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ASPECTS OF HEALTH AMONG AN EMPLOYED POPULATION

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Doctor of Philosophy

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September 1993

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Submitted: 1993

THESIS SUMMARY

This survey collected information on aspects of health amongst an employed population, employees in 14 different organisations in the West Midlands Regional Health Authority; and was a stratified sample of senior managers, middle managers and operatives. Nine hundred and sixty questionnaires were distributed asking for both quantitative and qualitative information on 58 questions covering health, work, family, leisure activities and life-style. A response rate of 48% (459 returned questionnaires) came from 290 men (63%), 165 women (36%) and four people (1%) who did not answer the gender question.

The initial findings from this study are unique in that there has not been a specific review of the health of people at work. In answer to the main research questions, 92% felt they were healthy. Compared to others of a similar age, 34 % felt their health was 'above average', 58% 'average', and 7% 'below average'. Thirty two percent of respondents had visited their GP in the past 1-2 months; the highest reason given was disorders of the respiratory system, 20%.

People's perceptions on the effects of work on their health were: good effect, 13%; fair effect, 20%; no effect, 27%; poor effect, 27% and bad effect, 7%. The effects of leisure activities on health were thought to be more positive: good effect, 46%; fair effect, 20%; no effect, 21%; poor effect, 3% and bad effect, 2%. The perceptions of effects of life-style on health were considered to be: good effect, 32%; fair effect, 32%; no effect, 20%; poor effect, 9% and bad effect, 1%.

In this survey, leisure and life-style were seen by employees to have more beneficial effects on health than work. Future implications include a review of occupational health as a major policy development area within primary care. There is a need to influence the education and training of health care practitioners in order to affect their ability to practice effectively in this new and challenging area of work.

Key Words:

- Occupational Health
- Health
- Health Promotion
- Health Perceptions

Dedication

This work is dedicated to the memory of my father, Horace Dixon, who died of coal miners pneumoconiosis on the 12th August, 1990.

Acknowledgements

Over the period of time this research has been in progress there have been many people who have helped, by contributing, by sharing, by criticising. In particular I would like to thank my supervisors Mike Luck and Steve Cavanagh. Dr. Sam Lucas gave me a lot of support in the early days with statistical and creative advice.

I would particularly like to thank the fourteen organisations who supported the research and the people in those organisations who took time to fill in the questionnaire, sharing their thoughts and feelings.

I am grateful to the occupational health nurses and doctors who helped with this work, and particularly the Occupational Health Nurses Association (BAH).

Lindy Cavanagh has been tremendous in the way she has dealt with my alterations, editing and moving material around.

My long suffering family have to be congratulated for the way they have put up with excuses for not being available to do things because I have had to do my research/writing. They have never once laughed or sniggered, even when they knew I was not being very productive.

Finally, my husband, Peter; he has probably forgotten a time before, when Sundays were days for doing relaxing things. He has been tremendously supportive, even when he has had to bully me for work to be done.

Activities such as this require the help and support of a host of people. I am very grateful to all those people who have been involved and have helped in so many ways.

" 'When you come to a patient's house, you should ask him what sort of pains he has, what caused them, how many days has he been ill, whether the bowels are working and what sort of food he eats.' So says Hippocrates in his work Affections. I may venture to add one more question: What occupation does he follow?" Ramazzini, 1700 (trans. W.C. Wright, 1940, p. 13)

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LIST OF ABBREVIATIONS (in alphabetical order):

AIDS	Acquired Immune Deficiency Syndrome
CHD	Coronary Heart Disease
CODOT	Classification of Occupations and Directory of Occupational Titles
COSHH	Control of Substances Hazardous to Health
CSO	Central Statistics Office
DHA	District Health Authorities
DHSS	Department of Health and Social Security
EEC	European Economic Community
GHS	General Household Survey
GP	General Practitioner
GPFH	General Practitioner Fund Holder
HEA	Health Education Authority
HIV	Human Immunodeficiency Virus
HMSO	Her Majesties Stationary Office
HOTN	Health of the Nation
HSAWA	Health and Safety at Work Act
HSC	Health and Safety Commission
HSE	Health and Safety Executive
HSI	Health Status Indicators
ICD	International Classification of Diseases
IAC	Industrial Injuries Advisory Council
ILO	International Labour Organisation
LEA	Local Education Authority
NEDO	National Economic Development Office
NHS	National Health Service
NHSME	National Health Service Management Executive
OH	Occupational Health
OHP	Occupational Health Personnel
OHS	Occupational Health Services
OPCS	Office of Population Censuses and Surveys
RIDDOR	Reporting of Injuries, Diseases and Dangerous Occurrences Regulations
RIPA	Royal Institute of Public Administration
TUC	Trades Union Congress
UK	United Kingdom
VWF	Vibration White Finger
WHO	World Health Organisation
WMRHA	West Midlands Regional Health Authority

Chapter 1

INTRODUCTION

This area of research is of personal interest to the researcher from her experience as a nurse, and particularly her experience as an occupational health nurse. This experience afforded the opportunity to work with well people at their work and to observe the effects of work on health and health on work.

This introductory chapter aims to set the scene in terms of identifying some of the issues and the philosophical and legislative framework which seek to control those issues. The researcher is aware of the effects of unemployment on health; this perspective is not included in this study. This is quite a different area of research enquiry, the emphasis in this work is on the work and health interaction.

The research is directed at collecting the perceptions of people who are at work on how they feel in relation to their health and the social and occupational factors which may have affected their health.

The health of a nation is dependent on the health of its employed population. A society can only provide services and facilities to the extent to which it can buy those services and facilities. If a nation does not have a strong and healthy working population who can produce goods for sale or trade, it does not then have a disposable income with which to purchase social goods, including health care. These ideas need to be seen in a western cultural context, although the same principles would apply in a third world country; the economic base in any country has to be considered when looking at social 'goods'. An example of this would be the state of affairs in Somalia; the country has drought and famine, yet the country's 'wealth' is used to purchase firearms and weapons instead of grain and medical care. This argument could be extended into economic theory. It is not the intention to explore this area of theory in this research although the principles will and must support one of the main concepts

explored, that of work. In most western countries, work, that is paid employment, is a highly structured aspect of society (Watson, 1987; Hunt, 1979). There is considerable investment in plant, machinery and systems, and their maintenance, but not always the same or comparable investment in maintaining the health of people who work the plant, machines or systems.

In the United Kingdom (UK) in 1988 the General Household Survey (GHS) found there were 12,335,000 people in paid employment (OPCS, 1990), people generating the finances to maintain the social fabric of the nation, including its health care provision. There is now probably a higher proportion of the population exposed to working conditions by part time and job share arrangements, though it is difficult to know the true figures involved. People can be employed in the 'normal' employment market, they could be doing voluntary work having been made redundant, or they could be working in the 'black economy', claiming unemployment benefit and working. People in the latter two groups are not easily accounted for in normal surveys. This issue of numbers in employment is explored in subsequent chapters.

The Effects of Health on Work

It is difficult to identify all existing ill health conditions that people bring with them to the workplace; these can be many and varied. Young people starting work could have conditions which, even if they are not a health issue now, have the potential for being a future problem. For example, a young person with diabetes or a skin condition or an existing lung dysfunction, could be put into a job which was not compatible with that condition; it could be aggravated or exacerbated. A person with diabetes could have difficulty working shifts; they need to be able to manage their diet properly, so an erratic type of working may be a difficulty. Some skin conditions can be aggravated by immersion in liquids or irritated by substances such as solvents or dry agents. A job with lots of physical activity could be a difficulty for people with an impaired lung function; they may not have the capacity. Equally, people who suffer from asthma could be distressed if exposed to sensitisers in the workplace. Older people, possibly

through occupational exposure or general wear and tear, could be feeling the effects of existing ill health conditions; lung conditions, muscular skeletal problems.

Although there are specific diseases caused by occupational activity, i.e. lead absorption, asbestosis, vibration white finger, in the main peoples health experience is a combination of factors: work, life style and general environmental issues. If only one of these factors could be effectively managed, the effects of the other two may not be so harrowing in a persons life. The difficulty is unravelling the strands: does a person have a "bad chest" because they smoke tobacco, or have lived in a community for a long time before the Clean Air Acts of 1956 and 1968, or because they worked as a fettler in a foundry, or a combination of all three? (The Clean Air Acts have recently been combined into a 1993 Act, which puts together the still active elements of the two previous Acts.) It is the combined effects that the Health Service has to contend with, and which cost the nation in health care costs, drug costs, lost production and replacement costs.

When statistical information on the health of the nation is collected, it is usual to use negatives to give an impression of health. The World Health Organisation (WHO) definition states that health is:

..."A state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (WHO, 1948, quoted in Townsend, 1982, p. 42).

But this "not merely the absence of disease" is not always carried through to the collection of information on health.

Most of the statistical information on health is collected via morbidity and mortality information, medical opinion described through doctor's notes/certificates and death certificates. The implications are that we build up a store of knowledge on negatives of health. We use proxy measures to describe health. Also we have a system which interprets what an individual is experiencing into a medical model of disease.

It could be argued that most of us have something 'wrong' with us, a skin rash, a specific condition, a feeling of not being well. Difficulties occur when that condition, which we may have had for years with no problems, or indeed we may not have known about, is either identified or 'flares up'. An example would be someone employed in a particular job with a known skin condition, i.e. eczema; someone else may develop occupational dermatitis through exposure to workplace substances. If the first person had been assessed prior to starting work, s/he may have been refused certain jobs, either because the job could be seen as a potential hazard to them, i.e. irritate an existing skin condition, or the skin condition could damage the product, i.e. flaking skin dropping into the product, particularly if the product is a food product. These would be the commonly held views. The second person, by virtue of not having an existing condition, could be exposed to substances, sensitised and a condition occurs.

Engel and Rycroft (1988) argue that there is

"less known about the relationship between skin conditions (dermatoses) and employment than some dermatologists and occupational physicians care to admit" (p. 114).

A study in Sweden (Rystedt, 1985) found that the development of dermatitis was not a normal progression, even amongst people who had moderate or severe atopic childhood eczema, when exposed to high risk jobs in industry. It does seem, therefore, unfair to label and exclude someone from an activity on the basis of our current notions of health; rather we should be treating each person as an individual. This individual will need to be assessed and individual norms established. These will need to be monitored and evaluated. An important element in this process will be documentation and recording of available information.

This is surely preferable to not employing people with certain conditions or dismissing people when they develop conditions. This argument may seem to be simplistic; the point is that people should be treated as individuals with potential, not individuals with

health problems. The WHO definition of health, which refers to a complete state of physical, mental and social well-being for most of the people at work, is a nonsense.

The Effects of Work on Health

The delivery of occupational health care in the UK is outside the remit of the National Health Service (NHS). The responsibility for the assessment of need and development of policy in relation to the work/health interaction rests with the Health and Safety Commission (HSC) of the Department of Employment. There is no legal obligation on employers to provide for the health of employees at work other than the provision of first aid at work (HSE, 1981), the provision of Statutory Medical Examinations for people exposed to certain substances and procedures (Edwards, et al., 1988), and the recent Control of Substances Hazardous to Health Regulations 1988. This piece of legislation is new, and will be discussed fully later.

It has been known for over 2,000 years that work can seriously damage a persons health either through injury or disease (Schilling, 1981; Hunter, 1959; Thackrah, 1832; Ramazzini, 1713). Early workers in mines were often slaves or criminals; their health and well-being was not a consideration. They were working in the mines as a punishment. Mining is one of the oldest industries and has been notoriously hazardous. Agricola (1493-1555) and Paracelsus (1493-1541) produced the earliest writings on people at work; this work was particularly related to mining. The connection between work and health was not really made by either of these writers, although Agricola did advocate the use of veils across the face to protect miners. He did not say what this would protect them from; he was however, aware of the danger,

"in the mines of the Carpathian mountains, women are found who have married seven husbands, all of whom this terrible consumption has carried off to a premature death." (quoted in Schilling, 1981, p. 4)

Paracelsus was more pragmatic in his views on mining and health,

"We must have gold and silver, also other metals, iron, tin, copper, lead and mercury. If we wish to have these, we must risk both life and body in a struggle with many enemies that oppose us." (quoted in Schilling, 1981, p. 4)

There has been considerable work completed by epidemiologists on the effects of work on health and health on work (WHO, 1986A). This work has in the main been substance specific, i.e. lead workers, asbestos workers, rather than a general overview of workers health (Townsend & Davidson, 1982). This is probably because of the volume, i.e. number of people affected. Also with improved technology it has become easier to manage and control the working environment. Improvements in health assessment technology mean that diagnosis and differential diagnosis is now easier. However, the assumption remains that a person who works is 'healthy' by virtue of being at work, and the health of the employed population is not considered an issue of public health (DHSS, 1988). History and the literature identify that work can seriously damage a persons health (Tuckett, 1976). There has not been a survey of the health of people who work from a general health perspective. These people are included in general social surveys; it is unusual for these surveys to take into account the effects of work on health or health on work.

