility of women in migration data makes it difficult to ascertain anything about them.

## **Health of international migrants**

In general, however, the health of international migrants is better than that of both the sending and the receiving population. Two aspects of selectivity operate to produce this result. Host countries are selective about the people they are prepared to admit, and usually demand evidence of good health. In addition, migrants themselves may be particularly energetic and resilient in their willingness to risk the new.

Evidence from Australia (Young, 1986), among other countries, is that the better health levels - at least, as measured by mortality - of migrants converge towards the levels of the local population as migrants adopt local nutritional and other behaviour. The convergence is gradual, and migrant mortality profiles in the early years in their new country reflect, to some extent, conditions more typical of their country of origin than of the recipient country. The differentials are seldom large, but may lead to some risk of delayed diagnosis when a migrant's particular health problem - such as a particular type of carcinoma - is less common in the host country.

Mortality data, though, are not necessarily a particularly good indicator of day-to-day occupational health risks, as earlier chapters have shown. Migrant women are to be found disproportionately in low-paid and poorly-unionised factories where they may experience inadequate lighting, ventilation and safety precautions. They are also concentrated in the non-formal sector where, for example, women street vendors or leaflet distributors may face exposure to sunburn and melanomas: working conditions amongst such women are seldom studied. Women migrants are also disproportionately employed in home work and paid - but poorly - by the piece; they often work very long hours and the pressure increases the risk of accidental injuries from, eg, sewing machines.

## **Refugees**

Not all migrant women leave their homes by choice: some are refugees, often from situations in which the breakdown of law and order has left them vulnerable to violence including rape, involuntary prostitution and physical assault during pregnancy. The experiences they have undergone leave some women severely traumatised. Malnutrition and epidemics are also common consequences of social and economic breakdown; pregnant and lactating women, in particular, may be especially affected in such situations. Complications of pregnancy and delivery are the leading causes of death amongst refugee women (UNHCR, 1995).

## **Women who stay home**

Where women are not the migrants, but the people left at home while the men go away to look for work, they face an increased burden of household and - in rural areas agricultural tasks. The Economic Commission for Africa states simply that 'rural women's work doubles when men migrate to the cities' (Ware, 1981). This involves not only working for longer hours but, very often, undertaking additional heavy work, or tasks for which they have never acquired skills: for example, Turkish women have been reported as driving the tractor during their husband's absence, and Yemeni women as participating in farming activities, such as ploughing, traditionally reserved for men (Makinwa-Adebusoye, 1993). The hazards of accident and injury are thus increased.

In countries like Tokelau and Tuvalu, where there are 25 per cent fewer men than women in the working ages, not even a liberal transmission of remittances back home can fully compensate for their loss. This is especially marked in agriculture, and it is thought (Kane and Lucas, 1985) that this lack of adult males to work the fields may provide a partial explanation for the nutritional problems in much of the Pacific.

The problems of women left behind by migrant spouses are not confined to developing countries. A report on women's health in the former Eastern European countries and the newly-emerging states (WHO 1994) noted the burdens placed on women who were left in charge of households with extremely limited resources and children who were often ill. The emigration of health care personnel, and the reductions in social benefits in those countries, intensify the hardships.

Those who are left at home are also vulnerable to the health hazards which returning migrants bring with them. Tuberculosis is perhaps the most obvious example of a disease which the migrant is likely to pick up in a mine, or an urban slum, and pass to family members and others on going home. The wives of migrant men are particularly at risk from sexually transmitted diseases and from HIV/AIDS which a partner has acquired while working elsewhere. In sub-Saharan Africa, HIV/AIDS is transmitted by people who work along the roads, especially the major highways, just as in earlier times West Africa's caravan routes were characterised by high levels of STDs and impaired fertility (Orubuloye et al., 1994)

## 9. REPRODUCTIVE HEALTH AND OCCUPATIONAL HAZARDS AMONG WOMEN WORKERS

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### Introduction

Unlike other work-related pathologies, the structural and functional differences between the male and the female reproductive system determine differences in the way environmental and occupational hazards may effect the reproductive health of male and female workers and their offspring. Some environmental and occupational hazards, such as ionising radiation, may damage the human germ cells and are therefore of concern for both the male and the female worker, while others may be specifically hazardous to the male reproductive system (high temperatures are an example), or to the female reproductive system and the offspring.

The female reproductive system is not necessarily more vulnerable to toxic agents, but rather the effects of these agents may be different from those observed on males for a number of reasons:

- ?? women possess their germ cells from birth, and these may be more susceptible to some toxic substances than the cells of the rest of the body;
- ?? reproductive health in the female involves a complex hormonal equilibrium, which can be easily disrupted by external agents with possible damage to the woman herself and to the offspring;
- ?? finally, the foetus is usually more vulnerable to those environmental and occupational agents which can penetrate through the placental barrier (Scialla, 1992).

Concern for the reproductive health of women workers has increased in recent years as researchers identify more and more environmental and occupational exposures potentially hazardous to reproduction, and as the number of women entering the labour force, including those in unsafe and unhealthy professions, is increasing in both developing and developed countries. In developing countries, where unhealthy industries and environmental contaminants have often been exported from the industrialised world, these new health risks are added to the traditional reproductive risks of women. In fact infection-related infertility and infant mortality are aggravated by exposure to chemical and physical pollutants. Low birth weight and prematurity, widespread problems in undernourished populations, can be exacerbated by heavy and stressful work and long working hours which are typical among women in the newly industrialised countries.

An example is a recent study from China showing that women occupationally exposed to radiation, chemicals, pesticides and noise had an increased risk for all negative reproductive outcomes (Zhang et al. 1992). Another example is the case of exposure to pesticides, massively

diffused in the developing world. Their use without appropriate preventive measures constitutes an additional risk for agricultural women workers and their infants.

In this chapter we discuss the evidence on negative reproductive effects associated with environmental (and especially occupational) exposures among working women. This evidence comes, for the most part, from experimental studies and from epidemiological research conducted in industrialised countries, where working conditions are relatively good, and where the rules about environmental exposure are stringent. The few studies conducted thus far in developing countries are probably the tip of an iceberg, warning us about the importance of this emerging health problem of women workers.

The types of negative reproductive outcomes that have been examined in occupational settings include effects on the menstrual, ovulatory and hormonal patterns, with consequences for the fertility of couples and fecundability of women; and effects on the pregnancy outcome, such as the increased risk of foetal loss, prematurity, low birth weight, and congenital defects and disease in the offspring.

### **Effects of workplace exposures on reproductive function, fecundability and fertility of women**

The menstrual cycle can be disrupted by strenuous physical work, with manifestations of dysmenorrhoea, amenorrhoea, anovulatory cycles and reduction in fertility. Several studies have shown the effects of physically demanding and stressful work both in developing countries (agriculture, industry, etc.) and developed countries (service sector, air transport, nursing, the armed forces etc. (Figà-Talamanca and Hatch, 1994). A study among Chinese textile workers for example showed that self-reported occupational stress was associated with dysmenorrhoea, much more frequent among the women with elevated work stress.

Chemical agents present in unhealthy work environments are also known to affect ovarian function. In the pharmaceutical industry, for instance, exposure to hormones and alkylating agents causes menstrual disorders to women workers. Women involved in the production and application of pesticides (halogenated hydrocarbons and organophosphates) have also reported analogous problems. Exposure to heavy metals such as lead, mercury and cadmium in the metalmechanic industry have also been shown to cause abnormal menses and amenorrhoea. Exposure to these metals is not exclusive to the industrial setting. Thus, one study showed that the ability of dental assistants to conceive may be hampered if they do not take appropriate preventive measures to protect themselves from exposure to mercury used in the dental amalgams. Solvents, such as benzene, styrene, carbon disulfide, formaldehyde have also been associated with menstrual and ovarian function disturbances and reduction of fertility.

Environmental noise and uncomfortable microclimatic conditions (too hot or too cold) prevailing in the food industry where many women workers are employed have also been found to be associated with dysmenorrhoea, hormonal disturbances and reduced fertility (Paul, 1993).

Many of the interferences with hormonal balance due to occupational exposures have, as a net result, the reduction of the fecundity of women, which may manifest itself with delays in conceiving a desired pregnancy. This has been observed in connection with exposure of women

to tobacco smoking, as well as to a number of chemical occupational hazards. Researchers in the Finnish Institute of Occupational Health, for example, showed that women exposed to solvents (almost always within the 'acceptable occupational exposure levels') often had to wait much longer in order to conceive than those not exposed.

The solvents were those used in industry, in dry cleaning and in laboratory work, such as styrene, xylene, toluene, trichloroethylene, tetrachloroethylene. Although the delay in conception may be viewed as a non-serious public health problem, its occurrence is a signal of interference with, and failure of, reproductive function which cannot be overlooked.

Table 9.1

### **Effects of workplace exposure on the pregnancy and offspring of women workers**

Work exposure of the mother in the post-conception period can cause a range of negative effects on the offspring, ranging from early foetal death and miscarriage to prematurity, maldevelopment, low birth weight, congenital defects and even childhood cancer.

In recent years, increasing evidence has accumulated linking spontaneous abortion to environmental and occupational factors. Among the exposures identified as potential causes of spontaneous abortion the following may be mentioned:

#### *i) Solvents and organic pollutants*

Many solvents are among the toxic substances routinely used at work and at home. They penetrate rapidly by inhalation or through the skin into the organism, and they can also pass through the placenta to the foetus. Methylene chloride, trichloroethylene and xylene, for example, have been found in human foetal tissue, and many other solvents can cause developmental toxic effects and teratogenicity.

Laboratory workers, dental and pharmacy assistants, industrial workers, and especially dry cleaning shop workers (tetrachloroethylene), have a higher risk of spontaneous abortion than unexposed control groups. Analogous results have been obtained in several recent studies in the semiconductor industry (Schenker, 1995).

Evidence about the teratogenic potential of organic pollutants comes from environmental catastrophes, where pregnant women were exposed to specific compounds. This was, for example, the case with methylmercury, first recognised as a foetal neurotoxicant in Minamata and later in Iran. A similar case is that of mass intoxication by the ingestion of rice contaminated by polychlorinated biphenyls in Japan. The exposed foetuses presented growth delay and structural anomalies.

#### *ii) Pesticides*

Exposure to pesticides is a growing concern for human health. The problem is particularly important in developing countries where the majority of the agricultural labour force is made up of women. There are a few reports on spontaneous abortion and pesticide exposure from developing countries. One such study was reported from the state of Andhra Pradesh in India (Rita et al.,

1987), and one from Colombia (Restrepo et al., 1990). The former study observed both men and women spraying mixtures of pesticides in vineyards. The abortion rate amongst women in this group was very high (44 per cent) when compared to the non exposed (8 per cent). The Colombian study was based on interviews with women employed in floriculture using a heterogeneous mix of pesticides. Here too the risk among the exposed (both mothers and fathers) was higher for spontaneous abortion, as well as for prematurity and for birth defects.

Table 9.2

Several other studies suggest an association between some types of birth defects (for example, orofacial clefts, limb reduction, central nervous system defects) and occupational exposures to pesticides. One source of data about the teratogenicity of chlorinated pesticides, in particular 2,4,5T and TCDD (dioxin) refers to rural Vietnamese populations exposed during the war. Other evidence comes from animal studies. However, at present this association is not considered established and future research, both in laboratory animals and in human populations, is needed.

### **Exposures associated with the health professions**

Paradoxical as it may appear, health professionals are often exposed to many different hazards in their workplace. These hazards include anaesthetic gases, cytostatic medicines, disinfectants, radiation, shift and night work, lifting of weights etc.

Operating room personnel were amongst the first groups to be studied from the point of view of reproductive health. Although not all the studies which indicated negative reproductive effects among operating room personnel are now considered reliable, some negative effects (in particular reductions in fertility, the incidence of spontaneous abortion and birth defects) were consistently demonstrated in connection with anaesthetic gas exposure. The results of the various studies - even if not always valid - certainly contributed to improvements in making operating rooms a safer place for both workers and patients.

Antineoplastic drugs too have been shown to increase the risk of birth defects and spontaneous abortion. Again, not all findings are consistent, and not all nurses are exposed, even if they handle such drugs. However what is known is sufficient to dictate maximum protection for the staff involved.

There are many physical and ergonomic factors in the health care setting which have been associated with an increased risk of spontaneous abortion, including electromagnetic field waves, physical and mental stress and shiftwork, but here too the results are not clear cut. Nonetheless, again preventive measures are indicated even when the research results are uncertain.

#### *Physical agents and work with VDTs*

Among physical agents, ionising radiation is the health hazard best known and controlled from the point of view of reproductive health. Exposure in pregnancy is regulated by internationally accepted strict rules. In its latest recommendations the International Commission on Radiological Protection (ICRP) set the maximum allowable dose during pregnancy below 1 mSv. In general, exposures in the workplace are far below those expected to harm the ovaries or the foetus, and there are no recent studies on this issue.

However, new technologies have introduced new types of exposures to physical agents such as video terminals. Up until about ten years ago, there was no information about the possible effects of this type of work on reproduction. Because of public concern, the United States National Institute of

Occupational Safety and Health conducted a large study among telephone operators. The results showed no association between their work with VDTs and spontaneous abortion. An analogous study was conducted in Finland for similar reasons. Again the results were mostly negative. From the many studies that followed, the overall evidence suggests that work with VDTs nowadays does not constitute a risk to the reproductive health of women and their children.

### **Heavy workload and postural factors**

The first large study on the role of workload on pregnancy was conducted in Montreal and was based on data from over 30,000 women (McDonald et al., 1988). Conditions which appeared to contribute most to spontaneous abortion and low birth weight were long working hours (more than 40 hours/week), physical effort and lifting heavy objects. This last factor has been confirmed by other more recent studies, which have also identified frequent bending and chronic abdominal pressure as potentially constituting a risk, of late abortions in particular.

Physical labour of the mother has long been known to be a risk factor not only for spontaneous abortion, but also for low birth weight and premature birth of the infant. Recent studies have examined more subtle work exposures such as posture, shift work and working hours. French investigators (Mamelle and Munoz, 1987) have developed a useful scale for measuring occupational ergonomic factors in pregnancy, which includes five parameters: posture, working with a machine, physical exertion, mental stress, and

general environmental stress. Each item is scored as high (value 1), or low (value 0), and the sum of the five scores can be used to predict the risk that a woman may have a premature or low birth weight baby.

Low birth weight is also related to chemical work exposures, and this is not surprising given its well known association with tobacco smoking. Chemical exposures which have been shown to be associated with low birth weight include polychlorinated biphenyls, work in the metal and electrical industry, organic solvents and pesticides (Nurminen, 1995).

The possibility that maternal occupational exposures might be related to cancer in the offspring has also been investigated in a number of studies. The hypothesis is based almost exclusively on experimental animal studies (transplacental cancerogenesis). The only human evidence is in relation with a drug (DES) which, administered in pregnancy, caused a number of cancer cases in the offspring. Thus far, studies conducted to ascertain such an effect among women (and men) exposed occupationally to a variety of risks are not conclusive (Savitz, 1990).

Some studies have shown statistical associations between some childhood cancers (especially cancer of the brain and leukemia) and professional exposure to some chemicals (solvents, pesticides, fertilisers, PCB etc.) but the causal link between these exposures and childhood cancer is not considered established.

### **Prevention and Policy**

This brief overview has shown that at present there are many documented occupational reproductive hazards for women that should be placed under control, and others for which further research is needed.

All countries have specific legislation aimed at protecting the pregnant worker and the foetus. Following the International Labour Organisation directives, maternity protection laws provide for maternity leave before and after parturition and regulate the conditions under which a woman qualifies for maternity benefits and is protected from dismissal. Many countries also have legislation about the removal of pregnant women from hazardous tasks accompanied by more or less equitable job security measures.

It should however be remembered that unreasonable 'overprotection' of women may be both scientifically unsound (men as well as women are often vulnerable to the same hazards), as well as disadvantageous to the economic well-being of women. An example of a 'protective' policy damaging women was the so-called 'foetal protection' policy adopted by some North American industries in the 1980s, whereby women of the reproductive age were given the option of either sterilisation or unemployment. The United States Supreme Court put an end to this discriminatory practice, on the basis of the legal and ethical principle that the workplace should be safe for all workers, including pregnant women.

Important steps in this direction have been taken by the European Union, which has recently developed uniform directives for the protection of women workers, and for the labelling of chemicals for reproductive toxicity. The next step is to reach an international agreement about the classification of reproductive hazards, and on the precautions to be taken for the protection of the

reproductive health of both women and men. Such agreement should include a commitment on the part of the industrialised countries to discontinue the exportation of hazardous industrial processes to the developing world, and rules similar to those in the west to safeguard the health of working men and women in the developing world.

**Table 9.1 Exposure to organic solvents and reduction in fecundability among female workers in Finland**

<b>Solvent</b>	<b>% reduction in fecundability among the highly exposed</b>
Tetrachloroethylene	31
Trichloroethylene	39
Toluene	29
Aromatic hydrocarbons	19
Aliphatic hydrocarbons	37
Halogenated hydrocarbons	47
Miscellaneous solvents	30
Any solvent exposure	56

Source: (modified) Sallmen et al., 1995

**Table 9.2 Odds ratio for various pregnancy outcomes before and after work in floriculture in Colombia**

<b>Pregnancy outcome</b>	<b>Exposure group</b>	
	Female workers	Male workers
Spontaneous abortion	2.2	1.8
Prematurity	1.8	2.8
Stillbirth	0.9	0.9
Birth defects	1.4	1.5

Source: Restrepo et al., 1990 (modified).

## **10. THE HEALTH OF CARERS**

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### **The extent of care-giving**

Women across the world have traditionally been allocated the major responsibility for providing care to the infirm and the elderly, especially within a family. Few women, at some stage in their lives, escape the prospect of assisting and nursing a sick or disabled child, partner, parent or other relative, whether those relatives are natal or acquired through marriage. Some such episodes are short-term; many others, however, involve long-term demanding care for those who are suffering profound and severe handicap.

Contrary to what is sometimes believed, family care for those who need help because of disability is the predominant type of care in industrialised as well as developing countries. An Australian survey of caring in families (ABS, 1995) reported that even where the handicap was profound or severe, two thirds of those involved lived in a family. One quarter of those who had a profound handicap, which meant that they required help with some basic living activity, were aged 60 or above.

The same survey found that, amongst the principal carers - those with the major responsibility for looking after ill or disabled family members - two-thirds were women. Women of all ages were almost invariably the principal carers of a child with handicaps. Depending upon the woman's age, women were twice to three times more likely than men to be the principle care-giver for a parent; they were also about twice as likely as a man to be caring for other family members or friends. Only where it was a spouse who needed care did the numbers of male principal carers approach - and, in the case of males over age 60 - exceed those of female carers.

### **Multiple responsibilities**

Being a principal provider of care is seldom the sole responsibility of the caregiver; in the Australian survey, about a quarter of all principal carers were parents living in a household with dependent children who needed their routine care - while also having the main responsibility of caring for another, handicapped, person.

### **Caring and employment**

The responsibility of providing care may continue for many years, and may severely limit opportunities to pursue employment, recreational or educational activities. Labour force participation rates, in the Australian survey, were lower amongst principal carers than amongst the population as a whole: women who were principal carers, however, had even lower

participation rates than male carers. Thus some of the occupational health problems associated with being a carer may be exacerbated by, or even be primarily the result of poverty.

Nevertheless, studies in Europe (Phillips, 1996) suggest that a third of those people who are employed are caring for an adult, mainly an older person. The 'typical employee' in such circumstances will be female, married and between 40 and 50 years of age. Amongst the health problems faced by employees who are also carers, tiredness, guilt and worry as well as physical conditions like back problems were common. The use of vacation and sick leave by the worker to provide additional care exacerbated the problems amongst some employees.

Even when the caring role has ceased, the possibility of employment may be reduced for those who have been out of the workforce for a number of years. Four fifths of the Australian carers who wished to re-enter the workforce believed that limited experience or education, and their age, would make it difficult for them to find a job. They may well be correct: another study, of the long-term effects of caregiving, reported that those who had been carers for more than 10 years were generally less likely to be in a job. Women carers who do have jobs, either full-time or part-time, of course face the challenge of multiple roles in a particularly acute form.

For many women, particularly in Africa, the AIDS epidemic has brought additional concerns. AIDS patients are predominantly cared for by female relatives, who may experience tension from, and reduced contact with, neighbours. Some of the women carers have had to give up or reduce their income-earning activities, so that they too become a burden on their families. Caregivers have, increasingly, to support both children and old people, as the epidemic depletes the ranks of young and middle-aged adults (Caldwell et al., 1994).

### **Health problems of carers**

Principal carers, in particular, are likely to experience a number of other problems which affect their health. Those reported in the Australian survey included interrupted sleep, loss of contact with friends and strains on family relationships and - amongst principal carers of partners or children - increased stress-related illness, worry, depression, anxiety, anger or lack of energy.

### **The care professionals**

Further insights into the occupational health situation of carers can be gleaned from a survey of home help and personal care workers employed in the United Kingdom (NUPE, 1993). Under the auspices of local government, these workers provide domestic and personal assistance to clients; most were employed as casual workers with very low pay scales. Low pay and low status are frequently encountered in the formal care sector, which predominantly employs women.

Over one third of those who responded to the NUPE survey had received no training of any kind, and fewer than half had been trained to lift people safely, although tasks which involve a high risk of back injury are known to include bathing people, helping them on and off commodes or in and out of bed as well as lifting or carrying either people or heavy loads. Where - as in this instance - the occupational health risks of paid carers are given little attention, the risks amongst unpaid carers are likely to be ignored altogether.

### **Health problems amongst professional carers**

Although nurses are more likely to have been given training in such tasks, they remain vulnerable - as an earlier chapter has already indicated - to back and arm injuries, especially sprains and strains. An expert assessment of occupational health risks in Spain (Ajuntament de Barcelona, 1992) also identified muscular conditions as a continuing problem amongst health workers. In addition, the experts identified other health risks for health workers as being the danger of contamination (from both live agents and such things as radiation, solvents and medicines); mental stresses; and long working hours, rotating shifts and night work.

When the Spanish health workers themselves were asked to identify their own perceptions of health problems associated with their occupation, their greatest concern was the risk of infection, followed by the physical effort - and frequently uncomfortable postures - which their work involved. Insufficient staff, and insufficient holidays, together with night work and rotating shifts, were further sources of stress.

These findings are amplified by a study of stress in health occupations (Heim, 1992) which found that stress was more pronounced amongst health workers other than physicians and more among women than men, partly because of the dual workload of family care and professional worker. The types of stress suffered by health workers related to their close involvement with patients, workload and lack of independence. The occupational health problems of carers thus appear to be similar whether or not the carer is paid for the work.

## 11. SEX WORKERS AND HEALTH

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### Introduction

The very notion of 'sex work' is controversial: it may be judged immoral or subjected to theoretical critique by those who argue that in selling sex a woman sells herself and that sex work is therefore always an institutional and personal abuse of those women who take part in it (Jeffreys, 1995).

But for many thousands if not millions of women, sex work is an occupation. While there are no global estimates of the number of women sex workers, the number is very large. Up to half a million women have been estimated to work in sex work in Thailand alone (Bloor, 1995) and the numbers are growing rapidly in countries like China and Eastern Europe where social change has permitted the sudden development of sex work on a large scale (Pan, 1996; Bolvary and Vacziz, 1996). Crossborder sex work, especially involving women from Central and Eastern Europe, is also on the increase (WHO, 1994).

How are we to understand the diversity facing health issues of this vast number of women engaged in sex work around the globe?

Sex work and its health issues cannot be understood as a unitary global phenomenon. Sex work is characterised by diversity of organisation and practices both across and within societies: the practices and problems engaged in by workers in the developed West are different to those of the developing world; women in different countries within those regions face different issues and within countries, women in the different sectors of sex work are differently circumstanced.

But despite diversity of organisation, practice and context, the major questions that need answers for the understanding of the occupational health of women sex workers are general and of global relevance:

To what extent are women able to practice the occupation under circumstances of their own choosing?

To what extent are women able to protect themselves from any adverse consequences of engaging in sex work?

The answers to these questions have to be sophisticated. A consideration of the occupational health of women in sex work has to consider the power relations within which sex workers operate. Freedom of choice is an empty phrase when women are effectively disempowered by

personal psychological factors or ignorance of the health consequences of behaviours, or by structural factors such as economic, social or legislative constraints.

Consideration of the adverse consequences of sex work has to be equally complex. Recent surveys and research on sex work have tended to focus on sex workers' potential for the transmission of HIV or other sexually transmissible diseases (Bloor, 1995; Day, 1988; McKeganey, 1994) and more is therefore known about the sexual health of sex workers than of their broader physical or mental health. In general terms the major hazards to sexual health are sexually transmissible diseases and resultant mortality, infertility and gynaecological problems; hazards to physical health relate to occupational exposure to violence and problems resulting from drug and alcohol use; mental health hazards arise from stigma and powerlessness and include low self-esteem, psychological problems and increased risk taking. The areas of physical and mental health hazards remain in particular need of research.

### **The developed world of the West**

Nearly ten years ago an editorial review in the journal 'AIDS' pointed to the gradual professionalising of sex work in the West (Day, 1988). Careful in-depth research carried out by Sophie Day and her collaborators pointed to the personal strategies employed by women to demarcate their commercial sex exchanges as work, primarily by using condoms, in contrast to non-commercial contacts where as a symbol of intimacy, condoms were not worn (Day and Ward, 1990). Since then, much research has shown this pattern of high condom use with commercial partners and low condom use with private partners to be characteristic of sex workers throughout the West.

As condom use is characteristically high in western sex work, consequent infection with HIV and other sexually transmissible diseases is low (McKeganey, 1994). Nevertheless condom use is not invariable and the reasons for this are incompletely known. There are some investigations that suggest the personal characteristics of sex workers play a part in their condom use (Vanwesenbeeck et al, 1994), but probably more important are the characteristics and the leverage of the other actors who constrain sex work, most notably customers of sex workers but also those who manage or orchestrate the circumstances of sex work such as brothel owners, pimps and police.