It is therefore timely that some attempt is made to survey the health of people in employment to identify their health status, and provide a background of information for other health professionals.

Occupational Disease and Accidents

We know how many people are killed in the workplace each year, 538, or suffer major injuries, 30,684 (HSC, 1991) (see Appendix 1), but not how many suffer 'minor' injuries at work in a year. Minor injuries are often not recorded, and without appropriate treatment and care could progress to more serious conditions. We do not really know how many people die as a result of occupational disease, diseases that are attributable to occupation only, although a figure of 750 per year is given by the Central Statistical Office (CSO) (1987). New spells of certified incapacity for sickness due to prescribed diseases and industrial injuries totalled 7,000,000 during 1981-82. And there seems to be a steady figure of 145,000 people receiving Industrial Disablement Benefit (Webb & Schilling, 1988). Figures on morbidity and

mortality are published by many organisations, the Health and Safety Executive (HSE), Health and Safety Commission (HSC), Office of Population Censuses and Surveys (OPCS), and Central Statistics Office (CSO); but often the basis of the decision making for mortality relies on a death certificate, and these are known to be unreliable in providing morbidity data (Harrington, 1988). The death certificates will give causes of death, but may not record all the conditions from which the person suffered. There is a view that many more people may be suffering from diseases attributable to working conditions which are not prescribed (Royal Commission on Civil Liabilities, 1987). The requirements for prescribing a disease are very rigorous and quite specific (DHSS, 1979), and the true incidence of occupational disease in the UK is probably underrated by a factor of two or three (Harrington & Seaton, 1988). So although figures are published they may only be the tip of the iceberg.

We do not know the true figures of occupational disease. One of the major problems with morbidity and mortality in occupational disease is the long latent development period which now can cover a variety of employers. People no longer have a job for life; during a persons occupational lifetime they could have more than one job in more than one organisation, in different parts of the country or even overseas. At one time this would have been only a small group of people who were probably very specialised in what work they did. This is not the case today. Hashemi (1989) attempted to put costs to the problem; he feels that a series of disasters has sensitised us to industrial accidents, but that far more people are killed by occupational disease than industrial accidents. Hashemi identifies that the cost of occupational accidents and disease to employers and employees and to the economy as a whole was estimated to be between £1.5 billion and £2.2 billion in 1987. He also feels that the under reporting of occupational disease is even greater than the under reporting of industrial accidents (Hashemi, 1989).

Other writers have also addressed this issue of economics of workplace health (Andreoni, 1986; Athersly et. al., 1976; Bamber, 1973; Sinclair, 1972). Until

recently the NHS could not have identified the proportion of incidents, accidents or illness that were treated within their system which had their origins in the workplace (Bamford, 1987B). This problem has to some extent been rectified by the Korner requirements for information in the NHS (Yates, 1981). This system standardised the routine information recorded by the NHS and relates to activity. This tries to ensure a comprehensive and standardised system which can then be analysed for common themes as well as providing routine standard information on all people interacting with the NHS. The costs of such events are absorbed into the system; this means that any possible opportunities for improving arrangements and systems are lost, together with opportunities for charging organisations who cause the problems, because true costs are not identified. Some insurance companies are now weighting the premiums of organisations from whom they receive many claims for compensation for occupational conditions, i.e. tenosynovitis, and yet persistently fail to try to prevent the occurrence and reoccurrence of the condition (Artus, 1983).

Recording of Occupational Accidents and Ill Health

Prescribed Industrial Diseases were first described in the Disabled Persons (Employment) Act 1944 which listed diseases for which people would receive financial compensation for loss of physical or mental faculty arising out of work activity: "(a person) who on account of injury, disease or congenital deformity is substantially handicapped in getting or keeping suitable employment at work" (West, 1962). The title has now changed to Recordable Diseases (HSE, 1985) and includes a total of 28 specific conditions in the broad groupings of "poisoning, skin diseases, lung diseases, infections and a group of miscellaneous diseases which are associated with exposure to particular chemicals or physical agents" (The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR), 1985) (HSE, 1986B) (see Appendix 2). There has still to be a link with work activity and compensation is dependent on a medical diagnosis. There is a strong dependence on medical labelling, and any medical practitioner could be asked to provide this diagnosis, although not all medical practitioners have specific knowledge or experience of occupational health

issues to be able to give advice to prevent a reoccurrence of the condition or situation. Depending on medical diagnosis can have limitations, in that the degree of disease present will affect the ability of medical practitioners to make a diagnosis which is socially acceptable. Although diagnostic skills have improved tremendously, there is perhaps still a time when all the 'signs' are not there to be observed, the person is still feeling unwell or tired or dysfunctional in some way.

Newly Prescribed Occupational Diseases

It has already been highlighted in the previous section that gross under recording takes place. There has been a considerable increase in recognition of substances which can cause occupational asthma. Industrial injuries benefit was first paid to people diagnosed as having occupational asthma in 1982. There is a steady addition of new cases around the 220 mark each year. Another 'new' condition which is now required to be reported is angiosarcoma of the liver resulting from exposure to vinyl chloride monomer. This substance is used to manufacture plastics and so there has only been exposure to this substance since the second world war. Most occupational exposures have an associated long latent development period. The first very specific cancers associated with this substance were diagnosed in the early 1970's. The basis of this diagnosis was the occurrence of nine cases of this very specific cancer across the world. This was probably the result of improved epidemiology, more sophisticated, differential diagnoses, and improved communication and collaboration.

Another 'new' condition is vibration white finger (VWF). This is a condition which results in a break down of the peripheral circulation in the hand. The condition produced is not unlike Raynauld's phenomenon. This has, in some circumstances, made differential diagnosis difficult. The main factor to consider is the association between the condition and the occupational exposure. If there is not a work relationship, then the person would not be diagnosed as having VWF, and would not receive compensation. VWF compensation was first paid in 1984/85, and has grown to be the largest single category of disease in recent years. In 1989/90 there were

2,601 new cases of VWF receiving benefit under the Industrial Injuries scheme (HSC, 1991). The occupations where VWF is, or was commonly seen were those which involved gripping a vibrating hand tool. Examples of these are chain saws used in forestry and hand grinders used in foundries to smooth the excess of metal following moulding of parts. It is thought that the gripping of the handle which used to be cold metal, combined with the vibration action caused the problem.

There is a move to include two 'new' prescribed diseases, namely chronic bronchitis and emphysema in coal miners, and bladder cancer in aluminium smelting workers using a process called the Soderberg process (Industrial Injuries Advisory Council (IIAC), 1993A; IIAC, 1993B). The move to have bladder cancer prescribed has been accepted, and regulations are expected in the Spring of 1993. For the coal miners there is still some work to be done. The recommendation is that the prescription would apply to miners who have worked underground for a minimum aggregate of 20 years, have a lung capacity at least one litre below expected levels, and have definite evidence of coal dust retention on a chest x-ray which could be interpreted as at least category 1/1. It is important that the review of potential occupational conditions is an on-going process.

Legislative Framework

Health and safety legislation developed on an industry specific basis, dealing with the particular needs of the various industries. This meant that some industries were outside legislative control. Examples of these were the NHS, the education sector and local authorities. During the late 1960's and early 1970's there was considerable concern for the very high accident rate among the working population. There was also a very high rate of mortality and morbidity due to occupational disease. This resulted in the setting up a working party with the following terms of reference:

"To review the provision made for the safety and health of persons in the course of their employment (other than transport workers while directly engaged on transport operations and who are covered by other provisions) and to consider whether any changes are needed in:

- (1) the scope or nature of the major relevant enactment's, or
- (2) the nature and extent of voluntary action concerned with these matters, and to consider whether any further steps are required to safeguard members of the public from hazards, other than general environmental pollution, arising in connection with activities in industrial and commercial premises and construction sites and make recommendations" (HMSO, 1972, p. xiv, Cmnd 5034).

This committee, which was chaired by Lord Robens, produced a report in 1972 which resulted in the Health and Safety at Work etc. Act 1974 (HSAWA), (HMSO, 1972).

This act covered all people at work, except domestic workers in private employment. It is an enabling act which allows for changes in need to be dealt with much easier through the production of approved Codes of Practice rather than specific regulations and Acts of Parliament. This development can be seen in the programme of developments of such Approved Codes of Practice as those for First Aid (1981), and the recent Codes developed out of the Control of Substances Hazardous to Health (COSHH) regulations.

The HSAWA is criminal legislation and prosecutions are heard through the magistrates courts or the crown courts. Offenders can receive fines or be sent to prison. In the first instance the NHS was exempt from the need to conform to the HSAWA, the argument being that the Crown could not prosecute the Crown. This was resolved in the NHS (Amendment) Act 1986 (HMSO, 1986).

The HSAWA has been successful in many ways; it has allowed for all workplaces to be viewed equally, for comparisons to be made. It has produced a group of inspectors who are more uniform in their approach, who are more able to communicate with one another and share results. It has allowed for standard setting across industries, for universal norms to be developed, and for a more equitable approach to be made to remedying wrongs and misdemeanours.

Her Majesties Inspectors have a range of enforcement activities they can impose in the workplace, these are:

Improvement notices: Employers have to take remedial action in relation to specific breaches of the law; there is usually a specific time frame in which action has to be taken.

Prohibition notices: These notices can be with immediate or deferred effect.

Immediate prohibition notices mean that the work must stop immediately and cease until the risk has been dealt with. Deferred prohibition notices stop an activity within a specific time. The risk of injury may not be as great, or the work cycle could not be stopped immediately without causing other problems. These two prohibition notices are issued where an inspector is concerned that there is a risk of serious personal injury arising out of a workplace activity.

The number of improvement notices issued has risen from 5921 in 1981, to 8467 in 1990/91. In 1981, 212 were deferred prohibition notices and 1906 immediate prohibition notices, against 232 and 4000 in 1990/91. This gave a total of 8039 notices in 1981 and 12,699 in 1990/91. The HSC 1990/91 report identifies that there were 1902 professional staff employed as inspectors for that year: doctors, nurses, scientists and technical staff (HSC, 1991).

Health Care in the Workplace

Occupational health (OH) is the care of the health of people at work. The WHO produced a definition of occupational health:

- "1. To identify and bring under control at the workplace all chemical, physical, mechanical, biological and psychosocial agents that are known to be or suspected of being hazardous;
2. to ensure that the physical and mental demands imposed on people at work by their respective jobs are properly matched with their individual anatomical, physiological and psychological capabilities, needs and limitations;
3. to provide effective measures to protect those who are especially vulnerable to adverse working conditions" (WHO, 1975A).

In order to comply with the WHO definition of occupational health, there needs to be some understanding of how those needs will be met.

A difficulty in the provision of health care in the workplace, and as such any uniform overview, is the lack of provision of occupational health services (OHS). The UK is one of the few countries in the European Economic Community (EEC) which does not have a policy statement on occupational health.

"In the UK, the provision of services (OHS) is voluntary and covers only a minority of workplaces, mainly those of large employers."
(HSC, 1986, p. 2)

Up to half of the workforce in Great Britain has little or no regular access to occupational health advice (HSE, 1985). In the main, OHS provided in the UK are provided by employers; their provision is voluntary. The range and number of occupational health services is proof that employers see the value of having such a service for their employees. The early OHS were developed by philanthropic employers who saw the need to provide for the health care of employees.

The implications for the acceptance of the Social Charter across the EEC for the UK will be considerable. The notion that prevails of de-regulation of the work place would have been turned around, and probably led to more prescriptive activity in the workplace in relation to hours worked and Sunday working; this is not the philosophy of the present government in the UK, who favour a more market led approach to economic activity. There is a strong move by the current and previous Conservative governments to move to market regulation of activities and away from prescription and regulation.

Occupational health is therefore voluntary, and not a feature of national health provision. This means that all people who work do not have access to an occupational health service. When there is a need to consider their individual work/health relationship they could be disadvantaged by being cared for by health professionals who do not have an appreciation of the effect of work on health for that individual, and could possibly be given inappropriate or unsafe advice. Many providers of health care may not know to ask questions about "chemical, physical, mechanical, biological or psychosocial agents" (WHO, 1975A) to which a person could be exposed in the

workplace. They may know little or nothing about the physical or mental demands of a job, and even less about methods of prevention or protection. These issues will be further explored later in this study.

The International Labour Organisation (ILO) gave a definition of occupational health services in its Convention 161:

"Occupational Health Services means services entrusted with essentially preventive functions and responsibilities for advising the employer, the workers and their representatives in the undertaking on:-

(i) the requirements for establishing and maintaining a safe and healthy working environment which will facilitate optimal physical and mental health in relation to work;

(ii) the adaptation of work to the capabilities of workers in the light of their state of physical and mental health." (HSC, 1986, p.4).