Research in these areas is only beginning but already commentators have pointed out that sex work is a 'strategic relationship' in that it is a site for specific techniques of power. When sex workers are in control and able to seize the interactional initiative in the sexual exchange, condoms are used; when clients are in control condoms are not used. As a recent survey of HIV transmission argues 'Where unsafe sex is occurring it is in response to the wishes of clients not prostitutes, and reflects the client's domination of the encounter' (Bloor, 1995).

This is not to argue that in the West most encounters between sex workers and clients are violently or even explicitly contested. A Dutch study of a large number of clients has suggested that most men consider themselves 'consistent condom users' (Vanwesenbeeck et al., 1994). However recent in-depth work among such men in New Zealand reveals them to abjure

responsibility and initiative for condom use and rather to acquiesce in worker control (Plumridge et al., 1997).

It is evident that sex workers in the West still continuously have to seek strategies for control of their working lives but understanding of the contexts that most empower this is incomplete. Whether prostitution is best legalised, decriminalised or legally circumscribed continues to be debated. In all jurisdictions, some sex workers do not fare well in terms of sexual health. Those involved with injecting drug use may be less able to insist on safer sex (de Graaf et al., 1995) with consequently more HIV and other infections (Bloor, 1995). Those from minority immigrant or indigenous groups are often those with the poorest health (de Graaf et al., 1992; Paschane et al., 1996); and those with poorest living conditions and resources give 'less priority to health' (Serre, 1996).

Violence remains a little researched issue in the lives of sex workers. While media reports may make this sensational, research on the topic indicates that for many sex workers violence is routine. A British Columbia study of street working women showed 77 per cent had experienced violence at work in the last six months, about 60 per cent of the women had been sexually assaulted, about 50 per cent had been beaten by a customer and 14 per cent had been robbed. About one third of the women had turned to the police while working, but only 11 per cent indicated police 'did a good job'; half found police treated them disrespectfully (Lowman and Fraser, 1995).

It is clear that different regimes of policing have differential effects (Larsen, 1996), but the impacts of legislation on sex worker health are far from fully understood. The highly varied legislative regimes that exist in Australian states present the opportunity to better understand the relationships between legislation and sex worker autonomy and health. It seems at present that legalisation may not be without its drawbacks: while women in legal brothels are reported to have good sexual health (Pyett et al., 1996), those in sectors operating outside legal regime are highly vulnerable to adversity including risk of death and physical injury (Neave 1994).

Even in circumstances where violence and coercion is not a major problem, the mental health of women can be affected by sex work. There are reports of women being emotionally numbed or worse by the routine of sex in which they engage (Day and Ward, 1990; Hoigard and Finstad, 1992) but such reports are not universal. There are reports of women who get at least a modicum of pleasure from their work (Perkins, 1994; Vanwesenbeeck et al., 1994), and some prostitutes' rights organisations have argued that sex work could potentially be an active expression of women's sexuality:

'Prostitution is marked in the present social context by power imbalances: gender, class and racial inequalities that structure society are played out in prostitution. ....Rights groups contend that if prostitutes were enfranchised and prostitution decriminalised then the means for actualizing the new prostitute identity on a collective basis would be in place' (Bell, 1994)

In reality however, organisations of sex workers in the West continue to lobby and organise for better social, political and legal frameworks to empower women in the sex industry. They are not always successful (van der Poel, 1995).

## The developing world

In general it is known that in some countries of the developing world, sex work has played an important role in the transmission of HIV infection. Infection rates have been reported to have increased dramatically among sex workers in some countries. In some parts of India infection rates among sex workers are reported to have increased from one per cent in 1986 to 38 per cent by 1994 (Bloor, 1995). A global survey of HIV infection rates among sex workers published that year presented infection rates as high as 62 per cent in some African cities and over 40 per cent in Thailand (McKeganey 1994).

The personal health implications of these aggregate figures can only be imagined, but no doubt the circumstances of sex work that underpin these figures are often grim: there are reports of enforced prostitution, trafficked women, financial indenture tantamount to slavery and children recruited into prostitution with consequent life-long physical and mental damage. Limited research is done on such abuses: it is not only difficult, but potentially dangerous. Research that does exist reveals circumstances of degradation that must have profound impacts on the health of sex working women. Women sold into sex work in Bombay have been reported to live their lives in single rooms where they rear their children, cook, clean and service their customers (Thanckar and Nigudkar, 1994). In parts of South America, the 'forgotten continent' of the HIV/AIDS epidemic, sex worker women are reported to work in deplorable conditions (Cornman, 1996).

But the picture is by no means uniformly hopeless or grim. HIV and other sexually transmissible diseases are not high in all parts of Africa. In some parts of India women whose work has traditionally been prostitution have managed to retain almost complete control of their working lives and have been able to insist on almost 100 per cent condom use by their customers (Bhatt and Baltes, 1994). In other countries, the health of women varies with the sector in which they work. In Thailand for instance, women in brothels and massage parlours have been able to secure much higher levels of condom use than women who work from disguised venues such as restaurants where sexual servicing is not explicit (Komatsu et al., 1996).

Sex work in developing countries is often characterised by social dislocation. For instance in China the number of sex workers is increasing rapidly and women are reported to be unable to protect themselves from the violence and demands for unsafe and unprotected sex from their customers (Pan, 1996). In Liberia, in the wake of war and military encampments vulnerable children have entered sex work, with adverse consequences for their sexual health (Elliot, 1996). On the other hand, sex work in other parts of the developing world have long traditions which may be either beneficial or adverse to the health of women engaged in it. In some parts of Africa, sex work is indistinguishable from forms of marriage. It may be highly variable even within a locality: sex work is reported to be practiced quite differently by different tribal groups in even one city (Bloor, 1995). But tradition may highly stigmatise sex work. In Turkey for instance sex workers are explicitly stigmatised and denigrated (Sunar, 1996). In countries where legislators attempt to develop new regimes to control sex work, the results may be disastrous for sex workers. In Argentina, the implementation of punitive measures against sex workers have driven sex workers away from interventions and agencies that assist their health; it is claimed that this legislation will contribute to the spread of AIDS and the personal misery and ill-health of sex workers (Vazquez, 1996).

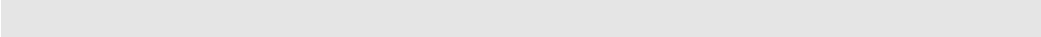
The picture of sex work in the developing world is thus highly complex and much remains unclear about the effects of social tradition and dislocation, and legislative regimes and implementation.

Sex tourism is also a phenomenon of sex work in developing countries, often on a massive scale. Some two million sex tourists a year are estimated to visit Thailand alone (Bloor, 1995), but sex tourism takes place in other countries of Asia, Latin and South America and eastern Europe. The effects of sex tourism are not clear and may not be unitary. Some reports indicate that the women can serve their own ends by catering to foreigners (Day, 1988), others that their male customers have almost unlimited power to secure even the unsafest forms of sex (O'Connell-Davidson, 1996; O'Connell-Davidson and Brace, 1996). Much remains to be understood about sex tourism.

## Conclusions

The occupational health of women in sex work varies with the meanings, customs and contexts of sex work in their local area. The most crucial determinant of their health however, is the degree of control they have over their working lives. In a general way it is clear that the interventions and contexts that enable women in sex work to control their working lives are better protection for their health as sex workers - and better protection for those who buy their sexual services. However, despite this general understanding a great deal more information and knowledge is needed about the specific contexts of sex work.

A combination of innovative methodologies and freedom from moral or cultural judgement will be necessary to illuminate these contexts and decide how best to protect the health of sex workers in an occupation that is both globally diverse and continuously subject to dynamic change. Western perceptions may colour understanding and misrepresent non-western practices, inflexible or narrowly focussed research techniques may fail to illuminate the complexity of the issues. While survey investigations can reveal information about sexual activity and its statistical co-factors relating to disease and morbidity, more than this is needed. We need a better knowledge of how personal, social, economic and legislative contexts constrain sex workers. Only then will we comprehend occupational health issues and solutions.



**Case Studies: Sex workers in Melbourne, Victoria**

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**1: Brothel Worker**

Margo was 34 years old and a single mother living with her two children. She had worked intermittently as a sex worker for six years and had become increasingly reliant on the money she could earn from regular shift work. She was now working three shifts a week in a licensed brothel. The main problems with the way she worked were that she was not paid unless she had any clients and the long shifts were often boring, particularly when custom was slow.

Margo had recently broken up with her partner, Dave, after coming to the conclusion that it was impossible to maintain a private relationship while doing sex work. Dave had become more and more moody and difficult, refusing to allow her to make any mention of work. She suspected that he was jealous of the sex she had with clients, although Margo did not feel that the sex she had with clients was anything like the sex she had with Dave. For one thing, Dave refused to use condoms and because she always used condoms at work, Margo felt she was safe with Dave. It was often difficult for her because Dave could be sexually demanding when she came home from work. While she would long for some affection from Dave after a long shift, she was not so keen to have sex so close to working. This became a source of many bitter arguments between them.

Margo had not told her family or friends that she was a sex worker and she hoped her children would never know. It was particularly stressful not being able to talk about work with Dave since he was one of the few people who knew what sort of work she did. She trusted one neighbour and had given this woman's phone number to the children's school and after-school care as she did not want to be contacted at the brothel. When Margo or one of the children was sick, she could not go to work and had to go without pay.

Margo got on well with the brothel manager and liked the way the brothel was run. The other workers were friendly and the management supported safe sex practices. When the women noticed that some clients began to expect sex without a condom, they suspected that one of the other workers was offering unprotected sex. Margo was very relieved when this worker left the brothel. Condoms and lubricant were supplied by the management and the brothel carried a Safe House endorsement from the Prostitutes' Collective. Margo had attended safe sex workshops and was confident that she could protect herself from STDs. She always examined the clients as part of the massage service and would not provide a sexual service if she suspected the client had an STD. Margo would call in another worker and together they would advise the client to seek medical attention. If the client was difficult or threatened to be violent, the workers would call the manager immediately and the client would be removed.

**Case Studies: Sex workers in Melbourne, Victoria** (*continued*)**2: Street Worker**

Danni was 17 years old and had been working on the streets for 18 months. She had been sexually abused by her step-father and was made a ward of state when she was seven. She had lived in numerous foster-homes and ran away from the last one when she was abused again. For a short time she lived in a state hostel where she was befriended by another young woman who encouraged her to try sex work. Together they would escape from the hostel at night and return in the early hours of the morning. Although Danni hated the work, she wanted to be able to save enough money to be able to rent a flat with her friend.

She began using drugs to help her get through the nights and forget about the sexual acts she had to perform. Danni hated having any kind of sex without a condom but sometimes she ran out of condoms and would try to get away with doing only oral sex. She worried about STDs and felt sure she would end up catching something. Because she was too young to be able to rent a room herself, Danni just let the clients take her wherever they chose. She usually performed the service in the client's car, but sometimes let the man take her to a hotel room. Sometimes the effects of the drugs meant that she was not in control and she cannot be sure what happened with some of her clients.

Every night she was afraid she 'would end up killed or dead' but although she tried to assess a client before she got into his car, she relied on her instincts and just hoped she would be safe. She had been punched and kicked by one man who had wanted sex without a condom, and another had held a knife to her throat before he threw her out of the car without paying her. Danni had never reported these assaults to the police because she was afraid she would be prosecuted and fined for soliciting.

Her drug habit was taking more and more of her money and even when she had worked five or six nights a week she had not been able to accumulate any savings. For a few months she lived with her dealer and was exchanging sex for drugs but she was kicked out when he was busted by the police. Since then Danni had been moving between crisis accommodation, backpacker hostels, motels, hotels and squats. Because of her irregular lifestyle and working hours, she found it difficult to establish routines or eat regular meals. She relied on fast foods and slept when and where she could. It was not uncommon for her to realise it was two days since her last meal. She often feels severely depressed but has no-one other than a welfare worker to turn to for support.

## 12. SEXUAL HARASSMENT IN THE WORKPLACE

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A good work environment requires not only the elimination of health hazards at work, but also that health and well-being be actively promoted. More research and better statistics are needed to describe the risks and psychosocial conditions faced by women at work. One such emerging risk factor is sexual harassment.

Sexual harassment, or unwanted sexual attention or sexually motivated behaviour that embarrasses a female worker, is not a new phenomenon, but it is only recently that the business world, unions, and individual workplaces have started to take it seriously. The term first came into use around 1974. Since then, the discovery of sexual harassment in the workplace has received considerable attention. During the 1980s there was a growing awareness that sexual harassment was a widespread problem (Rubenstein, 1992; World Bank, 1994).

Sexual harassment is really a new name describing an old problem. There has been a tendency to 'silence' its existence, and not until recently was a common terminology invented to describe it. Today, there is a growing body of empirical research documenting the incidence of sexual harassment at work. The expert report carried out on behalf of the European Commission (1993) found that sexual harassment is a serious problem for many working women in the European Community. Research in its member states, including Germany, France, the Netherlands and Denmark has proven that sexual harassment at work is not an isolated phenomenon affecting a few individual women. On the contrary, it is clear that for millions of women in the European Community, sexual harassment is an unpleasant and unwanted part of their daily working lives.

### Definitions of sexual harassment

Sexual harassment is a complex social problem, and there is no single and precise definition for it. Since sexual harassment is a subjective experience, drawing a line between harassment and a friendly encounter or flirting is not always easy. However, certain objective characterisations have been formulated based on new research evidence. The legislation against sexual harassment is based on these definitions and formulations.

A generally accepted view (shared by the European Commission, among others) is that sexual harassment means unwanted conduct of a sexual nature, or other conduct based on sex affecting the dignity and well-being of women (and men) at work. The essential character of sexual harassment is that it is unwanted and unwelcome by the recipient. What distinguishes sexual harassment from friendly sexual behaviour or flirtation is that

it is not mutual; it is not welcome, it offends, and it threatens. Sexually unwelcome behaviour makes the affected person feel uncomfortable and uneasy at work (Rubenstein, 1988; Vaux, 1993).

The European Commission (Wilson, 1995) lists sexual harassment into five categories:

- ?? Non verbal (e.g. pin-ups, leering, whistling and suggestive gestures)
- ?? Physical (e.g. unnecessary touching)
- ?? Verbal (e.g. unwelcome sexual advances, propositions or innuendo)
- ?? Intimidation (e.g. offensive comments about dress, appearance, or performance)
- ?? Sexual blackmail.

Sexual harassment can take many forms. It may involve physical contact as when someone is patted, stroked, or held against their will. Being pinched, squeezed, grabbed, groped, and more serious sexual assaults all constitute physical sexual harassment. It may be verbal or psychological: staring, leering, standing too close for comfort, being followed, threatening body postures, sexual remarks or taunting, obscene gestures or jokes, explicit conversations about sex which cause offence, as well as subtle or explicit pressure for sexual activity. Non-verbal harassment refers to the display of sexually suggestive pictures, sexist calendars, objects or written materials, whistling, looking ('elevator look') or making suggestive gestures (Wilson, 1995).

According to various surveys, verbal abuse or verbally suggestive comments (such as jokes, emotional come-ons) are the most frequent forms of harassment, followed by non-verbal harassment (touching, following, leering), and relational or sexual pressures. This order persists in spite of large differences among these surveys: verbal comments are the most frequent forms of harassment, followed by sexual posturing (e.g. leaning, following), sexual touching, sexual bribery, and sexual assault (Rubenstein, 1992; Gruber et al., 1966).

There are differences in men's and women's perceptions and interpretations of sexual harassment. Women are more likely to define behaviour as harassing than men, whereas men are more likely than women to view sexual behaviour at work favourably (Gutek, 1985). A comprehensive Finnish study on sexual attitudes and behaviour (Kontula & Haavio-Mannila, 1993) showed that men and women experienced sexual attention at work in different ways. Of the men who had been objects of various kinds of sexual activity or initiative that they had not initiated (such as verbal harassment, jokes or teasing, sexually suggestive gestures, pinching or touching), half found these activities positive and half offensive. Of the women, an overwhelming majority found them offensive and intimidating. It would appear that men and women view the same situations differently. It is important, however, to note that not all women and men interpret sexual behaviour in the same way: there is a whole range of individual variation.

## **Consequences of sexual harassment**

The consequences of unchallenged sexual harassment are to poison the organisational culture, both in the long term and on a daily basis. Sexual harassment creates an intimidating, hostile and unfriendly working atmosphere (Rubenstein, 1988; ILO 1992). Psychologically, sexual harassment results in anxiety, tension, irritability, depression, inability to concentrate, sleeplessness, fatigue, headaches, and other manifestations of stress at work (Wilson, 1995). There is also growing evidence to suggest that women experience guilt and self-blame over harassment (Nicolson 1996). Well-documented research has shown that sexual harassment results in damaging emotional, physical and work-performance stress; it leads to absenteeism, sick leave, being less efficient at work, or leaving the job to seek work elsewhere (Commission of the European Communities, 1993).

Sexual harassment has a direct impact on a company's profitability and economic efficiency when the employees' productivity and motivation are reduced by having to work in a climate in which the individual workers' integrity is not respected. Additional expenses are the costs of investigating

and defending complaints, legal costs, as well as the business cost of losing public goodwill after negative publicity. It has been reported that sexual harassment costs a typical Fortune 500 company approximately US\$ 6.7 million each year as a result of lowered productivity, low morale, and increased absenteeism and turnover (Wilson, 1995).

## **Psychodynamics of sexual harassment**

Sexual harassment happens to men as well as women, but rarely (Gruber et al., 1996; Järholm, 1996). Most surveys have found that harassment is predominantly perpetrated by men against women. Gutek (1985) has estimated that perhaps one to two per cent of men experience sexual harassment in their working lives, which observation accords with the results found in the Nordic studies. Most vulnerable males are young men working in female-dominated work groups, for example as nurses or daycare workers (Kauppinen and Lammi, 1993).

Sexual harassment points to the unequal power relations between men and women at work (Nichols, 1993; Lorber 1994). Sexual harassment has been found to be a means by which the more powerful control, manipulate or even humiliate persons with less power. It is still rare for a woman to hold the organisational power position that would allow her to reward a man for sexual co-operation, or punish him for withholding it (Wilson, 1995). Sexual harassment is seldom an attempt to initiate a sexual relationship (it is not romantic), but rather a use of power by men against women (Rubenstein, 1992).

Sexual harassment is disproportionately perpetuated by male supervisors or managers upon female subordinates. In Britain, it is estimated that 94 per cent of the harassers are supervisors or members of management (Wilson, 1995). It appears that sexually offensive behaviour and attitudes by a person in a position of authority are more apt to be perceived as 'severe' and threatening than those by a peer or a subordinate (Gruber et al., 1996). There is a correlation between bullying or mobbing behaviour and sexual harassment (Kauppinen-Toropainen, 1993).

The psychodynamics of sexual harassment tend to maintain an unequal power structure between the sexes, forcing women into compliance with sexual aspects of their traditional role (Gutek, 1985). Such behaviour defines women's role as sexual object rather than as colleague. This is most typically the case when women are entering formerly all-male workplaces, schools or professions, where there is a fear that prestige, status and salary levels may be undermined by an influx of women. Thus the members of the majority gender group (males) guard their territory in the workplace or schools through sexual harassment. This type of behaviour is aimed at undercutting women's position and work performance; the purpose is to shake women's assertiveness and ambitions (Lorber, 1994).

### **Research into sexual harassment**

There is a growing body of empirical research on sexual harassment at work. The research findings vary according to the group or the sample questioned, the size, levels of knowledge as to the problem, and the precise questions asked. Sexual harassment takes place in all sort of work situations including military units, government agencies, factories, hospitals, and religious organisations. It can happen in the academic world too.

A survey of 776 women students at Cambridge University carried out in 1989 found that one in ten had suffered unwanted sexual attention from academic staff, most of it mild: suggestive looks and remarks, sexual jokes, and being 'eyed up'. However, two per cent said that the harassment had taken the form of requests for dates or sex and unwanted kissing, touching, and grabbing (Wilson, 1995).

Similar results have been found in Sweden (Hagman, 1988) and most recently in Finland. A survey by the Helsinki University Equality Office in 1995 found that seven per cent of the academic staff and three per cent of the students (mostly females) reported having been sexually harassed during the preceding 24 months. Flirting was experienced as something positive by most of the students, while typical harassment cases involved innuendoes and dubious jokes (Mankinen, 1996).

In a national Swedish survey in 1993, two per cent of women and one per cent of men reported sexual harassment. Sexual harassment was more common for women if they worked in restaurants or hotels or drove a bus or taxi. More than half the women who had been harassed had feelings of anxiety and uneasiness when they went to work. They also reported sleep disturbance and fatigue more frequently (Järholm, 1996). Other Swedish studies have reported somewhat higher frequencies of harassment for women. The differences are probably due to a combination of differences in interview technique and definitions of harassment.

Other national surveys have also reported quite widespread experience of sexual harassment amongst women. Out of all French men and women aged 18 and above, one-fifth had firsthand experience of sexual harassment and nine per cent of working women had experienced highly or moderately unpleasant situations. A further six per cent of women had witnessed harassment cases. In Germany, of the women surveyed, 72 per cent had encountered situations at work which the majority classified as sexual harassment. (Commission of the European Communities, 1995). A survey by the US Merit Systems Protection Board (1981) found that 42 per cent of

women and 15 per cent of men reported having been sexually harassed during the preceding 24 months. In 1987, the Labour Research Department indicated that three quarters of 157 British workplaces reported sexual harassment (Wilson, 1995).

A national Finnish study in 1995, based on a representative sample of the working population, showed that five per cent of the women and two per cent of the men reported having been sexually harassed during the preceding 24 months. Sexual harassment was most typical in those workplaces where other types of personal conflicts were also common; for example, supervisor/subordinate conflicts, conflicts between colleagues, and conflicts between different occupational groups. For women, there was a significant correlation between sexual harassment and a sense of sexual discrimination. Women in leadership positions experienced less harassment than women who did not have a position of authority. In addition, less educated women reported having been sexually harassed more often than women with better education. Women under the age of 34 mentioned sexual harassment somewhat more often than older women.

The typical occupational groups in which women encountered the most harassment were police officers (51 per cent mentioned harassment), technicians (26 per cent), and construction workers (24 per cent). The harassment came not only from colleagues but from customers or service consumers: again female police officers (35 per cent) experienced most harassment. Those women who experienced sexual harassment also experienced sexual discrimination to the extent that it had interfered with their achievement at work. The most frequently faced form of sexual harassment involved verbal remarks and teasing, while the next most frequent was touching, brushing against, and grabbing. Only a few mentioned unwanted requests for dates or sex (Högbacka et al., 1987).

Similar results are found in the 1988 Australian survey by Savery and Gledhill (cited by Wilson, 1995). The most common form of harassment was jokes or conversations about women which the respondent found offensive: 66 per cent of respondents had experienced this type of harassment and 20 per cent had experienced it frequently. Only about two per cent had experienced the most severe form of sexual harassment: an attempt by a male co-worker to force the respondent to have sexual intercourse.

A unique study by Haavio-Mannila et al. (1996) found that 12 per cent of a representative sample of women surveyed in St. Petersburg, Russia, in 1996 had been objects of sexually suggestive looks or gestures which they found offensive during the previous 24 months at work. Five per cent had been objects of unwanted pressure to have sex. The most common form of sexual harassment was verbal harassment, involving obscenities, dubious jokes and remarks; 16 per cent of the women had been exposed to this kind of harassment.

Some specific groups of women are particularly vulnerable to sexual harassment at work. Research in several European countries suggests that divorced and separated women, young women and new entrants to the labour market, those with irregular employment contracts, women in non-traditional jobs and women from racial or ethnic minorities are disproportionately at risk (Commission of the European Communities, 1993).

A similar pattern of vulnerability appears in one of the very few studies conducted outside the Western countries. In this unique case study undertaken in Beijing by Le Ping (1995), sexual

harassment was presented as a social problem facing an increasing number of Chinese women at work. Most of the harassment victims were young women between the ages of 22 and 27. The incidents happened at offices or public places related to work. All the harassers were men, the majority of them in a leading position. In some cases the harasser was a foreign boss. All of the female victims were afraid of reprisal and unemployment as well as social prejudice if they made a complaint. The victims were confused and often ashamed. Therefore most of them took no action, or had a passive attitude toward harassment (cited by Kauppinen, 1996).

Those few studies which are available from less developed countries (for example, India, Bangladesh, and South Africa) show that sexual harassment is linked with women's disadvantaged status at work and subordinated position in society. Sadly, women too easily fall victims to harassment and exploitation, due to their more vulnerable position, cheap labour, and 'docile' nature (Doyal, 1995). This is particularly true in countries where women are only beginning to integrate fully into the labour market. Those national and multinational companies which are investing in less developed and rapidly industrialising societies have to assume more responsibility for the working conditions and the health and well-being of their female workers. (Kauppinen 1996.)

### **Policy implications**

Sexual harassment law is relatively new; it began its modern development in the mid-1970s in the United States, around the same time the term 'sexual harassment' first came into use. The concept, in a legal sense, has been exported from the United States to other countries, including Australia, Canada, Japan and a number of countries in Western Europe. Many of these countries saw the appearance of the words 'sexual harassment' in a formal legal sense for the first time in the 1980s or at the beginning of the 1990s, but this exported legal concept has already been subject to important modifications in these countries (Commission of the Economic Communities, 1993).

Sexual harassment legislation falls into two broad categories: being prohibited under a variety of equal opportunity, and labour or labour protection, laws. In some countries, equal opportunity laws explicitly mention sexual harassment in the text. Equal opportunity laws are normally applicable to both women and men, although the role of the laws in promoting the equality of women is highlighted. Hence, both women and men are protected from sexual harassment, although the protection of women is usually stressed. The legislation aims to promote preventive action by the employer. The employer can be seen to act against the law when allowing sexual harassment to happen without actively intervening to counter it.

In United Kingdom, sexual harassment is considered to be direct discrimination under the Sex Discrimination Act. Under sexual discrimination law it is a company's responsibility to ensure all reasonable action has been taken to prevent harassment taking place at work. Employers have responsibilities towards their employees under both common law and statute, including the Sex Discrimination Acts, Employee Protection Acts and Health and Safety Acts (Wilson, 1995).