The UK was represented in this debate, and was therefore actively involved in producing this definition. It is probable that this debate plus pressure from the EEC moved the work which was to become the Control of Substances Hazardous to Health Regulations 1988 (HMSO, 1988).

The lack of legislative framework which allows for the provision of health care in the workplace means that many people at work are disadvantaged. There is a strong tradition in British industry of dealing mainly with safety issues, and health issues did not really begin to be addressed until comparatively recently (HMSO, 1973). This move is due to changes in working patterns, reduced numbers of employees and changes in work processes, and a general acceptance that work should not damage a persons health. The lack of policy which addresses health issues across the whole spectrum of a persons life leads to fragmented provision of care, and allows for many aspects of a persons life to be ignored. The recent publication of the Health of The Nation White Paper (HMSO, 1992) provided, for the first time, a strategy for health for the population of the UK.

Trade Union and Employee Representative Involvement

There is also a strong tradition of worker involvement in safety issues in the workplace through the activities of trade unions. Many trade unionists would still see health and safety as a negotiable issue, i.e., if a man is working in water or excessive dust, he gets extra money for working in those conditions. The essence of prevention does not appear in all situations. At one time in our history one could understand such an approach; there was not the degree of social and technical development to reduce or prevent many of the issues. This behaviour is now at odds with the main thrust of trade union activity, where there is a long history of effective action in reducing the risks associated with the effects of work on health.

At the annual Trades Union Congress (TUC) in Blackpool in September 1987, the TUC re-affirmed its intention to play a central role in protecting people from hazards of their work. A general strategy with four key elements was identified:

- "a) securing the effective involvement of unions in health and safety issues - at national, industry and workplace levels: for example through well understood and effective procedures for consultation;
 - b) defining problems and priorities - for example by promoting research;
 - c) securing improved health and safety standards in legislation; codes and guidance; and
 - d) ensuring compliance by employers with such standards and the adoption of safe systems of work - through the development of health and safety policies and services at the workplace and effective enforcement of standards by an adequately staffed inspectorate"
- (TUC, 1988, p. 208).

This strategy is firmly bedded in shared responsibility. The ultimate responsibility is the 'occupier' or owner of the organisation, but trade unionists see that they have a part to play not only in working with local employers and industrial groups but also at a governmental level. This approach is more integrated than the ideas proposed by both the WHO (1975A) definition and the ILO (HSC, 1986) description; it takes those ideas on board and moves the concepts forward.

The first Medical Inspector of Factories was T. M. Legge (later Sir Thomas). He resigned when the UK government refused to ratify an international convention prohibiting the use of white lead for the inside painting of buildings. He then moved to be Medical Adviser to the TUC (Lloyd Davies, 1957; Schilling, 1981). Sir Thomas produced five aphorisms, but the one that lends itself to this argument is

"unless and until the employer has done everything - and everything means a good deal - the workman can do next to nothing to protect himself, although he is naturally willing enough to do his share" (Legge, 1934, p. 3).

Lloyd Davies puts the problem clearly and succinctly:

"A workman's capital is his health and his ability to work; without these assets he is bankrupt". (1957, p. 6)

The health problems associated with work are still occurring, and although employers and trade unions in many instances have made incredible strides to resolve these problems, they are still with us. People at work are still being damaged, and the underlying philosophy in the UK is one of self regulation. The 1990/91 report of the HSC (1991) Chairman's forward contains the following passage:

"...concern about accidents in the service sector; and the picture in other sectors shows no improvement from the levels which the Commission has consistently emphasised are unacceptably high. Fatalities to employees appear to have levelled off at about 360 in recent years..." (p. xi-x).

Health at work should not be divorced from main stream health issues, they are too interrelated. The effects of work on health have been documented for centuries. To distance these effects from other health issues produces a false and unrealistic view of a nations health. It also presents real difficulties when attempting to control or prevent the poor health effects in the workplace. The NHS often has to deal with the end product of health being affected by work. This may be the result of trauma and injury, occupational disease, or mental ill-health caused by stress and tension at work. Regulation is not the full answer. Workplaces could be made the safest of places, but there would be no work being carried on. Regulation is important to set the standards, and inspection to ensure the standards are kept, but there also needs to be compliance

and co-operation by people who come into the workplace, a sharing of responsibility to care for each other. What is required is a shift in philosophy; work needs to be seen as a potential affecter of health. There needs to be a shared sense of responsibility. This will require more comprehensive education of health care professionals to make care of people at work an integrated activity in the community. A recently published report on the health of the people of Herefordshire discussed all aspects of the counties health, morbidity, mortality, but not the occupational profile of the county which must have an effect on morbidity and mortality (Herefordshire Health Authority, 1990). It is essential that during the education and training of all health professions the importance of work, both to the individual and to their health is addressed. The work a person does has the potential to reward that individual and make them fulfilled, and also to damage them. To ask the relevant questions health professionals need to have their awareness raised, their knowledge base improved, their skills refined and their attitudes modified.

The recent Health of the Nation (HMSO, 1992) raised the issue of healthy work places, and placed an obligation on the NHS not only to address this issue internally but to be a lead agent in establishing partnerships with other employers to move them to producing a healthy workplace. Many larger organisations have occupational health services which are far more pro-active and sophisticated than the occupational health services in the NHS, which does put the NHS at a disadvantage in this exercise. The lead agency nationally for this activity is the Health Education Authority (HEA).

The main thrust of these activities applied to the NHS is through a twelve point programme:

1. Raise awareness of health at work and healthy living
2. Production of a smoking policy, to provide smoking venues, stop sales of tobacco on NHS premises
3. Provide and promote healthy choices for food
4. Promote sensible drinking, and provide support for problem drinkers

5. Introduce physical activity programmes
6. Promote positive mental health
7. Encourage positive attitudes to sex
8. Provide opportunities for all staff to have health checks and attend screenings, and appropriate follow-ups
9. Explore changes that can be made within the work situation (this relates to environmental issues, not ergonomic issues)
10. Review health, hygiene and safety practices
11. Develop management practices and monitoring systems
12. Design a training strategy to support health initiatives and reinforce health-promoting behaviour

(Health at work in the NHS, HEA/NHSME, 1992)

Whilst acknowledging that there needs to be national activity in relation to workplace health, it is disappointing that this initiative does not go further and is not managed in conjunction with the HSE. This means that health professionals who have little or no experience of the workplace will be attempting to make new relationships with organisations with whom they will have had no previous experience. This will result in energy being put into activities which could be short circuited by using HSE colleagues - a loss of energy and a waste of expert knowledge and resources. The emphasis on healthy living, i.e. smoking, diet, drinking and exercise are the main thrust of the partnership activities with other industries that the NHS is charged with pursuing.

There was an implicit acknowledgement within the first document produced on the Health of the Nation that inter agency work would take place. The second document did not move this concept forward. It was stated in the first document that it was the product of multi-departmental work at the writing and thinking stage, however the second document does not follow this concept through, placing most of the activity firmly within the NHS.

The Future

A House of Lords Select Committee on Science and Technology looked at Occupational Health and Hygiene Services in the early 1980's. They received written evidence from 114 bodies and individuals, heard oral evidence from 15 others and visited the Ford Motor Co. Dagenham (one company only, and a fairly well organised one in occupational health terms). At the end of their deliberations they suggested a voluntary code should be developed by the HSE, and that General Practitioners (GP) should be more involved in that occupational health should be considered an integral part of primary care. There has not been obvious activity by the Primary Health Care teams to assume this responsibility (House of Lords, 1983).

Shortly after the publication of the House of Lords report the WHO published its Targets For Health For All by the Year 2000. Target 25 is that:

"by 1995, people of the region should be effectively protected against work related risks" (WHO, 1985B, p. 92).

As a possible solution to meeting this target it is suggested that OHS meets the needs of all workers, even those working at home. There will also be a need for effective reporting systems that will allow for the identification of hazards, assessment of risks and evaluation of effectiveness of control measures (WHO, 1985B). We have some considerable way to go in the UK if this target is to be achieved by 1995. The difficulties of gaining access to a person's home for health and safety issues are considerable. Even today, not all workplaces are routinely inspected by the HSE on an annual basis. This is the result of reduced numbers of inspectors, and the emergence of new small companies which do not trade for long.

A prime example of the overlay of European considerations on developments in the UK was the implementation of the Control of Substances Hazardous to Health Regulations 1988 (HMSO, 1988). These regulations were promulgated in part to meet requirements placed on the UK as a member of the European Community. There was a specific need to provide protection at work for people exposed to substances hazardous

to health. The Government did not seem to have the same problem with these requirements as it did with the requirements of working hours in the Social Chapter.

The COSHH regulations are a major legislative event in occupational health care. The regulations specify the arrangements for caring for people at work who may be exposed to substances hazardous to health. It is an acknowledgement that occupational disease is as important a factor as accidents and injuries at work, if not more so. It is an attempt to provide a systematic framework for the analysis of the interaction between exposure to substances by individuals, and the control mechanisms instituted in the workplace to prevent exposure to substances.

The regulations place a duty of care on employers to analyse substances used in the workplace, to make an assessment of risk, to keep the data base 'live' and to initiate appropriate control and prevention mechanisms. Each individual who is exposed to substances hazardous to health will have a record card, and people exposed to specified substances will also have to undergo medical surveillance. Records have to be kept for specified time periods and there must be a system of linking environmental and health records. This will mean that all the occupational exposures that people have will be recorded, and that record could be transferred from organisation to organisation. This will build up an occupational exposure history, which will also identify where people were exposed to a cocktail of substances as well as single substances. This will provide a comprehensive data base on individuals, the jobs they did, the organisations they did them in and their exposure to substances.

There have as yet been only four Approved Codes of Practice made out of these regulations: the COSHH code, the Control of Carcinogenic Substances Code, the COSHH in Fumigation Operations code, and the Vinyl Chloride Monomer Code. Other codes will be developed as the need arises.

The recent government green paper on the Health of the Nation (HMSO, 1991) paid little attention to the workplace as a focus for health initiatives or a place where true preventive activities could take place. William Waldegrave, the then Secretary of State for Health, in his foreword, identified three main points: firstly that the document was about the prevention of ill-health and the promotion of good health; secondly that there was a need for people to change their behaviour; and thirdly that the setting of objectives and targets will provide a disciplined approach towards improving health (HMSO, 1991).

The document identified the major challenges that need to be addressed:

- to increase understanding of the state of the population's health and what influences it,
- to reduce exposure to risks from people's own behaviour or the environment which damage health,
- to take action to ensure that people are properly informed and have the freedom to exercise choice. People cannot be forced to behave sensibly in terms of their smoking, eating, exercise, alcohol or sexual habits,
- to continue to improve the efficiency, effectiveness and quality of NHS care, and
- for government or others, to take effective action on behalf of the community as a whole, to monitor and, when necessary, to eliminate or minimise the threats to individuals from the external world which they cannot themselves control" (HMSO, p. viii-ix).

In the past there has not been integration of knowledge and understanding of workplace health issues into main stream health provision. Even now it will be difficult for the Department of Health to affect major change and initiatives in the workplace. The responsibility for workplace health and safety rests with the Department of Employment and is managed through the Health and Safety Commission as its operational arm.

Summary

This chapter has sought to raise the main points of interest in this debate, the effect of work on health and health on work; the national and international arrangements for addressing these issues; and highlighting recent developments which it is hoped will help in managing the health of people who are at work. This study goes some way to addressing the first of the Department of Health's challenge, an increased understanding of the state of the (employed) population's health and what influences it. There are however, still major concerns. Despite the move internationally to extend the meaning and understanding of the effects of work on health and health on work, there is no central focus on providing health care in the workplace and the health needs of people at work, both specific and general. These are people who for set hours in the working day are focused in their activities; health professionals should also be focused on these activities if they are to prevent ill health and promote health.

Half the population in the UK is at work. There is a tremendous opportunity to influence their health, their behaviour, and their attitudes towards a shared responsibility for their health in relation to the work they do, their leisure activities and their life-style.

Chapter 2

LITERATURE REVIEW

Introduction

This chapter seeks to expand some of the issues raised in the previous chapter by beginning to address the central issue of health and applying that concept to the world of work, then returning to explore the developing concept of occupational health and occupational health as part of primary care.

The previous chapter has raised issues which describe what has happened in the past, and what is currently happening in the work-health dimension. Attention has been drawn to some of the factors of health affecting work, and work affecting health, and some of the prevailing national and international arrangements for addressing these issues. The main issue emerging is that health in the workplace is seen as separate and distinct from health generally in the UK. This leads to a marginalisation of workplace health, when in reality, together with the health of school children, it should be the prime focus of health in the UK. If this were taken as an underlying philosophy, the well people's needs would be addressed, prevention would become a much more valued concept and promotion of health would be more realistic in that ideally people could be given appropriate education to prevent many illnesses and diseases.