In Finland a new tool, equality planning, has been implemented. Adapted from the Swedish Equality Act which obliges employers with at least 10 employees to do equality planning, the Finnish Equality Act obliges the authorities and

employers to promote equality purposefully and systematically. An employer with at least 30 employees shall include the measures to promote equality in an annual personnel and training plan or in its labour safety programme. These measures should promote the opportunities of both men and women to reconcile working life and family life and see to it that sexual harassment does not occur at workplaces (Ministry Social Affairs and Health, 1996). Labour law or labour protection legislation also provides a significant element of protection against sexual harassment at work. According to labour protection legislation in various countries, employers are to show respect for 'propriety and decency' during the employment relationship (Belgium); or are 'responsible for an employee's physical and moral integrity' (Italy), or have to ensure good working conditions 'both physically and morally' (Portugal).

In harassment cases, it is often difficult to find objective proof or documentation about what has happened. Thus it is important to advise people, and especially women, how to document harassment-related occurrence. The vast majority of cases do not reach the ears of management because victims are unlikely to report incidents. Victims are usually scared about the effect a complaint may have: they might be labelled a trouble maker and often there are no witnesses. As a result many react passively, try to ignore the harasser and keep silent.

The prevention of harassment involves giving advice and consultation, as well as providing help for the affected persons. It is important to sensitise both men and women about behaviours and attitudes which may have implications for harassment. Men have a central role in creating harassment-free workplace culture. This depends, firstly, on the fact that women are generally, but not always, the victims of harassment by men, and secondly, that men are more often in positions of authority and have more influence on the workplace atmosphere. Also, as was indicated before, sexual harassment is most typically perpetuated by male supervisors or managers upon female subordinates.

Because it appears that men and women view the same situation differently, educational programmes need to acknowledge the different understanding of the concept of harassment. Eradicating sexual harassment involves a major challenge to attitudes.

Recently, several such interventions and training programs have been created to sensitise both men and women to harassment issues at work. One such attempt, in Sweden, was to create a 'sex-free zone' in the workplace. The idea did not gain much acceptance and was seen as imposing unrealistic and puritanical standards.

In individual workplaces, sexual harassment guidelines and educational programmes should acknowledge that sexual harassment is more than isolated misconduct and regard it as discrimination. They need to refer to a whole range of harassment from subtle innuendoes to assaults recognising that sexual harassment occurs between people who have unequal power. Gruber et al. (1996) have created a list which presents sexual harassment types according to their experienced severity. This list can be a helpful tool regarding both documentation, sensitisation and policy implications in individual workplaces, assisting each workplace to create its own preventive policy.

## BIBLIOGRAPHY

- Abramson, J.H., Hopp, C., Epstein, L.M. 1981, 'The epidemiology of varicose veins' *Journal of Epidemiology & Community Health*, 35:213-217
- Adnan, Shapan 1993, 'Birds in a cage: Institutional change and women's position in Bangladesh' in *Women's Position and Demographic Change* eds N. Federici, K. Oppenheim Mason & S. Sogner, Clarendon Press, Oxford, 285-318
- Agarwal, B. et al, 1990, *Engendering Adjustment for the 1990s: Report of a Commonwealth Expert Group on Women and Structural Adjustment*, Commonwealth Secretariat, London
- Ajuntament de Barcelona, Area de Salut Publica 1992, *Salud y Ambiente de Trabajo en Barcelona 1992*, Impremta Municipal, Barcelona
- Anesheusel, C. 1986, 'Marital and employment role/strain, social support and depression among adult women', in *Stress, Social Support and Women*, 99-114
- Angell, M. 1993, 'Caring for women's health: what is the problem?' *New Eng. J. Med* 32(4), 271-72
- Aromaa, K. 1993, 'Survey results on victimization at work' in *OECD panel group on Women, Work and Health*, vol. 6, Ministry of Social Affairs & Health Publications, Helsinki, 136-140
- Australian Bureau of Statistics (n.d.) *1991 Census of Population and Housing: Community Profile*, Cat. no. 2772.0, Government Publishing Service, Canberra
- Australian Bureau of Statistics 1994, *Australian Women's Year Book*, ABS Catalogue no 4124.0, Government Publishing Service, Canberra
- Australian Bureau of Statistics 1996, *Women's Safety Australia*, Government Publishing Service, Canberra
- Banzon-Bautista, C. & Dungo, N.G. 1987, 'The differential impact of farm technology on men and women: a case-study of two Philippine villages', in *Women Farmers and Rural Change in Asia: Towards equal access and participation*, ed. N. Heyzer, Asian & Pacific Development Centre, Kuala Lumpur, 257-312
- Barnett, R.C. 1993, 'Multiple roles, gender and psychological distress' in *Handbook of Stress: Theoretical and Clinical Aspects*, 2nd edn, eds L. Goldberger & S. Breznitz, The Free Press, New York, 427-445
- Barnett, R. 1994, 'Women and work', *Novo Nordisk International Symposium, Copenhagen, Denmark*, eds P. Sarrel & L. Sarrel, Novo Nordisk, Denmark, 49-53
- Barnett, R.C. & Baruch, G.K. 1985, 'Women's involvement in multiple roles and psychological distress', *J Pers. Soc. Psychol* 49:135-145
- Baruch, G., Beiner, L., & Barnett, R. 1987, 'Women and gender in research on work and family stress', *Am Psychol* 42:130-136

- Basu, A.M. 1996, 'Girls' schooling, autonomy and fertility change: What do these words mean in south Asia?' *Girls' Schooling, Women's Autonomy and Fertility Change in South Asia*. eds R Jeffery & A.M. Basu, Sage Publications, New Delhi, 49-71
- Basu, A.M. 1996, 'Women's economic roles and child health: An overview', *Population & Women*, ST/ESA/SER.R/130 United Nations, New York, 312-321
- Bathia, S., Chen, et al, 1985, *Status and Survival*, World Health Statistics Annual, WHO, Geneva
- Beermann, B. & Barbel, M. 1995, *Psychological Factors at the Workplace taking account of Stress and Harassment*, Federal Institute for Occupational Safety & Health, Dortmund
- Bell, S. 1994, *Reading, writing and rewriting the prostitute body*, Indiana University Press, Bloomington
- Benerías, L., Feldman, S. 1992, *Unequal burden, Economic Crises, Persistent Poverty and Women's Work*, Westview Press, Colorado
- Bhatt, P. & Baltes, R. 1994, '100% condom use for Badii sex workers in Nepal', *Paper to 10th international Conference on AIDS, Yokohama*
- Blatter, B.M. & Zielhuis, G.A. 1993, 'Menstrual disorders due to chemical exposure among hairdressers' *Occupational Medicine* 43:105-106
- Blishen, B.R., Carroll, W.K., Moore, C. 1987, 'The 1981 socioeconomic index for occupations in Canada' *Can. Rev. Soc & Anth.* 24:465-488
- Bloor, M. 1995, *The sociology of HIV transmission*, Sage, London, & Thousand Oaks, New Delhi
- Boitel, L., Courthiat, M.C., Halter, J., Jabot, F., Leroux, C., Robaux, P., Chau, N., Legras, B., Martin, J. 1982, 'Travail et pathologie variqueuse. Etude epidemiologique' *CAMIP* 85:15-27
- Bolvary, K. & Vacciz, M. 1996, 'Four year's experiences of the AIDS outreach program for sex workers in Budapest', *Paper to the 11th International Conference on AIDS, Vancouver*
- Browne, A. & Williams, K. 1989, 'Exploring the Effect of Resource Availability and the Likelihood of Female-Perpetrated Homicides', *Law & Society Review* 23(1)
- Brown, G.W., & Harris, T. 1978, *Social Origins of Depression*, Tavistock Publications, London
- Bullock, S. 1994, *Women and Work*, Zed Books, London
- Cain, M., Syeda Rokeya Khanam & Shamsun Nahar 1979, 'Class, Patriarchy and Women's Work in Bangladesh' *Population & Development Review* 5(3):405-438

- Caldwell, J.C., Caldwell, P. Ankrah, E.M., Anarfi, J.K., Agyeman, D.K., Awusabo-Asare, K. & Orubuloye I.O. 1994, 'African Families and AIDS: Context, reactions and potential interventions' in *Sexual Networking and AIDS in Sub-Saharan Africa*, Health Transition Series no. 4, eds I.O. Orubuloye, J.C. Caldwell, P. Caldwell & G. Santow, Australian National University, Canberra, 235-248
- Carrasco, C. 1991, *El trabajo domestico y la reproduccion social*, Institutode la Mujer, Madrid
- Chan, O.Y. 1994, 'Health of Female Shiftworkers in Singapore', *Ann Acad Med Singapore*, 23:706-9
- Chatterjee, M. 1991, 'Women organizing', *Presentation to the 18th Annual National Council on International Health Conference*, Arlington, Virginia
- Cochrane, R., & Stopes-Roe, M. 1981, 'Women, marriage, employment and mental health' *Br J Psychiat* 139:373-381
- Cornman, H. 1996, '“La Scala” a novel educational approach for sex workers in Guatemala City' *Paper to 11th International Conference on AIDS, Vancouver*
- Costello, E. 1991, 'Married with children: predictors of mental and physical health in middle-aged women' *Psychiatry* 54:292-305
- Courville, J., Vezina, N., Messing, K. 1992, 'Analyse des facteurs ergonomiques pouvant entrainer l'exclusion des femmes du tri des colis postaux', *Le travail humain* 55:119–134
- Cox, T. & Cox S. 1988, 'Working women: occupational health and safety. in *Topics in Health Psychology* eds S, Maes, C.D. Spielberger, P.B. Defares & I.G. Sarason, John Wiley & Sons (n.p.)
- Dahl, E. 1994, *Sosial ulikhet i helse: Artefakter eller seleksjon?*
- David, H. 1986, *Femmes et emploi:Le defi de l'egalite*, Les presses de l'Univerite du Quebec, Montreal
- Day, S. 1988, 'Prostitute women and AIDS: anthropology', Editorial Review, *AIDS* 2:421-428
- Day, S. & Ward, H. 1990, 'The Praed Street project: a cohort of prostitute women in London', in *AIDS, Drugs and Prostitution*, ed. M.A. Plant, Routledge, London
- de Graaf, R., Vanwesenbeeck, I., van Zessen, G., Straver, C. & Visser, J. 1992, 'Condom use and sexual behaviour in heterosexual prostitution in the Netherlands', *AIDS* 6(10):1223-1225
- de Graaf, R., Vanwesenbeeck, I., van Zessen, G., Straver, C. & Visser, J. 1995, 'Alcohol and drug use in heterosexual and homosexual prostitution and its relation to protection behaviour', *AIDS Care* 7:33-45
- Dennerstein, L., Astbury, J., Morrow, M. 1995, 'Teaching Women's Health', *Paper presented to the Eleventh Commonwealth Health Ministers Meeting, 7-11 December, Cape Town, South Africa*
- Devis, T. 1993, 'Measuring mortality differences by cause of death and social class defined by occupation' *Population Trends* 73:32-35

- Diaz Barr, X., Medel, R.J. & Schlaen, N.N. 1994, 'Condiciones de trabajo, salud y demanda de atención médica en trabajadoras de la industria y la fruticultura', in *Mujer, Salud y Desarrollo*, N. Donoso Valenzuela & S. Pezoa Berto
- Dixson, R.B. 1982, 'Women in agriculture: Counting the labour force in developing countries', *Population & Development Review* 8(3):539-566
- Dobrev, B., Israel, M.S. & Todorova L.C. 1982, 'Radiofrequency electromagnetic fields as a risk factor in different professional groups in Bulgaria', *J. Occupational Accidents* 4:187
- Doyal, L. 1995, *What Makes Women Sick: Gender and the Political Economy of Health*, Mac Millan Press, London
- Draganova, N. & Kamenova Z. 1996, 'Musculo-skeletal diseases among female workers', *Women Work Health: International Congress Barcelona, April 17-20*, Dona, Salut i Qualitat de Vida, Barcelona
- Drew, E., Emerek, R. & Mahon, E. 1995, *Families, Labour Markets and Gender Roles*, European Foundation for the Improvement of Living and Working Conditions, Dublin
- Duran, MA. 1988, *De puertas adentro*, Instituto de la Mujer, Madrid
- Dyson, T. & Moore M. 1983, 'Kinship structure, female autonomy and demographic behaviour in India' *Population & Development Review* 9(1):35-60
- Eelens, F. 1995, 'Migration of Sri Lankan Women to Western Asia', *International Migration Policies and the Status of Female Migrants: Proceedings of the United Nations Expert Group Meeting, San Miniato Italy 28-31 March 1990*. ST/ESA/SER.R/126, Population Division, United Nations, New York, 267-277
- Elliot, L. 1996, 'Child prostitution: a case study in military camps in Liberia' *Paper to 11th International Conference on AIDS, Vancouver*
- Enloe, C. 1995, 'The globetrotting sneaker', *Ms Magazine* March/April:10-15
- Eurostat 1995, *Women and Men in the European Union: A Statistical Portrait*, Office for Official Publications of the European Communities, Luxembourg
- Fallentin, N., Juul-Kritensen, B., Hansen, K. 1996, 'Physical exposure assessment in a prospective study of workrelated musculoskeletal disorders' *Proc. Int. Cong. Occup. Health* 1:99
- Ferguson, A. 1986, 'Women's health in a marginal area of Kenya' *Social Science & Medicine* 23(1):17-29
- Figà-Talamanca, I. & Hatch, M. 1994, 'Reproduction and the workplace: What we know and where we go from here. *Inter J Occup Med & Toxicol* 3(3):279-303
- Firth-Cozens, J. 1990, 'Sources of stress in women junior house officers. *British Medical Journal* 301:89-91
- Fletcher, A.C. 1985, *Reproductive Hazards of Work*, Equal Opportunities Commission, Manchester
- Fong, M. S. 1993, 'The role of women in rebuilding the Russian economy', *Studies of Economies in Transformation* no. 10, World Bank, Washington
- Fox, J. 1977, 'Occupational Mortality 1970-72' *Population Trends* 9:8-15

- Fox, J. & Goldblatt, P. 1982, 'Socio-demographic differences in mortality', *Population Trends* 27:8-13
- Franck, C., Bach, E., Skov, P. 1993, 'Prevalence of objective eye manifestations in people working in office buildings with different prevalences of the sick building syndrome compared with the general population', *Int Arch Occup Environ Health* 65:65-9
- Frankenhauser, M. 1989, *Stress, Health, Job Satisfaction*, Swedish Environment Fund, Stockholm
- Frankenhauser, M. 1991, 'The psychophysiology of sex differences as related to occupational status', in *Women, Work and Health: Stress and Opportunities*, eds M. Frandenhaeuser, U. Lundberg & M.A. Chesney, Plenum Press, New York
- Frankenhaeuser, M. 1994, 'Women, stress and leadership' *Novo Nordisk International Symposium, Copenhagen, Denmark*, eds P. Sarrel & L. Sarrel, Novo Nordisk, Denmark, 35-44
- Gerhardsson, L. & Ahlmark A. 1985, 'Silicosis in women: experience from the Swedish pneumoconiosis register', *J Occupational Health* 27(5):347-350
- Gervais, M. 1993, *Bilan de sante des travailleurs quebecois*, Institut de recherche en sante et en securite du travail du Quebec, Montreal
- Gove, W.R., & Tudor, J.F. 1973, 'Adult sex roles and mental illness' *Am J Sociology* 78:50-73
- Greenberg, G.N. & Dement, J.M. 1994, 'Exposure assessment and gender differences' *Journal of Occupational Medicine* 36(8):907-912
- Grobbelaar, J.P. & Bateman, E.D. 1991, 'Hut Lung: a domestically acquired pneumoconiosis of mixed aetiology in rural women' *Thorax* 46:334-340
- Gruber, J. 1992, 'A typology of personal and environmental sexual harassment: Research and policy implications for the 1990's' *Sex Roles* 26:447-464
- Gruber, J., Smith, M. & Kauppinen, K. 1996, 'Sexual Harassment Types and Severity: Linking Research and Policy' in *Women & Work*, Vol 6, ed. B. Gutek
- Gutek, B.A. 1985, *Sex and the Workplace: The Impact of Sexual Behavior and Harassment on Women, Men, and Organizations*, Jossey-Bass, San Francisco
- Gutek, B. et al, 1991, 'Rational versus gender role explanations for work-family conflict', *Journal of Applied Psychology*, 76:560-568
- Guyon, L. 1996, *Derriere les Apparences: Sante et Conditions de Vie des Femmes*, Ministere de la sante et des services sociaux, Quebec, p. 346
- Haavio-Mannila, E., Kauppinen-Toropainen, K. & Kandolin, I. 1991, 'Työyhteisön sukupuolijärjestelmä' (Gender system of the working life), (In Finnish with English and Swedish summaries), *Työ ja ihminen* 5(3):185-196
- Haavio-Mannila, E. et al 1997, *Social Change and Cultural Inertia in Russia*, Department of Sociology, University of Helsinki

- Haertel, U., Heiss, G. et al 1992, 'Cross-sectional and longitudinal associations between high density lipoprotein cholesterol and women's employment', *American Journal of Epidemiology* 135:68-78
- Hagberg, M., Morgenstern H., Kelsh, M. 1992, 'Impact of occupations and job tasks on the prevalence of carpal tunnel syndrome', *Scandinavian Journal of Work Environment and Health* 18:337-345 Table 2
- Hagberg, M., Silverstein, B., Wells, R., Smith, M. J., Hendrick, H.W., Carayon, P., Perusse, M. 1995, *Work-related Musculoskeletal Disorders: A Reference Book for Prevention*. Taylor & Francis, London
- Hagman, N. 1988, *Sex-trakasserier på jobbet* (Sexual harassment on the job) (in Swedish), Wahlström & Widstrand, Helsingborg
- Hall, E.M. 1989, 'Gender, work control and stress: A theoretical discussion and an empirical test' *Int. J. Health Serv.* 19:725-745
- Harlow, S.D. 1986, 'Function and dysfunction: a historical critique of the literature on menstruation and work' *Health Care Women Int* 7:39-50
- Harrison, J., Pickering C.A.C., Faragher E.B., Austwick P.K.C., Little S.A., Lawton L. (1992). An investigation of the relationship between microbial and particulate indoor air pollution and the sick building syndrome. *Respiratory Med* 86:225-35
- Hatch, M., Friedman-Jimenez, G. 1991, 'Using reproductive effect markers to observe subclinical events, reduce misclassification, and explore mechanism' *Environmental Health Perspectives* 90:255-259
- Heim, E. 1992, 'Stressoren der Heilberufe' *Zeitschrift für psychosomatische Medizin und Psychoanalyse* 38(3):207-226
- Heise, L. 1993, 'Violence against women: The missing agenda' in *The Health of Women: A Global Perspective*, ed. M. Koblinsky, Westview Press, Colorado, USA
- Hibbard, J. & Pope, C. 1991, 'Effect of domestic and occupational roles on morbidity and mortality' *Social Science in Medicine* 32:805-811
- Hodgson, M.J., Frohlinger, J., Permar, E., Tidwell, C., Traven, N.D., Olenchock, S.A., Karpf, M. 1991, 'Symptoms and microenvironmental measures in nonproblem buildings' *J Occup Med.* 4:527-33
- Hoffman, B. & Meyer, I. 1992, 'Neue perspektiven für frauen auf dem bau?' *Soziale Sicherheit* 41(5):149-152
- Högbacka, R., Kandolin, I., Haavio-Mannila, E. & Kauppinen-Toropainen, K. 1987, 'Sexual harassment in the workplace: Results of a survey of Finns' in *Sexual Harassment. Equality Reports*, Series E, Abstracts 2/1987, Ministry for Social Affairs and Health, Helsinki, 9-42
- Hoigard, C. & Finstad, L. 1992, *Backstreets Prostitution, Money and Love*, Pennsylvania State University Press, University Park, Pennsylvania
- How to combat sexual harassment at work: A guide to implementing the European Commission Code of Practice*, 1993, Commission of the European Communities, Brussels

- Hsairi, M., Kauffmann, F., Chavance, M., Brochard, P. 1992, 'Personal factors related to the perception of occupational exposure: An application of a job exposure matrix', *International Epidemiology Association Journal* 21:972-980
- Hyndman, S. 1990, 'Housing damp and health among British Bengalis in East London', *Social Science & Medicine* 30(1):131-41
- Ibrahim, M.A. 1980, 'The changing health state of women' *Am J Pub Health* 70:120-121
- Iglesias, R.E., Terres, A. & Chavarria, A. 1980, 'Disorders of the menstrual cycle in airline stewardesses' *Aviation Space and Environmental Medicine* 1980:518-20
- International Labour Office, 1992, 'Combating sexual harassment at work', *Conditions of Work Digest* 11(1), Geneva
- International Labour Organisation 1995, 'Gender Issues in Occupational Safety and Health' in *Gender Issues in the World of Work*, Office of Special Adviser on Women Workers' Questions, International Labour Organisation, Geneva
- Ivanovich, E., Kolarova, D., Enev, S.T. Tzenova, B. & Topalova, M. 1994, 'Noise evaluation and estimation of some specific and non-specific health indicators in telephone operators', *Reviews on Environmental Health* 10(1):39-46
- Järholm, B. (ed) 1996, *Working Life and Health. A Swedish Study*, National Institute for Working Life, Solna
- Jeffreys, S. 1995, 'Representing the prostitute' *Feminism and Psychology* 5(4):539-542
- Johnson, J.V. & Hall E.M. 1988, 'Job strain, workplace social support and cardiovascular disease' *Am J Publ Health* 78:1336-1342
- Jones, S. 1996, 'Hope and tragedy for migrants in Malaysia' *Asia-Pacific Magazine* 1(1):23-27
- Kaaber, N. 1991, *Gender, Production and Wellbeing: rethinking the household economy*, Discussion Paper 288, Institute of Development Studies, University of Sussex, Brighton, England
- Kahn, R.L. 1991, 'The forms of women's work' in *Women, work and health. Stress and opportunities*, eds M. Frankenhaeuser, U.Lunberg & M.A. Chesney, Plenum Press, New York, 65-83
- Kane, P. 1985, 'The case of China', in *Health Policy, Social Policy and Mortality Prospects*, eds J. Vallin & A.D. Lopez, Ordina Editions, Liege, 383-398
- Kane, P. & Lucas, D. 1985, 'Population problems in the South Pacific islands: An overview', *J Australian Population Association* 2(2):114-135
- Kane, P. 1991, *Women's Health: From Womb to Tomb*, Macmillan, Basingstoke
- Karasek, R., Baker, D., Marker, F., Ahlbom, A., Theorell, T. 1982, 'Job decision latitude, job demands, and cardiovascular disease: A prospective study of Swedish men', *Am. J. Publ. Health* 71:94-705
- Karl, M. 1995, *Women and Empowerment: participation and decision-making*, Zed Books, London

- Kauppinen-Toropainen, K. 1993, 'Sexual harassment at the workplace', in *OECD panel group on women, work and health*, Ministry of Social Affairs and Health, Publications, Helsinki, 6:153-157
- Kauppinen, K. 1996, 'Women's health and well-being in societies in transition' in *Women's Health Day. Fourth World Conference on Women. World Health Organization, Geneva*
- Kauppinen-Toropainen, K., & Gruber, J. 1993, 'The antecedents and outcomes of women-unfriendly behavior: A study of Scandinavian, former Soviet, and American women', *Psychology of Women Quarterly* 17:431-456
- Kauppinen-Toropainen, K. & Lammi, J. 1993, 'Men in female-dominated occupations: a cross-cultural comparison' in *Doing "Women's Work" -men in non-traditional occupations* ed. C.L. Williams, Sage Publications, Newbury Park, 91-112
- Kelland, P. 1992, 'Sick building syndrome, working environments and hospital staff' *Indoor Environ* 1:335-40
- Kelly, S., Charlton, J. & Jenkins, R. 1995, 'Suicide deaths in England and Wales 1982-1992: the contribution of occupation and geography' *Population Trends* 80:16-25
- Kemp, M. 1993, 'The unknown industrial prisoner: Women, modernisation and industrial health' *Inside Indonesia* Dec 1993:20-22
- Koblinsky, M., Timyan, J., Gay, J. 1993, *The Health of Women*, Westview Press, San Francisco
- Koemeester, A.P., J.P.J. Broerson, & Treffers, P.E. 1995, 'Physical work load and gestational age at delivery' *Occupational and Environmental Medicine* 52:313-315
- Komatsu, R., Sittitrai, W., Brown, T., Sirimahachaiyakul, W., Jittangkul, D., Phadungphon, C. & Carla, G. 1996, 'Diversity in the commercial sex industry in Bangkok, Thailand' *Paper to the 11th International Conference on AIDS, Vancouver*
- Kontula, O. & Haavio-Mannila, E. (eds) 1993, *Suomalainen seksiraportti* (The Finnish Sex report). WSOY, Porvoo
- Krane, J. 1996, 'Violence against women in intimate relations: insights from cross-cultural analyses', *Transcultural Psychiatric Research Review* 33:435-465
- Kraut, A. 1994, 'Estimates of the extent of morbidity and mortality due to occupational diseases in Canada' *Am. J. Ind. Med* 25:267-278
- Kritz-Silverstein, D., Wingard, D. et al. 1992, 'Employment status and heart disease risk factors in middle-aged women: the Rancho Bernado study' *American Journal of Public Health* 82:215-219
- Lagerlöf, E. 1994, *Women's Work and Health*, 4/1994, Forskning & Praktik, National Institute of Occupational Health, Solna
- Larsen, E. 1996, 'The effect of different police enforcement policies on the control of prostitution' *Canadian Public Policy* 21(1):40-55
- Laurin, G. 1991, *Feminisation de la Main D'oeuvre: Impact sur la Sante et la Securite du Travail* Commission de la sante et de la securite du Quebec, Montreal, Quebec