There are other shortcomings in the present system: there is no systematic understanding of the health of the people who are at work; there is major under reporting of the illness and disease occurrence in people who are at work, particularly in relation to occupational health issues; there is a national philosophy which will not enforce the provision of health arrangements in the workplace, allowing for a voluntary arrangement to be seen as the way forward.

This study is an examination of the health of an employed population. The key factors affecting health are explored with the intention of examining the issues which address

the question of whether people who work feel they are healthy, if they feel particular activities have affected their health, and to assertion if they have a personal construct of health.

The literature review for this study has addressed three major concepts: health, ill-health, and disease; and then considers these concepts in relation to the health - work dimension.

There has been an attempt to consider recent literature; inevitably an historical perspective has to be taken when considering health and work. The review has been restricted to English texts and to work which reflects the developed world rather than a broad view which would include third world issues or anthropological studies.

The literature has been divided into two parts; the formal review of the literature related to health, illness, disease and work is to some extent contained in this chapter. However, the literature is used throughout the study to highlight, support and explain the text and results.

There cannot be any concept of health, wellness, illness and or disease amongst an employed population unless the health-work dimension is taken into consideration. Social theory in this area is incomplete unless the concept of work is included. Work has the potential to damage health by exposure to substances, even to the suggestion of damaging the unborn child (Markku, et.al., 1991); also by physical damage due to accidents and injury, and there is the potential of damage to the mental health of workers, by work methods and the work itself.

Work gives people place and position in society; it gives them the potential to earn money, to keep themselves and their families. It is seen as a 'good' thing to have by most people. There is considerable debate about the future of work; the type of work it will be, how it will be done, where it will be done and who will do it (Toffler, 1980;

Handy, 1989). All these issues have the potential for affecting the health of some people.

The theoretical basis of morbidity and mortality as prime measures of 'health' is totally unrealistic unless the damaging effects of work and employment become an integral part of the equation. There cannot be a measure for death and disease in a nation without identifying the causes, and once the true causes are identified, efforts made to prevent their continuation or reoccurrence.

Purpose of the Study

The purpose of this study is to examine the perceived health of people in employment. The study will consider individuals health in relation to their individual perceptions and their understanding of effects of work, leisure and life-style on their health.

Concepts of Health

What is meant by health has concentrated peoples minds for some considerable time.

There are international definitions,

"The extent to which an individual or group is able, on the one hand, to realise aspirations and satisfy needs and on the other hand, to change or cope with the environment. Health is therefore seen as a resource for every day life, not the objective of living: it is a positive concept emphasizing social and personal resources as well as physical capacities." (WHO, 1985B, p. 36)

It is important, therefore, that this resource is not damaged by every day life. People do have aspirations about themselves; they may not express those aspirations in terms of health, but by using other language. These aspirations may be 'simple' ones, of doing a good job at work, having a home in which to bring up their family, to earn sufficient money to have a good and interesting life with sufficient food, warmth and protection. Our aspirations reflect the society in which we live; our needs are those of our society and culture. There needs to be consideration of the environment that people live in, their housing, diet, leisure activities, work. To have people who feel

they are healthy in a community must make that community healthy, gives it a strong sense of identity and feeling of being positive and empowered.

The WHO Regional Office for Europe has recently published *Targets for Health for All* (WHO, 1985B), arising out of the Alma Ata Conference and *Health for All by the Year 2000*. The European targets reflect the industrial base of the member countries and have three main foci; the promotion of lifestyles conducive to health, the reduction of preventable conditions, and the provision of care which is adequate, accessible and acceptable to all (WHO, 1985B).

It is interesting that promotion comes before prevention in these targets. In occupational health terms prevention will always come before promotion, the workplace being seen as a place where conditions, events and the environment can or should be controlled.

The European target No. 25 relates to the working environment:

"By 1995, people of the region should be effectively protected against work related health risks. The achievement of this target will require the introduction of appropriate occupational health services to cover the needs of all workers; the development of health criteria for the protection of workers against biological, chemical and physical hazards; the implementation of technical and educational measures to reduce work related risk factors; and the safeguarding of specially vulnerable groups of workers." (WHO, 1985B, p. 92)

This suggests that there should be measures and standards of control which support prevention. A resolution of the Thirtieth World Health Assembly in May 1977, resolved that:

"The main social target of governments and WHO in the coming decades should be the attainment by all citizens of the world by the year 2000 of a level of health that will permit them to lead a socially and economically productive life." (WHO, 1985B, p. 1)

This resolution was based on the fact that, despite economic input and new developments, people's level of health is still far lower than it could be, and there are still enormous inequalities in health. The focus for the regional strategy development required change in four main areas:

"lifestyle and health; risk factors affecting health and the environment; reorientation of the health care system itself and the political, management technological manpower, research and other support necessary to bring about the desired changes in those three areas" (WHO, 1985B, p. 2).

All four of these areas will have the potential for affecting change in occupational health in the UK. Lifestyle is a major effector of health. The important elements of diet, smoking, exercise and alcohol consumption can have an effect on health, both positively and negatively. The workplace is a place where these elements of lifestyle can be addressed, in context to an audience which is receptive and to some extent captive. Risk factors affecting health and the environment could originate in the workplace; this could be from emissions of noxious substances to workplace contaminates being taken home to children to pesticides being put into rivers and streams. Reorientation of the health care system is taking place in the UK. This would be an ideal time to more positively include the workplace as part of a primary care focus and deal with it as part of community care.

There is an acknowledgement in these various quotations that work can have an effect on a person's health. Once health has been damaged by work, the essential resource of health may be diminished and the community as a whole suffer. There is a strong link between the work that is done in a community and the strength or potential of that community. In communities where work is limited or hazardous and unemployment is high, it has been shown that the health of the population suffers (Barker, 1991).

McDowell and Newell (1987) clearly identify the need for a conceptualisation of terminology in measuring health or its deviations. They argue that any approach to measurement should have as its basis a conceptual framework.

"The conceptual definition of an index relates it to a broader body of theory and shows how the results obtained may be interpreted in the light of that theory." (McDowell & Newell, 1987, p. 23)

The difficulty arises in trying to utilise the many and various definitions available for use. Hunt, et. al. (1986) identify the three dominant concepts which must be included in studies which address health status, namely: health, disease and illness. These

writers acknowledge that to decide or describe what health is *not* is usually greeted with more approval than attempts to describe what health is. They go on to conclude that the presence of health relates to capacities which are social, psychological, physical and functional and in a manner relative to time, place and contemporary technology.

Much that has happened in the past to explain health has been reductionist, moving down to small or common denominators which in terms of a persons life span may or may not have an impact on health. Until approximately two hundred years ago, 'health' was seen as soundness of mind, body and spirit (Gott & O'Brien, 1990). The emergence of 'science' brought about this shift which is becoming even more apparent today. The delivery of health care is seen as areas of specialism with some practitioners moving along the same pathway as medicine in being prescriptive in assessing need. There is a need to open wide the debate, to listen to what people tell us about their life, their work, their minds and bodies; to use this information in a way that will help them and hopefully enrich their lives, through addressing what they see as their health needs; to move from a reductionist or narrowing approach to considering the individual as a whole, and not the parts of a whole.

Williams (1983) describes a study related to an elderly population in Aberdeen, Scotland; included in this study was a mix of middle and working class areas. The study was to assess the relationships between the ideas of illness, disease, strength, weakness, exhaustion, pain and functional fitness. The aim was to assess people's self rating of health. Williams argues that health can be used to mean absence of disease. It can also be used in a more complex and positive sense, and can be related to activity or moral effort. People can feel they have a stock or reserve of health; this could be seen as the intrinsic 'core' of the person. This core can be seen as being 'right', or the core being damaged or weakened by ill-health or events. This concept would fit with the WHO 1985 definition of health, a personal resource. People in this study, when considering degeneration of health, focused on weakness; not just

physical weakness, but also weakness as vulnerability. Therefore, health became strength. People in this study continued with the notion that disease could be present but a person could still perceive themselves as healthy;

"when, therefore, health was defined as 'never ill' or 'rarely ill' the reference was usually to socially justified illness which implied an objective somatic source of symptoms - a disease: the sort of illness which in turn, justified staying off work" (Williams, 1983, p. 189).

Smith (1992) in his paper on "Setting a strategy for health", revisits the initial intentions behind the establishment of the NHS; these were:

- to promote the nation's health
- to ensure the equitable distribution of health care,
- to render the health service accountable to the nation; and
- to invest the activities and development of the NHS with a sense of purpose" (p. 376).

There is still some long way to go in achieving Smith's objectives for health. Smith continues the debate on what is health by identifying the various ways it could be viewed:

- a public resource
- a commodity for distribution
- a basic human right

Like other authors (Capra, 1982; Illich, 1976) he feels that health is 'contingent on circumstances'; these circumstances could include time, place, events, effects. The definition of health offered by Smith is:

"people are healthy to the extent that they are able to meet their obligations and to enjoy the rewards associated with membership of their community" (p. 37).

Smith focuses on the notion of individuality in relationship to health, and feels that strategies developed for health would also need to demonstrate this notion. This is an interesting argument in that his definition of health has elements of collectivism in it. The individual will be able to meet his personal obligations which will maintain the community, allowing for rewards. This seems to suggest a 'systems approach'

(Silverman, 1970), the sum of the parts working to achieve the good of the whole. Smith continues this approach by stating that a national strategy for health should be based on a clear national health policy where the importance of health, alongside other important national goals, for example defence, economic growth, education and transport, is clearly identified and stated. This vision needs to be compared to the vision held by people who would be described as reductionist. The two views need to be considered in relation to outcome, and the process that different practitioners would use to approach health/ill-health issues.

Berg (1975) continues this argument by describing the human organism as having a 'systemic (holistic) nature'. He feels that modern research has:

"made increasingly clear, that the human organism also is a dynamic system functioning in a dynamic environment" (p. 5).

This author's views could have been the blueprint for Smith's (1992) more current views on the need to demonstrate health as part of national goals. The language that Berg (1975) uses is:

"that by creating, or recreating more overarching and unifying goals, and by making the subgoals steps, steps in the direction of achieving the more authoritative goals, fragmentation might be curbed or at least modified" (p. 21).

These concerns are expressed because of the apparent position of reductionism by science of health care to become ill-health care.

The Health of the Public

Also within these quotations are examples of the multi-factoral nature of health, and that it is both personal and collective. Definitions of health, or understanding of what health is, will vary from individual to individual. It will depend on previous experience, expectations, whether they are a professional health person or a lay person, which market place they 'buy' their health care from, the culture from which they come and the society in which they live. The problem of trying to define concepts of health that fit into the area of occupational health have taxed people's minds for some time, in that the population at work is seen as a fit and healthy

population. The history of occupational disease and ill health is well documented (Ramazzini, 1713; Thackray, 1832), and still this history does not seem to have an effect on policy developers' perception of the need for health care in the workplace. This is further removed from the provision of health care nationally by the definite policy decision to distance health care at work from health care generally (Townsend & Davidson, 1988). Occupational health is not seen as part of the 'public health'. In 1985 the Secretary of State for Health established a committee of enquiry into the 'future development of public health function' with the following terms of reference:

"To consider the future development of the public health function, including the control of communicable diseases and the speciality of community medicine, following the introduction of general management into the Hospital and Community Health Services, and recognising a continued need for improvements in effectiveness and efficiency: and to make recommendations as soon as possible, and no later than December 1986." (DHSS, 1988, p. 26)

The committee membership included a wide range of people concerned with the health of the public. This committee defined public health as:

"The art and science of preventing disease, prolonging life and promoting health through the organised efforts of society" (p. 26).

This review was the first comprehensive review of the public health since the Royal Sanitary Commission of 1871. This was an ideal opportunity to review the health of the public in its widest sense. The opportunity was not taken up. The recommendations centred on the activities within the National Health Service; reminding health authorities of their responsibilities for health, that public health doctors should be part of the decision-making machinery of the authority (general management), that an annual report should be produced on the state of the health of the District, and that a central unit be set up at the Department of Health to monitor the health of the population from a national perspective.

The population at work is 'captive' for a set number of hours a week; this makes them available and accessible in large groups. To approach people in this sort of setting must be a value for money issue. A large group of people can be dealt with in one setting; this can save time and effort on the part of people wishing to share health

messages with them. This group of people could also be used to cascade information to others in the community. They could be the focus and catalyst for change. The health of the public is the responsibility of the Department of Health whether the people are at work or not, but the strategies for achieving the public's health still seem to be under-developed.

Life-style and Health

People bring their 'existing health' to work. Their health could have been affected positively or negatively by their life-style, and is a reflection of individuals' values, beliefs, priorities and interactions with health systems. Life-style is a difficult term to explain, people have a notion of what it means, but it will mean different things to different people. In the past life-style was seen as something which was purely the responsibility of the individual, a responsibility in which the State and society had a minimal part to play.