- Lee, Sun-hee, Smith, L., d'Espaignet, E., Thomson, N. 1987, *Health Differentials for Working Age Australians*, Australian Institute of Health, Canberra
- Lin, Lean Lim 1993, 'The Feminisation of labour in the Asian-Pacific rim countries: from contributing to economic dynamism to bearing the brunt of structural adjustments' in *Human Resources in Development Along the Asian-Pacific Rim*, eds N. Ogawa, G. Jones & J.G. Williamson, Oxford University Press, Singapore:176-209
- Lippel, K. 1992, *Le Stress au Travail*, Les Editions Yvon Blais Inc, Canada
- Lorber, J. 1994, *Paradoxes of Gender*, Yale University Press, New Haven and London
- Lortie, M. 1987, 'Analyse comparative des accidents declares par des preposes hommes et femmes d'un hopital geriatrique', *Journal of Occupational Accidents* 9:59-81
- Lowman, J. & Fraser, L. 1995, *Violence Against Persons Who Prostitute: The Experience in British Columbia*, Dept of Justice and Solicitor General, Canada
- Lucas, J. 1991, 'Sexual harrasment,current models of occupational health and safety and women', *Australian Feminist Studies* 13:59-69
- Lundberg, U. 1996, 'Influence of paid and unpaid work on psychophysiological stress. Responses of men and women', *Journal of Occupational Health Psychology* 1(2)
- Madden, R. 1995, *Focus on Families: Caring in Families - Support for persons who are older or who have disabilities* Catalogue no 4423.0, Australian Bureau of Statistics, Canberra
- Makinwa-Adebusoye, P. 1993, 'Migration and female headed households'. in *Women's Position and Demographic Change*, eds N. Federici, K. Oppenheim-Mason & S. Sogner, Clarendon Press, Oxford:319-338
- Malawi National Statistical Office 1987, *Survey of Handicapped Persons, Malawi 1983* Government Printer, Zomba
- Mamelle, N., Munoz, F. 1987, 'Occupational working conditions and preterm birth: A reliable scoring system' *Am J Epidemiol* 126:150-152
- Mason, C. 1990, 'Healthy public policy for women and workers: An Australian case study of employment discrimination, occupational health and safety legislation' in *Healthy Public Policy at the Local Level* Campus Verlag, Frankfurt am Main
- Mason, C. 1992, 'Women's occupational health and safety: The unmet needs' *Papers from the 1992 Forum on Women's Occupational Health and Safety, held in Brisbane, Queensland*, eds D. Blackmur, D. Fingleton & D. Akers, Queensland Women's Consultative Council and Queensland University of Technology, Brisbane
- Mason, C. 1995, 'Australian Initiatives on Women's Health: Occupational Health and Safety (OH&S) and the Environment' *Paper presented to the WHO Global Commission on Women's Health, Perth, April*
- Maw, J. 1991, *Situational Analysis of Women at Work in Europe: Research Project for the World Health Organisation Occupational Health*, Unpublished ms
- McCarthy, P. et al 1985, 'Respiratory conditions: effects of housing and other factors' *Journal of Epidemiology and Community Health* 39

- McDonald, A.D., McDonald, J.C., Armstrong, B., et al 1988, 'Foetal death and work in pregnancy' *Brit J Ind Med* 45:148-157
- McDowall, M. 1983, 'Measuring women's occupational mortality', *Population Trends* 34:25-29
- McKeganey, N.P. 1994, 'Prostitution and HIV: what do we know and where might research be targeted in the future' *AIDS* 8:1215-1226
- McKinlay, S., Triant, R.S., McKinlay, J.B., Brambilla, D.J. & Ferdock, M. 1990, 'The relative contributions of work and three nurturing roles to the health of mid-aged women: the experience of the Massachusetts Women's Health Study' in *Gender, Health & Longevity: Multidisciplinary Perspectives*, Springer, New York
- Mendell, M.J., Smith, A.H. 1990, 'Consistent pattern of elevated symptoms in air conditioned office buildings: a reanalysis of epidemiologic studies' *Am J Public Health* 80:1193-99
- Menzies, R., Tamblyn, R., Farant, J-P., Hanley, J., Nunes, F., Tamblyn, R. 1993, 'The effect of varying levels of outdoor-air supply on the symptoms of the sick building syndrome' *New Engl J Med* 328:821-7
- Mergler, D, Vezina, N. 1985, 'Dysmenorrhea and cold exposure' *J Reprod Med* 30:106-111
- Mesle, F., Shkolnikov, V.M., Hertrich, V. & Vallin, J. 1996, *Tendances Recentes de la Mortalite par Cause en Russie 1965-1994*, Institut National D'etudes Demographiques, Paris
- Messing, K. 1996, 'You don't use a wrench to peel potatoes: Gender bias leads to methodological problems in occupational health research' in *International Congress Women Work and Health, Barcelona April 17-20*, Dona, Salut i Qualitat de Vida, Barcelona
- Messing, K. & Boutin, S. In press. 'La reconnaissance des conditions difficiles dans les emplois des femmes et les instances gouvernementales en sante et en securite du travail' *Relations industrielles/ Industrial Relations*
- Messing, K., Chatigny, C., Courville, J. 1996, 'L'invisibilite du travail et la division leger/lourd: Impact sur la sante et la securite du travail', *Objectif Prevention* 19(2):13-16
- Messing, K., Courville, J., Boucher, M., Dumais, L., Seifert, A.M. 1994, 'Can safety risks of blue-collar jobs be compared by gender?' *Safety Science* 18:95-112
- Messing, K., Dumais, L., Courville, J., Seifert, A. M., Boucher M. 1994, 'Evaluation of exposure data from men and women with the same job title', *Journal of Occupational Medicine* 36.8:913-917
- Messing, K., Neis, B., Dumais, L. 1995, *Invisible La sante des travailleuses*, Gynergy books, Canada
- Messing, K., Saurel-Cubizolles, M.-J., Bourguine, M., Kaminski, M. 1992, 'Menstrual cycle characteristics and working conditions in poultry slaughterhouses and canneries' *Scand. J. Work, Environment and Health* 18:302-309
- Messing, K. & Stevenson, J. 1996, 'A procrustean bed: Strength testing and the workplace' *Gender, Work and Organization* 3(3):156-167

- Ministry of Social Affairs and Health, Finland 1996, 'Equality issues in Finland' in *Equality, A Habit to Aim for*, Publications on Equality 1/1996
- Morris, L. 1990 *The Workings of the Household*, Polity Press, Oxford
- Moser, C.M. 1996, *Confronting Crisis: A Comparative Study of Household Responses to Poverty and Vulnerability in Four Poor Urban Communities*, Environmentally Sustainable Development Studies and Monographs Series no. 8, World Bank, Washington
- Mumford, J.L. 1987, 'Lung cancer and indoor air pollution in Xuan Wei, China', *Science* 235:217-220
- Najman, J.M., et al. 1983, 'Employment, unemployment and the health of pregnant women' *New Doctor* Oct:9-12
- Neave, M. 1994, 'Prostitution laws in Australia: past history and current trends' in *Sex Work and Sex Workers in Australia*, eds R. Perkins, G. Prestage, R. Sharp & F. Lovejoy, UNSW Press, Sydney
- Nelson, N., Kaufman, J. D., Burt, J., Karr, C. 1995, 'Health symptoms and the work environment in four nonproblem United States office buildings' *Scand J. Work Environ. Health* 21:51-59
- Nicolson, P. 1996, *Gender, Power and Organisation: A psychological perspective*, Routledge, London
- Nissel, M. 1987, *People Count: A History of the General Register Office*, Her Majesty's Stationery Office, London
- Norback, D., Michel, I., Widstrom, J. 1990, 'Indoor air quality and personal factors related to the sick building syndrome' *Scand J Work Environ Health*, 16:121-8
- Norback, D., Torgen, M., Edling, C. 1990, 'Volatile organic compounds, respirable dust, and personal factors to prevalence and incidence of sick building syndrome in primary schools' *Brit J Ind Med* 47:733-41
- NUPE 1993, *Bringing it all Home: the NUPE Home Care Survey* NUPE, London
- Nurminen, T. 1995, 'Maternal pesticide exposures and pregnancy outcomes' *JOEM* 37(8):935-940
- O'Connell-Davidson, I. 1996, 'Sex tourism in Cuba' *Race and Class* 38(1):39-48
- O'Connell-Davidson, I. & Brace, L. 1996, 'Desperate debtors and counterfeit coin: the Hobbesian world of the sex tourist' *Discussion papers in Sociology*, Faculty of Social Sciences, Department of Sociology, University of Leicester
- Oakley, A. 1974, *The Sociology of Housework*, Martin Robertson, London
- OECD 1993, *Women, Work and Health: Synthesis report of a panel of experts*, OECD, Paris
- OECD 1996, *Employment Outlook July 1996*, OECD, Paris
- Orubuloye, I.O., Caldwell, P. & Caldwell J.C. 1994, 'The role of high risk occupations in the spread of AIDS: Truck drivers and itinerant market women in Nigeria', in *Sexual Networking and AIDS in Sub-Saharan Africa*, Health Transition Series no. 4, eds I.O.

- Orubuloye, J.C. Caldwell, P. Caldwell & G. Santow, Australian National University, Canberra, 89-100
- Pan, S. 1996, 'Qualitative study on the status quo of sex workers and their AIDS related sexual behaviour in two Chinese cities', *Paper to 11th International Conference on AIDS, Vancouver*
- Parry, G., & Shapiro, D.A. 1986, 'Life events and social support in working class mothers: stress buffering or independent effects' *Arch Gen Psychiat* 43:315-323
- Paschane, D., Fisher, D., Cagle, H. & Fenanghty, H. 1996, 'Risk factors for gonorrhea infection among out-of-treatment drug users: an Alaskan v a national sample', *Paper at 11th International Conference on AIDS, Vancouver*
- Paul, M. (ed) 1993, *Occupational and Environmental Reproductive Hazards: A guide for clinicians*, Williams & Wilkins, Baltimore
- Perkins, R. 1994, 'Female prostitution', in *Sex Work and Sex Workers in Australia*, eds R. Perkins et al, UNSW Press, Sydney
- Pheasant, S. 1986, *Bodyspace*, Taylor & Francis, London, Ch. 1
- Phillips, J.E. 1996, *Working and Caring: Developments at the Workplace for Family Carers of Disabled and Older People*, European Foundation for the Improvement of Living and Working Conditions, Dublin
- Pickering, T.G., James, G.D., Schnall, P.L., Schlusser, YR., Pieper, CF., Gerin, W., Karasek, R.A. 1991, 'Occupational stress and blood pressure: Studies in working men and women' in *Women, Work and Health: Stress and Opportunities*, eds M. Frankenhaeuser, U. Lundbergh, M. Chesney, New York, Plenum Press, 171-186
- Pines, A., Lemesch, C., Grafstein, O. 1992, 'Regression analysis of time trends in occupational accidents (Israel, 1970-1980)' *Safety Science* 15:77-95
- Plumridge, E., Chetwynd, J. & Reed, A. 1997, 'Control and condoms in commercial sex: client perspectives' *Sociology of Health and Illness* forthcoming
- Pritchard, C. 1990, 'Suicide, unemployment and gender variations in the Western world 1964-1986', *Soc Psychiat Psychiatr Epidemiol* 25:73-80
- Pyett, P., Haste, B. & Snow, J. 1996, 'Risk practices for HIV infection and other STDs amongst female prostitutes working in legalised brothels' *AIDS Care* 8(1):85-94
- Ramanamma, A. 1990, 'Female foeticide and infanticide: A silent violence', in *Violence Against Women*, ed. S. Sood, Arihant Publishers, Jaipur, India
- Ren-Ying Yan, n.d. *The Risk Approach in Perinatal Health, Shunyi County, People's Republic of China*. (Pub.no. HHS 89-8412) National Center for Maternal and Infant Health, Beijing Medical University and WHO Collaborating Centre in Perinatal Care and Health Services Research in Maternal and Child Health, Atlanta, USA
- Restrepo, M., Munoz, N., Day, N.E., Parra, J.E., De Romero, L., Nguyen-Dinh, X. 1990, 'Prevalence of adverse reproductive outcomes in a population of occupationally exposed to pesticides in Colombia' *Scan J Work Envir Health* 16:232-238
- Reviere, R. & Eberstein, I. 1992, 'Work, marital status and heart disease' *Health Care for Women International*, Hemisphere. 13:393-399