"To a large extent though, it is clear that the weight of responsibility for his own state of health lies on the shoulders of the individual himself." (HMSO, 1976, p. 38)

This view has changed, and the publication most responsible for this change was the Black Report (Townsend, 1982). The report was not well received by the Government of the day when it was presented in 1980, and there was a strong move to discount the major recommendations and the general thrust of the arguments that inequalities in society lead in some measure to inequalities in health. The variations in health and disease could not be discounted just on the basis of behaviour of individuals. Other social factors such as income, education, occupation, housing and diet also needed to be considered when looking at a person's health.

The view of a more rounded and wider embracing approach to looking at health and life-style was emphasised by the Health For All by the Year 2000 activities following the WHO Alma Ata declaration in 1978:

"The main social target of WHO in the coming decades should be the attainment by all citizens of the world by the year 2000 of a level of health that will permit them to lead a socially and economically productive life." (WHO, 1978, quoted in WHO, 1985B, p. 1)

The European Region of WHO issued 38 targets for Health For All in 1984 (WHO, 1985B). Targets 13 to 17 relate to life-style and include areas of concern such as healthy public policy, social support systems, knowledge and motivation for health behaviour, positive health behaviour, and health damaging behaviour. This acknowledges the need for public policy and social intervention as well as individual responsibility. A report from an independent multidisciplinary committee, *The Nation's Health* (Smith and Jacobson, 1988), looked at the health of the nation, that is, both the current patterns of disease and of health-related behaviour.

The report, which is very comprehensive and unusually incorporates health in the workplace, continues to develop the theme of shared responsibility for health. The report, by focusing on disease and health behaviour, addresses many life-style issues: circulatory disease, cancers, alcohol, AIDS, road safety, tobacco, diet, sexuality and reproductive health. From this wealth of information the final part of the report identifies a strategy for public health interventions which would have significant health benefits. The main areas of concern are not too different from the European Regions targets for Health For All. This is to be expected, but the supporting evidence links the problem areas with areas of professional and political interaction.

The emerging or re-emerging of a stronger public health approach to health is evident in the late 1980's (WHO, 1985B; Smith & Jacobson, 1988; Ashton & Seymour, 1988). The current focus is moving back towards the earlier health philosophies of the late 1800's and early 1900's that the emphasis must be on prevention, and on a corporate, community basis rather than expecting individuals to take total responsibility for their own health and to control factors beyond their capacity to do so. The move now is towards 'healthy cities', seeing individuals, families and government within a social and cultural setting in which everyone has a role and part to play in maintaining a healthy life-style and therefore contributing to the health of the nation (Ashton & Seymour, 1988). This development has resulted from the obvious failure of 'health systems' to improve the health of the nation beyond a certain point.

There has been a re-visiting of public health issues, a greater awareness of the individual, the family and the community in relation to health care; a greater acknowledgement of the need to empower people to take responsibility for their health in partnership with others.

The emergence of the 'green' movement may have been a prime force for this development. Disasters such as Bhopal and Chernobyl have caused incalculable ecological and environmental devastation. There is increased social awareness of the diminishing resources of the world and the fragility of the current infrastructure in protecting those resources.

Blaxter (1990) continues the research into lifestyle and health, and acknowledges the wide ranging and multifactoral nature of the term. The recent consultative document from the Department of Health, "The Health of the Nation" (HMSO, 1991), is a multi-governmental department publication suggesting a framework for a strategy for health, focusing on key target areas, with suggested targets for success. Further reference will be made to this and other publications in the analysis of results from this current survey.

Leisure and Health

The Health of the Nation (HOTN) (HMSO, 1992) identifies that physical activity not only makes a contribution to the prevention and management of obesity and overweight, but affords direct protection against coronary heart disease. In June 1992 the results of a national survey by Allied Dunbar, the HEA, the Sports Council and the Department of Health indicated that the population of England was not very active,

"about one third of middle-aged men and one half of middle-aged women are 'unfit' for continuous walking on the level at a normal pace (about 3 m.p.h.)" (HMSO, 1992, p. 62).

The Government will develop a detailed strategy for physical activity in the light of these survey results.

More and more people are being urged to take exercise for their health's sake (HMSO, 1991). There is a vast growing industry directed at the leisure time of people, and central to that is the notion of taking exercise to improve and maintain a healthy mind and body. This relationship between leisure and exercise is probably a result of the national health education campaigns aimed at increasing the amount of exercise people take as a means of reducing heart disease. Since society has moved from that of very physical activities being a feature of most occupations to one in which many people have few physical demands made on them in the workplace, the need has been to educate people into the importance of exercise to their health. This need became even more apparent with the very positive link between exercise and coronary heart disease. For a person to be considered fit, they need to have suppleness, strength and stamina. This notion is very clearly demonstrated in the Health Education Authorities booklet, "Exercise. Why Bother?" (HEA, undated). The booklet is published as part of the 'Look after your heart' campaign. This campaign has received coverage in all aspects of the media, and has a very clear message - exercise is not only good for you, it is necessary for a healthy life (Fentem, Bassey & Turnbull, 1988; Gloag, 1992). Many people who work have very little opportunity for exercise during the working day; many people are desk bound, or working at machines where the rate of progress or activity is dictated by the speed of the machine itself (Taylor, 1969; Tuckett, 1976; Smith & Jacobson, 1988). People often do not live near to their work, which can mean travelling to work on public or private transport, again little opportunity for exercise. Some people work by travelling around a particular geographical area, service people, sales people, some professional groups. To this lack of opportunity for exercise must be added the stress of driving on the very congested roads in the UK.

Exercise is a very important part of rehabilitation following ill-health or injury, both from a physical and psychological point of view, to establish the capabilities of people and to set them goals for achievement. This philosophy is particularly important in

people who have experienced a heart attack. The aim of such rehabilitation programmes is:

"to improve the overall fitness of those who have suffered a heart attack and to reduce the risk of repeat attack and the incidence of heart disease" (Lloyd, 1991, p. 142).

This approach is not new, many traditional industries offered rehabilitation programmes to employees who became damaged by the work they did. Following the nationalisation of the coal industry, the Board set up rehabilitation centres to improve the physical opportunities for employees to work towards recovery. Other organisations had similar arrangements; Pilkington's the glass manufacturers became world leaders in delicate hand and arm surgery and the necessary rehabilitation programmes that followed such surgery (Cameron, 1972).

Exercise and fitness should of course be seen as aspects of prevention of sickness and injury, as well as promotion of wellness. Many organisations are actively encouraging a corporate approach to fitness. Evidence seems to be emerging that people who take regular exercise and are fit have less absenteeism from work when compared to other employees, and have a greater sense of satisfaction with their work (Shephard, 1983; Ashton, 1989). Employers in Japanese organisations manage the working day in such a way that there are exercise breaks at the beginning of the day and during the day. Everyone takes part in these exercises. This could be interpreted as paternalistic, but it does make good sense to ensure that people think about their bodies and its capabilities during the working day. An employers major asset is his work force; he is morally and legally duty bound to care for employees whilst they are at work.

For many years some large organisations offered sports facilities; these tended to reflect the major sports interests of the time, i.e. football, rugby. Some organisations provided sports and social centres; these were usually an outdoor sports field and a social club for drinking and other social activities, darts, card games, dancing. With

the changing times and economic overview, sports fields have tended to be sold off for their land value and arrangements made for more space conserving activities, i.e. gym work. Nationally, many organisations have taken on board the American pattern of providing exercise and health support systems in the workplace; Rank Xerox, IBM, Kellogg, Ford and Shell. All these companies provide corporate gymnasiums with professional instructors, essential for appropriate use of facilities (Sigman, 1992).

Recent research by Shinton and Sagar (1993) seems to suggest that vigorous exercise in early adulthood could give protection in later life from stroke. These authors also suggest that increased benefits can be obtained by continuing that physical activity throughout life. However, the research would also seem to indicate that any recent exercise and regular walking would have a protective effect on men and women.

Other Leisure Activities

Many people do other things with their leisure time rather than take exercise. Some like to visit friends or relatives, to socialise, to share a meal, go for a drink, listen to music, go to the theatre, a whole host of things. All these activities have benefits. Many people like to spend their leisure time in more solitary activities, fishing, reading, listening to records. Not everyone needs, or can tolerate people around them at all times. If their work is very person centred, they may want their leisure time to be spent with just a few people, or none at all.

Local authorities offer many recreational classes in the evening, some are educational, others are purely for pleasure. The problem is that often these non-vocational courses are the first to be cut when a local authority finds itself in difficulty with its budgets. The range of facilities in a particular area will vary in different parts of the countryside, and will depend on local demand and available finances.

Physical exercise is not the only form of exercise from which people can benefit. Mental health requires exercise of 'the little grey cells'; this means an opportunity to

think and partake in mental exercises and stimulation. These can range from learning another language to grappling with making a blouse or framing a picture. Leisure activities include a whole range of activities, physical, mental and social. All are necessary to contribute to an individuals health.

The recent 'Look after your Heart' campaign used prime television time to try to convey to people the importance of physical exercise; walking the dog in the park was shown as a good starting point. The Health Education Council could very profitably target the workplace to improve take up of leisure activities. There is also a need to educate people for leisure; this will be a requirement for those people who find themselves redundant or retired early, particularly if they have not developed hobbies or interests outside work. During the 1970's the Reed Paper group at its factory in Darwin in Lancashire had a programme of preparation for retirement. When a person reached 60 years of age they started to work a four day week; by the time they reached 65 they were working a one day week. They were eased into retirement and able to manage their leisure time effectively.

Education for Health

A major development along with other developments for health has been the emergence of health promotion as a major change agent for 'good' health. Health promotion and health education are seen as key factors for an individual working in partnership with health care providers in achieving optimum health.

"Without education for health knowledge and understanding, there can be no informed decisions and actions to promote health" (Ewels and Simnett, 1985, p. 11).

Most District Health Authorities and Family Health Service Authorities are now actively promoting health information. This information may be specifically targeted, i.e. smoking awareness, health care during pregnancy or diet awareness. The emphasis on health promotion in these two organisations is likely to be that of facilitating other health professionals to deliver the messages; this is as it should be. The nearer to the receiver the message is given, the easier it is to understand and be

accepted. The response to health education and health promotion messages on the effect of smoking on health are a good example of working in partnership with individuals in society to achieve a social good. This development took place in an environment in which taxes from tobacco and alcohol sales are a major element of government resources.

In 1988 in the State of Victoria in Australia, the State Government made available tobacco taxation to promote health and prevent illness. The money, \$23 million Australian dollars, was divided into three main targets:

"30% directly on health promotion; 30% on sponsoring sporting bodies to replace tobacco sponsorship; the remainder to be spent on research and sponsorship of arts and culture" (Turner, 1990, p. 59).

The scheme was called "Healthy Localities", and the focus was on developing new initiatives which would have an impact on the wider issues such as environmental health. The themes that emerged included nutrition, ageing, youth health, and environmental pollution. These themes will be addressed through local initiatives and research. The scheme has now been designated as a WHO demonstration project and will continue to be assessed and evaluated (Turner, 1990).

If such a scheme were to be developed here in the UK, there would be tremendous interest. In many instances when considering the Health of the Nation targets, major achievements could be realised by affecting a reduction in smoking. One of the most vulnerable groups is pregnant women who smoke. These women often give birth to a baby which has a low birth weight. This can disadvantage the baby in its ability to grow and develop. As a community we should be very concerned about this. We should be putting resources into dealing with this major health problem, educating and supporting mothers into stopping or reducing their smoking whilst pregnant, saving a baby an extra struggle in life, saving the health services the resources needed to care for the baby, seeking to improve the health of future generations.

Other Factors Affecting Health

Smoking

Smoking has long been associated with ill-health, and there has been considerable effort by health professionals and the State to educate people to the adverse effects of smoking. The statistics on smoking related disease are well documented (Doll & Peto, 1981; Smith & Jacobson, 1988; HMSO, 1991).

The major health effects are cancers, coronary heart disease, stroke, obstructive airways disease, vascular disease, and low birth weight of babies born to mothers who smoke (HMSO, 1991). A new element to the debate on smoking is the health effects of passive smoking. For some considerable time it has been felt that passive smoking is a health risk. The association between smoking related diseases present in people who do not smoke, and their exposure to smoking in their home and working environment has been the basis of a long struggle with tobacco manufacturers and health professionals (Anonymous, 1989; Chapman & Woodward, 1991). Howard (1990), in a regular contribution to the Occupational Health Journal, described a case in the UK where an employee won disability benefit because of her allergic reaction to smoke from colleagues' cigarettes. This legal decision resulted in passive smoking being described as an industrial injury. This was the first instance in the UK of such a decision being made. The result should be to make more employers develop policies regarding smoking in the workplace and make provision for those who wish to work in a tobacco free environment. A recent initiative by the Department of Health related to the Health of the Nation Strategy on Health in the Workplace, makes the provision of policy development to manage smoking in the workplace a major target for all workplaces. The HSE are actively monitoring developments in this area (HSE, 1991).

Chapman and Rubinstein (1987), in a small study into smokers' beliefs about smoking and health carried out in Adelaide (Australia), feel that a different approach needs to be taken in relation to helping people who smoke. From their study it would appear that in addition to giving people information about the effects of smoking on

health, we also need to dispel myths and misinformation about the effects of health and smoking.

The HEA book, *The Smoking Epidemic*, lists the major causes of smoking deaths as:

- lung cancer
- coronary heart disease
- chronic obstructive pulmonary disease
- other cancers
- stroke
- vascular disease
- ulcers

(HEA, 1991)

Deaths from smoking related disease nationally accounted for 110,700 deaths (17%) in 1988, and this does not take into account effects of passive smoking or the effects of smoking on maternal and infant health. By far the largest effect is on lung cancer deaths, 32,300 (29% of deaths); and coronary heart disease, 32,100 (29%) (HEA, 1991). There is also the additional costs of health care, loss of social contribution and lost production at work. The national figure for hospital care of people with the above conditions was £324,867,000 for the year 1990/91 (HEA, 1991). This figure is based on bed occupancy and does not include the wider health and social costs.

In the West Midlands alone, 32,251 people died from coronary heart disease, stroke, lung cancer, other cancers linked to smoking, chronic obstructive pulmonary disease, and other smoking attributable diseases in 1988; and the cost to the NHS for hospital care was £28,679,000. Of these deaths, 9,804 (one in six or 17%) died because of their smoking (HEA, 1991).

Drinking

In 1990, the cost to UK industry of deaths from alcoholism was £1.3 billion (Long, 1991). Goddard (1991) explores the debate that the effects of drinking can be both positive and negative, and argues that the high mortality or prevalence of illness amongst abstainers could be due to previous drinking patterns. There is considerable concern placed on drinking alcohol in society (Goddard, 1991). There is a positive

move to encourage people to think about the amount they are drinking by the introduction of the idea of units of alcohol. There is a recommended limit of 21 units of alcohol for a man and 14 units of alcohol for a woman, this is per week. Excessive drinking is associated with various cancers, liver disease and "physical, psychological and social harm" (HMSO, 1991, p. 68).

Many organisations who in the past condoned drinking of alcohol as part of a persons occupation, now have very definite policies on workplace drinking. Most breweries are now 'dry' workplaces, where alcohol for consumption by employees is banned. Other workplaces may have alcohol policies in relation to drinking on the organisations premises, but there is the fact that employees could drink alcohol during their lunch break and return to work for the afternoon. Goddard (1991) found a direct association between social class and drinking during working hours. The association was not the common one that people normally make; those in social class I were much more likely to take a drink during working hours than those in social class V.

In 1981 the HSE produced a booklet on the problem drinker at work (HSE, 1981B). This booklet focused on the problem drinker in two ways, the person who drank and threatened the health and safety of others at work and the person whose drinking habits became a personal threat in that the health and social effects are personally serious. Webb and Schilling (1988), when looking at health at work, addressed the taking of alcohol as a stress management issue. People at work are stressed, therefore they take alcohol. They quote a figure of £600 million per year as the cost of alcohol abuse on industry. They then go on to describe the importance of policy development and implementation to manage the problem of people drinking at work. It must be said that their approach seems simplistic, to put the whole issue down to 'stress management' is difficult to understand, and not to address the whole issue of personal choice, disease theory and behaviour patterns scews the argument.

There is considerable emphasis placed on drinking and driving, and although the main thrust of these campaigns is at social drinking, the spill over effect into occupations must have been significant. Most organisations who employ people as drivers would not now be allowing drinking and driving to take place. In some organisations, to be convicted of such an offence could lead to a person losing their employment.

Regulation in terms of the Road Safety Act 1967 made it illegal to drive a vehicle with a blood alcohol level in excess of 80 mg. per cent (milligrams per 100 millilitres).

With this limit there was a need to take measurements, and this allowed for the use of the breath analyser. There has been a considerable reduction in road traffic accidents and casualties through this action, through the more rigorous enforcement of the previous legislation in the Transport Act of 1981. People can now be stopped and breathalised at the road side if a police officer suspects that they have been drinking alcohol prior to driving. There appears to be some evidence that this action, together with targeted publicity drives, has brought about a reduction in drinking and driving (Department of Transport, 1986).

One of the most difficult areas for an employer to regulate is when an employee has been drinking the previous evening and comes to work in the morning still effectively drunk because of the amount of alcohol they have taken the previous evening. In many organisations, to arrive for work smelling of alcohol could mean that the person is not allowed to work that particular shift. More and more people are aware of the effects of alcohol on an individual's behaviour and the effect on the economy in terms of lost production, accidents and absenteeism.

An OPCS survey of drinking in England and Wales carried out in October 1989 with a sample of 3,600 men and women of 16 years and over was primarily to identify differences from a previous study in 1987, prior to the implementation of the Licensing Act of 1988. There was no significant difference in the average weekly consumption of alcohol; this figure was also still the same level of the 1978 survey.

There was a fall in consumption amongst younger men and a rise in all women except the younger age groups. There was also more drinking taking place in the home (Goddard, 1991).

In 1988, £18,500 million was spent on purchasing alcohol in the UK; this reduces to £434 per person, per year, for everyone of 15 years and over (Appleby & Adams, 1991). When consideration is given to the number of people who do not drink, then some people are spending an incredible amount of money on alcohol.

Work and Health

Health Hazards Associated With Work Done

Hazards at work are classified in the following categories (WHO, 1975A):

- Chemical
- Physical
- Mechanical
- Biological
- Psychosocial

This list is used in a problem solving way when assessing a workplace for potential hazards.

Substances get into the body by means of inhalation, skin absorption and/or ingestion. The inhalation of substances is the most common route of entry. Large particles are usually filtered by the nose, but small (below 5 microns) particles can enter the alveoli of the lungs from where they can cause local damage or be absorbed into the blood stream. The skin provides some protection from the absorption of substances, and relatively few substances are directly absorbed, however organic solvents and phenols are. Substances may be absorbed through the skin if it is damaged by injury and not protected. Ingestion of substances is often due to poor personal hygiene, i.e. not washing hands before eating sandwiches, or by nail biting or smoking. There can be instances when inhaled particles are coughed up and are then swallowed. In all instances, there will be individual susceptibility; not all people will respond in the same

way to exposure to substances. Susceptibility can depend on age, race, sex, state of health and level of exposure.

Chemical Hazards

Chemical hazards could be in the form of solids, liquids, gases, vapours, mists. For example, solids in the form of coal dust; liquids could be mercury or gluteraldehyde; gases could be anaesthetic gases or propane gas; vapours could be given off substances at a particular temperature or could include solvent vapour given off by cleaning agents such as trichloroethylene. Mists occur when very fine particles of a substance get into a free atmosphere. An example would be oil in suspension in the air, oil mist.

Chemicals can provoke a fairly standard response in individuals. They can cause irritation of the respiratory system, the skin and eyes. There can be sensitisation of both the respiratory system and the skin.

Long-term Effects

There is growing concern that long-term exposure to chemicals can result in cancer. The area of study is fraught with difficulty (Doll, 1985). There are certain groups of workers who have traditionally identified the relationship between exposure and cancer development, i.e. chimney sweeps and mule spinners with scrotal cancer, asbestos workers with lung cancer, outdoor workers with skin cancer. The problem now to be addressed is the multi-factoral issues of multi-exposure and occupation.

"At best they (industrialists, trade unionists officials of regulatory agencies) are bemused by the number of contradictory reports; at worst they ignore signs of important new hazards or undermine harmless industries on which employment and the economic health of society depends." (Doll, 1985, p. 23)

This uncertainty arises out of the complex nature of the problem and the difficulties in studying the issues. The multi-factoral issues of exposure to substances has been demonstrated in synergistic relationship between just two factors, i.e. smoking and

exposure to asbestos. This exposure to two carcinogens increases the risk of cancer considerably (TUC, 1988).

Some substances have an immediate effect causing conditions such as occupational asthma (Dobson, 1989). Others have a medium term effect, which can of course be variable; this could be the development of skin changes, dermatitis, acne, skin cancer (Waldron, 1977). Long term effects have been described in men and women whose reproductive health has been affected following exposure to chemicals. Some substances can be teratogenic, having an effect on the foetus. It is thought that the following are teratogenic: cadmium, lead, mercury, organic solvents, some halogenated hydrocarbons, carbon monoxide, anaesthetic gases, oestrogenic compounds, ionising radiation, and carbon disulphide (Anonymous, 1979). Some of these substances are also mutogenic, that is capable of altering the genetic material of a cell, and this alteration is transmitted to subsequent generations of cells. Mutagens include chloroprene, perchloroethylene and vinyl chloride, which are halogenated hydrocarbon; anaesthetic gases; some pesticides, e.g. chlorinated; ionising radiation and ethylene oxide.

The whole issue of reproductive health is an emotive one, women being seen by some to be singled out by having their career choices restricted by legislation. In America, women working for a leading car battery maker had to produce a certificate of infertility from a medical practitioner if they wished to continue working in a 'good' job producing batteries. The argument was that the health of the unborn child could be affected by exposing the mother to lead. This argument did not allow for the prospective 'mother' to be involved in the debate, and the arbitrary decision made by the organisation is now being tested in the courts (Ellicott, 1990). The argument laid before the courts was that the company's action discriminated against some employees on the grounds of sex. The policy did not apply to fertile men, although lead can equally affect males (Scrivenor, 1991). There is now a question of European law being applied in such cases.

The application of the COSHH regulation to this area of chemical exposure will be beneficial in providing base line data on exposure, monitoring and control methods.

Physical Hazards

This group would cover activities in the workplace which could have an effect on an individual in a physical sense; this could include accidents such as tripping over objects, objects falling onto people, slipping on a wet or greasy floor. Another area of concern would be repetitive strain injury, muscular injury, problems associated with working posture, working in confined spaces, carrying out work which requires employees to wear protective clothing and equipment.

Ramazzini (1713) very ably described the health effects of 'those who work standing': varicose veins, ulcerated legs, weakened joints, kidney trouble and blood urine.

These conditions were found in soldiers, servants and courtiers. He also described the effects of sedentary work: tailors, cobblers, needlewomen. They became round shouldered; they limp, suffering numbness of the legs, lameness and sciatica; they are also prone to 'the itch'; they have a bad colour and are in poor condition (p. 275-285).

Olsen and Kristensen (1991) in a study which was addressing the 'impact of work environment on cardiovascular diseases in Denmark', describe how physical exercise has to be both vigorous and dynamic if it is to be contributing to the reduction in cardiovascular disease. They feel that only postmen and ballet dancers would be found to have sufficient dynamic muscle work. These authors feel that only 10% of the Danish work force have enough dynamic and aerobic muscle work during working hours. The occupational patterns in the UK are not dissimilar to those in Denmark; we probably have the same problems.

The same conditions occur in modern times with additional conditions introduced by technology and the pace of work. Mechanisation has brought with it the problem of noise in the workplace, the resulting deafness being referred to as 'occupationally

induced hearing loss' for which benefit is paid. Repetitive strain injuries are described as the modern disease of the 1980's.

We ask people to wear protective clothing and equipment to do their work: eye protection (accidents still occur) (Banerjee, 1990), hearing defenders, respirators, breathing equipment, gloves, helmets, protective suits and shoes. Sometimes the 'protective clothing' which is provided becomes a contributory factor in accidental injury. For example, it has long been acknowledged that the design of nurses uniforms inhibits nurses from adopting the right position for lifting (Johnson, 1992). The HORN is targeting accident reduction generally within the population, but does not have a specific target for the workplace. The targets are for specific age groups: children under 15 years, young people aged 15-24 years and people aged 65 years and over (HMSO, 1992).

Mechanical Hazards

Mechanical hazards would be linked to occupations where there is a potential for damage by mechanical means. Equipment in the workplace can be a cause of hazard if it is not guarded adequately or guards are removed and replaced. Equipment is sometimes given more care and attention in a workplace than the people who work with the equipment.

Biological Hazards

Any form of work which results in people coming into contact with biological substances has the potential for hazard. This group of workers would range from high class chefs in restaurants through market traders selling fruit and vegetables through farmers to microbiologists in hospital laboratories. The range of work is very extensive. In addition to the more straight forward infection hazards, people can develop allergies and sensitivities to biological substances. Equally well, a farmer could be gored by a bull.

Psychosocial Hazards

These are any hazards which could affect a worker from a psychological and/or social point of view, but which stem from the workplace rather than what the person brings to work with him. Examples would include working unsociable hours, abuse at work, feelings of stress, lack of control in work processes, shift working, or boredom.