- Rita, P., Reddy, P.P., Vankatran, R. 1987, 'Monitoring of workers occupationally exposed to pesticides in grape gardens in Andhra Pradesh' *Environ Res* 44:1-5
- Robinson, J.C. 1989, 'Trends in racial inequality and exposure to work-related hazards, 1968-1986', *AAOHN Journal* 37:6-63
- Rodda, A. 1991, *Women and the Environment*, Zed Press, London
- Romito, P. 1990, 'Post-partum depression and the experiences of motherhood', *Acta Obstetrica and Gynecologica, Scandinavica* 69.sup154:1-37
- Romito, P., Zalateo, C. 1992, 'Social history of a research project: A study on early post-partum discharge', *Social Science and Medicine* 34(3):227-35
- Root, S.L., Lindell, I.S. & Miller R.E. 1984, 'Exclusionary employment policies for female industrial workers', *Occupational Health Nursing* 32:297-300
- Rosenberg, H. 1984, 'The home is the workplace: hazards, stress and pollutants in the household', in *Double Exposure: Women's Health Hazards on the Job and at Home*, ed. W. Chavkin, Monthly Review Press, New York
- Rosenfield, S. 1989, 'The effects of women s' employment: personal control and sex differences in mental health' *J Health Soc Behav* 30:77-91
- Ross, C., & Bird, C. 1994, 'Sex stratification and health lifestyle: consequences for men's and women's perceived health' *Journal of Health and Social Behavior*, 35:161-178
- Ross, C.E. & Mirowsky, J. 1988, 'Child care and emotional adjustment to wives employment' *J Health and Soc Behaviour* 29:127-138
- Ross, C.E., Mirowsky, J., & Ulbrich, P. 1983, 'Distress and the traditional female role: a comparison of Mexicans and Anglos' *Am J Soc* 89:670-682
- Rubenstein, M. 1988, 'The Dignity of Women at Work' in *A report on the Problem of Sexual Harassment on the Member States of the European Communities*, Office for Official Publications of the European Communities, Luxemburg
- Rubenstein, M. 1992, 'Dealing with sexual harassment at work: The experience of industrialized countries' in *Combating Sexual Harassment at Work. ILO Conditions of Work Digest*. 11(1):5-19
- Russo, N.F. 1990, 'Overview: Forging research priorities for women's mental health', *Am Psychologist* 45:368-373
- Sallmen, M., Lindbohm, M.L., Kyronen, E.N. et al 1995, 'Reduced fertility among women exposed to organic solvents' *Am J Ind Med* 27:699-713
- Savitz, D.A., Chen, J. 1990, 'Paternal occupation and childhood cancer: A review of epidemiologic studies' *Environ Health Persp* 88:325-337
- Schenker, M. 1995, 'Association of spontaneous abortion and other reproductive effects with work in the semiconductor industry' *Am J Ind Med* 28:635-659
- Scialli, A. 1992, *A Clinical Guide to Reproductive and Developmental Toxicity*, CRC Press, Boca Raton
- Semenciew, R., Morrison, H., Riedel, D., Wilkins, K., Ritter, L., Mao, Y. 1993, 'Multiple myeloma mortality and agricultural practices in the prairie provinces of Canada', *JOM* 35:557-561

- Seneviratne, S.R.De.A. & Hall, A.J. (n.d.) *Review of Literature on Some Aspects of the Health of Women at Work* Unpublished m.s
- Serre, A., Schutz-Samson, M., Cabral, C., Martin, F., Hardy, R., De Aquino, O., Vinsonneau, L. & De Vincenzi, I. 1996, 'Living conditions among sex workers: consequences for community based interventions' *Paper to 11th International Conference on AIDS, Vancouver*
- Shortridge, L.A. 1988, 'Assessment of menstrual variability in working populations' *Rep Toxicol* 2:171-176
- Silman, A.J. 1987, 'Why do women live longer and is it worth it?' *British Medical Journal* 293:1211-1212
- Silverstein, B.A., Fine, L.J. & Armstrong, T.J. 1987, 'Occupational factors and carpal tunnel syndrome' *Am. J. Ind. Med.* 11:343-358
- Sims, J. 1994, *Women, Health and Environment: An Anthology*, WHO, Geneva
- Sirisambhand, N. & Gordon, A. 1987, 'Rural women and changes in work patterns: The impact of a reservoir and transportation networks on three Thai villages', in *Women Farmers and Rural Change in Asia: Towards equal access and participation*, ed. N. Heyzer, Asian and Pacific Development Centre, Kuala Lumpur, 313-352
- Skov, P., Valbjorn, O., Pedersen, B.V. 1990, 'The Danish Indoor Climate Study Group: Influence of indoor climate on the sick building syndrome in an office environment', *Scand J Work Environ. Health* 16:363-71
- Skov, P., Valbjorn, O., Pederson B.V. 1989, The Danish Indoor Climate Study Group: Influence of personal characteristics, job-related factors and psychosocial factors on the sick building syndrome' *Scand J Work Environ. Health* 15:286-95
- Spannhake, K. and Elsner, G. 1991, 'Zimmermadchen' *Arbeitsmedizin, Sozialmedizin, Praventivmedizin - Beilage Arbeitsmedizinische Berufskunde* 26(12)
- Stanosz, S., Kuligowski, D., Pielesezek, A. 1995, 'Concentration of dihydroepiandrosterone, dihydroepiandrosterone sulphate and testosterone during premature menopause in women chronically exposed to carbon disulphide' *Meycyna Pracy* XLVI.4:340
- Stellman, J.M. 1994, 'Where women work and the hazards they may face on the job' *Journal of Occupational Medicine* 36(8):814-825
- Stellman, J.M. 1997, *Women's Work, Women's Health: Myths and Realities* Pantheon Books, New York
- Stenberg, B., Eriksson, N., Mild, K.H.L., H\_\_g, J., Sandstr\_m, M., Sundell, J., Wall, S. 1995, 'Facial skin symptoms in visual display terminal workers. A case-reference study of personal, psychosocial, building- and VDT-related risk indicators'. *Int. J. Epidemiology* 24(4):796-803
- Stenberg, B., Wall, S. 1995, 'Why do women report "sick building symptoms" more often than men?' *Social Sciences and Medicine* 40(4):91-502
- Stetson, D.S., Albers, J.W., Silverstein, B.A., Wolfe, R.A. 1992, 'Effects of age, sex, and anthropometric factors on nerve conduction measures' *Muscle and Nerve* 15:1095-1104
- Stijkel, A. 1995, 'Developments in reproductive risk management' *Occupational Environmental Medicine* 52:294-303

- Stijkel, A. & Reijners, L. 1995, 'Implementation of the precautionary principle in standards for the workplace' *Occupational Environmental Medicine* 52:304-312
- Sunar, D. 1996, 'Social, cultural and psychological factor affecting the spread and prevention of AIDS and other STDs in Mediterranean and Islamic cultures: the case of Turkey' *Paper to 11th International Conference on AIDS*
- Sweeney, J., Nussbaum, K. 1989, *Solutions for the New Work Force*, Seven Locks Press, Washington, DC
- Taskinen, H. & Ahlberg G. 1996, 'Assessment of reproductive risk at work' *Int. J Occupational and Environmental Health* 2:59-63
- Thanckar J and Nigudkar P (1994) 'Male intervention programme in red light area of Bombay', *Paper to 10th International Conference on AIDS, Yokohama*
- Thotis, P. 1983, 'Multiple identities and psychological well-being'. *Am Sociol Rev* 48:74-187
- Tiggerman, A.H. & Winefield, H.R. 1991, 'The psychological impact of unemployment and satisfactory employment in young men and women: longitudinal cross-sectional data', *British Journal of Psychology* 82(4):473-486
- Todorova, L., Christova, B., Dobrev, M.I. 1982, 'Immunological reactivity of the organism in the combined effect of electromagnetic fields and noise', *J Occupational Accidents* 4:191
- Tomaskovic-Devey, D. 1993,. *Gender and Racial Inequality at Work*, Ithaca, New York: ILR Press
- UNICEF 1986, *Statistical review of the situation of children of the world*, UNICEF, New York
- UNICEF 1994, *The Progress of Nations*, UNICEF, New York
- United Nations 1991, *The World's Women 1970-1990: Trends and Statistics*, Social Statistics and Indicators, Series K, no. 8. UN, New York
- United Nations 1992, *Demographic Yearbook*, United Nations, New York
- United Nations 1995, *International Migration Policies and the Status of Female Migrants: Proceedings of the United Nations Expert Group Meeting, San Miniato Italy 28-31 March 1990*. ST/ESA/SER.R/126, Population Division, United Nations, New York
- United Nations 1995, *Living Arrangements of Women and their Children in Developing Countries: A Demographic Profile*, ST/ESA/SER.R/141 United Nations, New York
- United Nations 1995, *The World's Women, 1995: Trends and Statistics* Social Statistics and Indicators Series K no 12, United Nations, New York
- United Nations 1996, *Population and Women. Proceedings of the United Nations Expert Group Meeting, Gabarone, Botswana 22-26 June 1992*, ST/ESA/SER.R/130. United Nations, New York
- United Nations 1996, *World Population Monitoring 1993*, ST/ESA/SER.A/139, Population Division, United Nations, New York

- United Nations Development Program 1991, *Human Development Report 1991*, Oxford University Press, New York
- United Nations High Commissioner for Refugees 1995, *Reproductive Health in Refugee Situations: An Interagency Field Manual*, UNHCR, Geneva
- Valls-Llobet, C., Webb, S. 1991, 'Influencia del estres y nutricion en el deficit de faseteina', *Quadern CAPS: Mujer y Calidad de Vida*. 22-36
- Van der Poel, S. 1995, 'Solidarity as boomerang: the fiasco of the Prostitutes Rights Movement in the Netherlands', *Crime Law and Social Change* 23:41-65
- Vanwesenbeeck, I., van Zessen, G., de Graaf, R. & Straver, C.J. 1994, 'Contextual and interactional factors influencing condom use in heterosexual prostitution contacts', *Patient Education and Counselling* 24:307-322
- Vazquez, A. 1996, 'Coercion: an important factor restricting access to drug users and sex workers to the health system', *Paper to 11th International Conference on AIDS, Vancouver*
- VDR Statistik 1995, *Rentenzugang*, vol. 113, Frankfurt am Main
- Veiersted, K.B. & Westgaard, R.H. 1993, 'Development of trapezius myalgia among female workers performing light manual work', *Scandinavian J of Work, Environment and Health*, 19(4):277-283
- Verbrugge, L.M., Patrick, D.L. 1995, 'Seven chronic conditions: their impact on US adults' activity levels and use of medical services'. *American Journal of Public Health* 8(2):173-182
- Vergieva, T. 1993, 'Adverse effects of environmental chemicals on the outcome of human pregnancy'. in. *Reproductive Toxicology* ed. M. Richardson, VCH, Weinham
- Vergieva, T. 1994, 'Parental occupation and childhood cancer', in *Chemical Safety: International Reference Manual*, ed. M. Richardson, VCH, Weinham
- Vergieva, T. 1995, *Reproductive and Developmental Hazards for Women at Work: Literature Research and Expert Assessment*, National Centre of Hygiene, Sofia
- Vergieva, T. 1996, 'Women and reproductive health at work (strategy for action)', *International Congress Women Work Health 17-20 April*, Barcelona
- Vezina, N., Tierney, D., Messing, K. 1992, 'When is light work heavy? Components of the physical workload of sewing machine operators which may lead to health problems', *Applied Ergonomics* 23:268-276
- Violence Against Women: The Hidden Health Burden, *World Bank Discussion Papers* 255, 1994
- Wagener, D.K., Winn, D.W. 1991, 'Injuries in working populations: black-white differences', *Am J Publ Health* 81:1408-1414
- Waldron, I. 1987, 'Patterns and causes of excess female mortality among children in the developing countries', *World Health Statistics Quarterly* 40:194-210
- Ware, H. 1981, *Women, Demography and Development*, Development Studies Centre Teaching Notes 3, Australian National University, Canberra

- White, J. 1993, *Sisters and Solidarity*, Thompson Educational Publishing, Toronto 168
- Wilson, F.M. 1995, *Organizational Behaviour and Gender*. McGraw-Hill Book Company, London
- Wilson, S. & Walker, G. 1993, 'Unemployment and health: a review', *Society of Public Health*. 107:53-162
- WOHRC 1979(a) *Fact Sheet: For Women Who Work in the Home*. WOHRC, New York
- WOHRC 1979(b), 'Meat processing: A dangerous industry', *Women's Occupational Health Resource Center News* 1(3):2
- Worksafe Australia 1994, *Occupational Health and Safety: The Experience of Women Workers, Australia 1991-92*, Australian Government Publishing Service, Canberra
- World Bank 1995, *Advancing Gender Equality: From Concept to Action*, World Bank, Washington
- World Bank 1996, *Improving Women's Health in India*, Development in Practice, World Bank, Washington
- World Health Organisation 1994, *Declaration on Occupational Health For All*, WHO/OCH/94.1, Geneva
- World Health Organisation 1994, *Investing in Women's Health: Central and Eastern Europe*, WHO Regional Office for Europe, Copenhagen
- World Health Organisation 1995, 'Women's health: Improve our health, improve the world', *WHO Position Paper, Fourth World Conference on Women, Beijing 4-15 September 1995*, WHO, Geneva
- World Health Organisation 1995, *Global Strategy on Occupational Health For All* WHO/OCH/95.1, Geneva
- World Health Organisation 1995, *Lifestyle Changes and their Impact on the Health of Women in the Western Pacific Region*, Womens Health Series vol 5, WHO Regional Office for the Western Pacific, Manila
- World Health Organization, Pakistan: Global Commission on Women's Health (n.d) NWFP Chapter *Profile of Women Health in North West Frontier Province. Brief on Profile of Women's Health in Punjab*. Quetta Chapter *Brief Profile of Women Health in Balochistan*. Sindh Chapter *A Brief Profile on the Health of Women in Sindh*. World Health Organisation, Geneva
- Wortman, C., Biernat, M. & Lang, E. 1991, 'Coping with role overload', in *Women, Work and Health: Stress and Opportunities*, eds M. Frankenhaeuser, U. Lundberg & M.A. Chesney, Plenum Press, New York, 85-110
- Young, C. 1986, *Selection and Survival: Immigrant Mortality in Australia*, Dept of Immigration and Ethnic Affairs, Australian Government Publishing Service, Canberra
- Zahm, S.H., Pottern, L.M., Lewis, D.R., Ward, M.H., White, D.W. 1994, 'Inclusion of women and minorities in occupational cancer epidemiological research', *Journal of Occupational Medicine* 36(8):842-847

Zhang, J., Cai, W.W., Lee, D.J. 1992, 'Occupational hazards and pregnancy outcomes', *Am J Ind Med* . 21:397-408