There are physical stresses in the workplace which can affect a person psycho socially, e.g. poor visibility, noise, vibration, heat, cold, humidity, wind, motion, perceived dangers, overwork or underload, night-shifts and combinations of these (Poulton, 1978). Blaxter (1990) identifies psycho social health as one of the four dimensions of health, the other three being unfitness or fitness, disease and impairment or their absence, and experienced illness or freedom from illness. It is important for people at work to be considered as a whole person and for there to be an acknowledgement that their psycho social health can be affected by the work that they do, equally that factors affecting their psycho social health away from work can have an effect on the performance at work, i.e. divorce, separation, bereavement, moving house, changing job.

Other Factors Affecting Health at Work

Shift Work

The 24 hour biological clock which regulates the body gives us our peak performance in the afternoon and our lowest performance between one and five in the morning (Harma, 1992). This is something that health professionals should bear in mind when discussing health issues with shift workers.

Impaired health and shift work is discussed by many authors (Folkard, 1987; Harrington, 1978). There are few conclusive findings beyond gastro-intestinal disorders (Harma, 1992) and a general feeling of malaise likened to feelings of jet-lag. From the author's personal experience, this description would be apt.

Harrington (1978) reviewed 140 literature sources on the subject of shift work and health during the late 1970's. He could find no evidence that shift workers experienced greater mortality as a result of their work patterns. There was also little evidence to suggest that shift workers are less healthy than other workers. However, Harma (1992), in a review of shift workers in Finland, found that shift workers

"have twice the day worker's risk of stomach and duodenal ulcers. Moreover, the incidence of cardio-vascular disorders is increasing in shift workers" (p. 34).

Harma found that shift workers periodically suffered sleep disturbances, up to 25% chronically.

British industry works a variety of shift patterns: regular days, 6 am to 2 pm; afternoon shift, 2 pm to 10 pm; and nights, 10 pm to 6 am. These shifts are often worked on a rotating basis, on a weekly rota, with weekends being free. Sometimes the shifts are worked for seven days or nights, and then two days off are taken; this is called a continental shift pattern having its origins in Europe.

Most employers require employees to work shifts in order to gain maximum output from machinery or because of the nature of the business requiring 24 hour cover. An example of 24 hour cover would be in hospital or emergency services. Currently shift patterns in the NHS are causing concern. The human resources in an organisation are very costly. When those human resources are highly trained, more expense is incurred if they are not deployed and utilised effectively. The appropriate shift pattern to maximise those resources has been a debate in nursing for some years. The problem of shift working is emotive and of prime concern to the NHS, perhaps more so than other industries (Pownall, 1990; Roscoe & Haig, 1990).

Any shift pattern which has the potential for disturbing normal sleep patterns has the potential for upsetting some individuals (Folkard, 1987). Individuals who work shift rotation would have a disturbance to their normal sleeping patterns, which will have to be compensated for on their 'nights off' or rest days.

Working at night is socially deviant; it precludes the worker from taking part in many community or social activities with family and friends. The effects of working at night can build up over many years, and it is probably a mix of factors rather than just the one variable of night work which causes ill effects (Folkard, 1987). Any reading of the literature on shift working and health suggests that research is necessary (preferably longitudinal studies) to establish the reality for people doing this type of work (Brown, 1988; Folkard, 1987). There is a need also to study ex-shift workers. This group of workers was found by Harrington and Schilling (1981) to be more sickly than their colleagues who continued in shift work. The authors identified that the underlying cause is unknown; however 20% of all people who start shift work have to give it up, and the most common reason is a medical one. Perhaps a medical reason is a more legitimate reason than not liking shifts or it being disruptive on family and social life. A person giving up shifts for medical reasons is more likely to be found alternative work than someone who just does not like working shifts.

Home Ownership

Housing is another important factor to consider when looking at health. The early reductions in infectious diseases were brought about by housing policies and building developments which improved the quality of housing and reduced over crowding. The policy during the 1980's of selling local government houses to sitting tenants brought about a reduction in available housing to rent, and that, together with the repossessions of houses following in the effects of the recession, means that there are once again people who are homeless.

The Government is conscious of the link between good health, housing conditions and decent local environment, and is actively pursuing improvements to housing as a means of influencing the Health of the Nation (1992). It also intends, through the network provided through the WHO Healthy Cities programme, to extend action to rural as well as urban environments, to develop healthy alliances. The Government has an objective to ensure that decent housing is within the reach of all families:

"The Government will continue to pursue its policies to promote choice and quality in housing, having regard to health and other benefits."
(p. 28)

The figure for home ownership for the 1981 census is 55.7% nationally, with a similar figure of 57.4% for the West Midlands. The figures in the census are now ten years old, and during that decade there was a tremendous push to promote home ownership and a steady decline in local authority building.

Marital Relationships

At a subjective level health professionals and society as a whole view a 'happy stable relationship' as an integral part of a persons well-being. These assumptions are probably drawn from the negative behaviour and responses that result from a relationship breaking down. In reality it is difficult to know which comes first, health problems which result in separation and/or divorce or separation and/or divorce causing ill-health. Sims (1992) poses the question:

"Which has the greater adverse effect on health - the emotional effects of the breakdown in relationships or the socio-economic consequences of the changed legal status?" (p. 457)

There is considerable evidence in the literature that there is a strong causal relationship between divorce and premature death (Coombs, 1991).

Some people could see leaving a poor relationship as a release, and their view may then be different. Subjectively one would feel that any breakdown in an intimate relationship would take a toll on the people involved in that relationship.

Transport

In the 1981 census, 39.5% of households in the UK did not have cars available to them. For the West Midlands the figure was 37.9% (OPCS, 1983). The past ten years could have brought about a change; this will be identified in the 1991 census when it is published. Changes could have occurred because of reducing prices of cars and also reduced availability of public transport. In the 1981 census it was identified that the highest proportion of the population without a car was in the West Midlands

Metropolitan County, 44.3%, with 31.0% in the remainder of the Region. The remainder of the region would cover areas of a more rural nature, with probably less freely available public transport.

Fiona Godlee (1992) in her article, "Transport: a public health issue", concentrates on the negative aspects of the motor car: traffic congestion, noise, road accidents and social equality. These are real world issues, which have a social cost. For some people, the ownership of a motor car can make a positive impact on their lives. People in rural areas where public transport is not readily available and local shops are no longer open are seriously disadvantaged by not having a car.

Sleep

Sleep is rarely mentioned in the health literature in relation to health. There is no specific mention of the topic in Cartwright's book, Health Surveys (1983), nor in Smith and Jacobson's book, The Nation's Health (1988). Blaxter does mention sleep but then discounts it:

"the association of current health and current sleeping habits is so strong that the use of sleeping habits as another 'voluntary behaviour' (in a survey of one moment of time) does not appear to be justified" (Blaxter, 1990, p. 127),

the assumption being that there is already a strongly associated link. A look through the indexes of books on health would not reveal sleep as a listed category (Currier & Stacey, 1986; Seedhouse, 1986; Townsend & Davidson, 1982; McDowell & Newell 1987). In McDowell and Newell's Measuring Health, of the measures and scales included, the following include references to sleep:

1. Functional disability and handicap
No Mention
2. Psychological well-being
 - a. Health opinion survey
 - b. The twenty two item screening score of psychiatric symptoms
 - c. The general well-being schedule
 - d. The general health questionnaire
3. Social Health
No mention

4. Quality of life and life satisfaction

- a. The Philadelphia geriatric centre morale scale

5. Pain measurement

- a. The Oswestry low back pain disability questionnaire
- b. The McGill Pain Questionnaire
- c. The Pain and distress scale
- d. The illness behaviour questionnaire

6. General Health Measurement

- a. The Nottingham Health Profile

All these scales and measures contain questions or statements which elicit information about an individual's sleep.

Hyypa (1991) suggests that when considering strategies of sleep, promotion and counselling need to be substantiated with scientific data rather than subjective and cultural approaches. There are suggestions that good sleepers seem to demonstrate qualities and attributes consistent with good or positive mental health.

Berrios and Shapiro (1993) feel that:

"About a third of people who go to see their general practitioners about two thirds of those who see psychiatrists complain that they are dissatisfied with the restorative quality of their sleep.. Despite the size of these groups and the advances made by research workers, practical knowledge about the diagnosis and management of sleep related complaints is limited." (p. 843)

Berrios and Shapiro feel that medical schools provided inadequate teaching about sleep disorders, and that many doctors hold the same beliefs about sleep disorders as their patients. These are often unsubstantiated and are thought to be secondary to some other condition or event. They feel that patients often blame recently developed fatigue, depression, irritability, tension, sleepiness, lack of concentration, drowsiness or muscular aches on the quality of their sleep. Sleep therefore is seen as important to individuals, but probably only as an indication of something else.

In a study by Jacquinet-Salord, et. al. (1992), on sleeping tablet consumption, self reported quality of sleep, and working conditions, the following conclusions were drawn:

"A high prevalence of self reported sleep problems and related drug consumption was observed. Physical working conditions were not related to the quality of sleep in contrast to perceived job conditions. The results suggest that sleep quality might be a useful health indicator for the occupational physician." (p. 64)

This study was undertaken in 2769 small to medium sized firms in the Paris area. The study found no association between working conditions and sleep disturbances and drug consumption. The study was a large one, with a random sample of 7629 employees, 61% men and 39% women. People assessed their own quality of sleep; 16% of men and 26% of women said that they had sleep disturbances. One of the main reasons that people in this study took sleeping tablets was because of 'bad atmosphere at work'.

Measurement of Health

With improvements in health technology, care and cure, health has become an even more valued and value laden concept. One way of clarifying the definition of health is to take measurements of it. Hunt, et. al. (1986) indicate two elements of data collection necessary for measuring overall improvement in the nations health; a detailed and accurate description of the population and a measure of health or disease. The need to collect and analyse information and statistics on 'health' are well established in the public health systems and the pioneering work was started by such people as Edwin Chadwick (Southgate, 1965) and Florence Nightingale.

One way of measuring health in society is by means of epidemiological methods.

Epidemiology is:

"science concerned with morbidity and mortality; it studies the distribution of states of health and disease in the community as well as the distribution of health-related events and their determinants"
(Karvonen, 1986, p. 1).

When applied to occupational health, epidemiology is used to describe the health status of specific working groups, to study their morbidity in relation to the particular type of occupation they follow. This is used to identify occupational hazards specific to these groups, to evaluate cause and effect relationships and to evaluate interventions (Jardel,

1986). Epidemiology considers the lack of health of people in groups or communities. This allows for generalisations to be made but not for individual and specific norms to be developed. The collection of social information in tandem with epidemiological information has provided a backdrop against which to set decision-making in relation to health provision. Townsend (1979) took as his central theme poverty and deprivation, and using these concepts analysed the prevalence and consequences on society. Poverty and its consequences are not static, just as society is not static, and although there can be targeting of some groups who it would be thought are experiencing poverty, other groups may be included at particular times; for example, low income groups, people who are in work but earning insufficient to keep themselves in a 'health state'.

Perhaps the first recognised systematic collection of information on society was that collected by William the Conqueror for the Do'mesday Book. This book was:

"a Record of Grand Inquisition of lands of England, their extent, value, ownership, and liabilities, made by order of William the Conqueror in 1086" (The Oxford Illustrated Dictionary, 1980, p. 250).

Compared to that collection, the current collections of information are incredible, in terms of the breadth and range. The original enquiry was to assess the value of the main resource of that time, namely the land, to assess for William what he had won in battle. Nine hundred years later enquiries are still being conducted on a national basis. The information collected is far more detailed and more specifically directed at individuals and their place in society. In addition to the census information which is collected on a ten yearly basis, there are regular collections of information on a regional and national basis by organisations such as the OPCS. The census itself derives from Roman times when magistrates of the city compiled a list of citizens and supervised their public moral. The information collected now is not used in a censorial way, but rather to aid planning and decision making.

A degree of sophistication in collecting information can be demonstrated in the wealth of literature available on measuring health, some of which is explored in this text. Major reasons for developing measures of health are the allocation of resources,

planning of services, financing of services, the economic provision of health within the constraint of a national budget with many demands made upon it, and the evaluation of that service. Harö (1979) identifies that measures for levels of health are a problem for health administrators and then quotes two WHO expert committee comments which illustrate this point:

"nothing could be more valuable than to have at his command one or more measuring rods to help him in his task and also in assessing his specific problems relating to the health of the people, in designing his plans to deal with these, in guiding his administration and in evaluating his schemes" (WHO, 1950 in Harö, 1979, p. 17),

and

"there is no agreement on units of measurement and weighting factors to be applied when combining various states of health for which specification is a problem in itself" (WHO, 1950 in Harö, 1979, p. 17).

These two statements highlight the problem that is still facing society, deciding on an equitable measure. Harö feels that any determinant or measure should serve a definable purpose, and for the basis of his work produces the following guidance:

"conclusions made by comparing observations with something that can serve as a standard" (p. 17).

The interesting element in this quote is the last word, "standard". This begs the question of whose standard? How often can an observation be exact? Who is demonstrating the application of the standard? In strict health planning terms, which is what Harö is discussing, the concept could be applied to some extent, however, it is important to also have soft or less exact measures. These measures could include people's thoughts and feelings on issues.

Goldsmith (1972) reviewed the then current state of the art of health status indicators (HSI) in the U.S.A. The questions he sought to address in his review were:

- What is health;
- What are the purposes of health status indicators;
- What are the problems of developing adequate measures of health;
- What is the present state of the art in measuring health status;
- Are any of the new and developing health status indicators practicable;
- What is the outlook for health status indicators.

Goldsmith then uses Bickner's (1970) work in questioning the value of health status indicators, identifying that they mean different things to different people. In terms of public information sets, HSI provide readily understood information and a consumer price index of health. For administrators, HSI are used for health planning, decision-making and rationing; and for medical science they provide a basis for research.

Goldsmith identifies the problems associated with developing an index for health as:

- defining health;
- classifying the purpose of HSI;
- validation of HSI;
- data sources; and
- costs.

The complexities of the issue are clearly defined and are echoed by other writers (Harö, 1979; Fenton Lewis, et. al., 1982). Harö gives a definition of a health level indices which is:

"summarized measurements that can be used to classify population groups on the basis of their health situation" (Harö, 1979, p. 17).

This definition would be helpful if health or ill-health occurrences were a single factor phenomenon. They are not, and this is the theme which Fenton Lewis, et. al. (1982) goes on to develop. Whilst acknowledging that

"we need objective measurements if we are to fulfil accountability for the proper use of public funds" (p. 3),

they do raise the issue of the multi-factorial nature of health. They suggest that indicators need to be chosen in order to meet a specific objective, and identify a two stage classification process:

Stage (1) - The resources form the input that produces the planned activity. The ratio of activity to input gives the unit cost and this may be used for comparisons of relative efficiency *provided the activities being measured are known to be identical in quality* - i.e. they confer a similar benefit upon the patient.

Stage (2) - The activity must be known to produce the output predicted. The ratio of output to activity is often difficult to quantify but can reveal whether the activities involved in stage (1) are qualitatively identical or not" (Fenton Lewis, et. al., 1979, p. 3).

Therefore, Fenton Lewis, et. al. base their model on input measures --> activity measures --> output or outcome measures.

Input measures, therefore, will indicate available and allocated resources; activity measure will relate to treatments or care given; and output or outcome measures could be seen as:

"the total change seen (in the individual patient or in the population) that appears to have some causal relation to the activity but where the extent of it is unknown or at best only partial" (p. 4).

An output indicator will give information on the quality of care, whereas there is a difficulty with outcome measures in that it will be difficult to know what proportion of the change is attributable to health measures. Another example would be the avoidance of death from lead poisoning. An example of an outcome measure would be relief of dermatitis; people in the workplace can work towards the relief of dermatitis, but it may be a range of events or effects which will improve or worsen it. Outcome measures need to reflect patients and clients perceptions as well as health professionals. Jones (1992) quotes Florence Nightingales criteria for success, i.e. 'relieved', 'not relieved', 'dead', as an indicator of how far we have come, and also how we need to keep moving in developing a macro perspective which is a result of all players being involved in decision-making.

Fenton Lewis, et. al. (1982) are quite right to raise the complexity and diversity of health as an outcome measure. It is unfortunate that a major outcome measure in the NHS is a 'finished consultant episode'; this is when the consultant discharges a patient. This pre-supposes that all NHS interventions are focused around consultants. This also raises the issue of activity or process of achieving the consultant episode, who is involved, what resources were used, did the outcome meet the variety of objectives from different professional groups who must have been involved in the process.

There are no short and safe answers to this issue; there is a need to continue exploring the issues, to debate in as wide an arena as possible the concepts and ideas underpinning the notion of health as a measure of outcome.

There are a variety of publications which review health surveys (Cartwright, 1983), explore health status measurements from an economical perspective (Holland, 1985), or review the rating scales and questionnaires used in measuring health (McDowell & Newell, 1987; Bowling, 1991). Other publications describe the 'how' of conducting such activities (Streiner & Norman, 1989; Cartwright & Seale, 1990). Yet others describe in detail a single indicator (Hunt, McEwan & McKenna, 1986), and others describe in detail the results of health surveys (Blaxter, 1990). From this can be seen the range and depth of debate and interest surrounding this area of study and exploration. The issue of an individual's response to ill-health or lack of wellness carries with it the possibility of being able to do something useful and constructive for people when their health fails.

The emergence of interest in this area of research must have its basis in supply and demand and value for money. The degree of sophistication in the provision of health services must support the degree of interest in measurement of health and/or ill-health. This interest must have been triggered by the international focus on health which has been actively developing since the Alma Ata Conference in 1978. The apparent ease with which some conditions are dealt with now must raise questions about the conditions to which there are no easy solutions, nor long term answers.

Ill-Health / Illness

Although Seedhouse (1986) feels it is not sufficient to go to dictionaries to explore words when addressing an issue as complex as health, it is a useful starting place. The dictionary definition must play some part in concept formation. The dictionary definition of illness is:

"Unpleasantness, troublesome, noxiousness, badness. Bad or unhealthy condition of the body; the condition of being ill; disease, ailment, sickness" (The Shorter Oxford English Dictionary 1983, p. 873).

The language used is negative and the words used do not create an impression of hope. A person reading such a definition would gather that to be ill is not a 'good' thing and something to be avoided. Robinson (1983) described this as a negative

model of health. She goes on to explore the relationship between doctors, health institutions and people in society within this model, highlighting the complex relationship between feeling ill and health professionals view of that illness. There are difficulties in 'developing illness' before it becomes a frank illness and therefore worthy of a label and treatment, and the problems that arise when a person still feels ill but health professionals can not find anything 'wrong'. Morse and Johnson (1991A) are trying, through a qualitative method approach, using grounded theory, to develop a model of illness. They argue that until there is more comprehensive understanding of the illness model, health providers will not address illness in an individual, only aspects of that individuals illness. They suggest that component parts of such a model would:

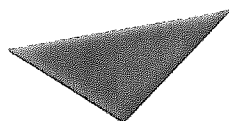
- "1) incorporate the entire duration of the illness experience, beginning with the onset of symptoms,
- 2) allow for the expression of the dynamic nature of illness,
- 3) be based on the patient's perception,
- 4) identify the similarities that arise from illness, rather than the underlying disease,
- 5) incorporate the entire context of the illness into the model, and
- 6) be developed inductively without implying or imposing a previously developed model" (Morse & Johnson, 1991A, p. 2-3).

This is taking the individual with their feelings and experience and working in partnership with them to try to resolve what is making them feel ill. The research method under-pinning these ideas is that of grounded theory. Grounded theory has its origins in ethnography and symbolic interactionism. The methods used are interview methods, participant observation, use of patient records, phenomenology, analysis of language, and narrative and biographical research. This method is helpful in that it provides a way for perceptions of illness to be researched in a meaningful way. Quantitative methods in relation to illness are morbidity and mortality statistics.

Grounded theory interviews start with an open-ended question, for example: "Tell me about ..." This allows the researcher to collect quite unique and special information

from people. This interview would then be transcribed, analysed and coded using the individuals words to code the work. From this, concepts and themes are identified. This is a simplification of a very demanding research method which is described in greater detail in Morse & Johnson (1991A); the initiators of the method are Glaser and Strauss (1967).

As a result of their research, Morse and Johnson (1991A) have developed an illness-constellation model. In this model, illness is seen "as an experience that affects the sick person *and* his or her significant others" (p. 317). The model is described in four stages:



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(Morse & Johnson, 1991B, p. 321)

This model was developed by synthesising the findings of five studies, eliciting the commonalities of each stage and comparing the main characteristics of each of the models. The five studies included; a study of the process of adjustment following a

heart attack (Johnson, 1991, p. 13-88); the experiences of women having a hysterectomy (Chasse, 1991, p. 89-139); people leaving a psychiatric hospital (Lorencz, 1991, p. 140-200); mothers' involvement in their adolescent daughters' abortions (Norris, 1991, p. 201-236); and the experience of husbands during the time their wives were receiving chemotherapy (Wilson, 1991, p. 237-314).

Anyone who has experienced illness or has had a person who is close to them feeling ill will be able to relate to the experience of the 'self' in this model as well as the 'others'. This knowledge has been part of individuals stores of personal experience, it needs to move now to become a framework of thinking when health care professionals are caring for ill people and their significant others. An understanding of this model should not only improve care, but should allow for more research to be directed to this aspect of care. Similar work was carried out by Cowie (1976) on a group of people who had heart attacks, working from critical incident through to convalescence. However, this article was not intended to explore in detail a model for illness; it was more directed at when people perceived themselves as ill and the re-adjustment to that decision. Central to that concept was utilisation of medical services.

Morse and Johnson (1991A) feel strongly that theories of illness must be developed from "the patient's perspective rather than from the perspective of the health care provider, social worker, or significant others" (p. 3). It is important to understand how that person feels and thinks in relation to what is happening to him, how he puts that into context of his life, his experiences and his future aspirations.

The usefulness of the illness-constellation model is that it views the individual and his experience of illness together with his significant other. It is very rare for a person not to have a significant other at all, and the work that has to be done during illness is a partnership between the person who is ill, their significant other and the health care provider. This model allows for those relationships to be explored and new thinking to emerge.

Illness and Personal Responsibility

It was quite fashionable in the 1970's to blame people for becoming ill, the move was to get people to take responsibility for their own health. This was the focus behind the then Governments consultative document "Prevention and health: everybody's business" (HMSO, 1976). This publication did not highlight the workplace as a possible focus for preventive activities which would reduce illness; neither does the recent Government publication, The Health of the Nation (HMSO, 1992).

Illness can be seen by some people as something outside their control; this is described in the literature as 'locus of control' (Niven, 1989). Niven describes the work of Rotter (1954) who developed a series of statements which indicated whether a person had an internal or external locus of control. People with an external locus of control feel that they are not in charge of their fate and that outside forces such as luck or destiny can effect their health and life events. People with an internal locus of control are more likely to feel they have the ability to influence and determine events. This model could also have an effect on the people experiencing illness as described by Morse and Johnson (1991A). If the 'self' did not see themselves as having any responsibility or control in this situation of illness, then the process at stage 2 of relinquishing control and distancing oneself could be major threats to a person regaining health.

The health locus of control model was somewhat overtaken by the health belief model (Janz & Becker, 1984). However, research using this model has shown that it is not a good predictor of behaviour (Calnan, 1988). Calnan used a development of the health locus of control model which focuses on multidimensional health locus of control. The model consisted of three dimensions of belief about the source of control of health: internal, powerful other and chance. High internal scores relate to individual behaviour, while high scores on the other two dimensions relate to lack of personal control. Calnan looked at three aspects of behaviour: cigarette smoking, drinking

alcohol and levels of physical exercise. The level of relationship identified was, in Calnan's words, "never more than modest" (p. 326). One result was more positive:

"The strongest relationship, however, was between smoking and alcohol: smokers were more likely also to drink. People with high levels of exercise were also more likely to be drinkers but were less likely to smoke." (Calnan, 1988, p. 326)

Exercise was the one form of behaviour which was most consistently associated with individuals beliefs about the locus of control in health. The author feels that beliefs about control over health may be related more directly to certain age groups or social classes, but also that age, gender and education may be confounding the relationships between beliefs and behaviour.

Pill and Stott (1982) addressed the issue of responsibility in relation to ill-health and illness. They found that educational experience and home ownership were significant factors in whether working class mothers endorsed their part in being responsible for theirs and their family's ill-health. Mothers who had a longer education and were buying their own homes were less likely to accept the 'germ theory' as the basis for ill-health, but to take on board the multi-factoral nature of the process, and accept some responsibility for maintaining their families health.

There emerged from these recorded discussions various themes as a basis for illness causation; these were:

Mention of germs	178 (60%)
Mention of life-style	118 (40%)
Mention of heredity	101 (34%)
Mention of stress	59 (20%)
Mention of environment	46 (15%)
Mention of individual susceptibility	36 (12%)

(page 45)

The germ theory was most popular, and this would link in with people perceiving that they had little control over such factors and that the locus of control was external to them, and not their fault or responsibility.

Long Term Illness

Chronic illness, or long term illness, is probably another aspect of illness which needs to be considered separately from the one off illness episode. The concept of the sick role described by Parson (1951) would not fit this long term relationship with ill-health. Where there is long term ill-health in an individual, the effect is not temporary, and the incapacity for the performance of roles is partial rather than total. The coping strategy may be one of adjustment (Radley & Green, 1987), adaptation (Dubos, 1968), or exploration of optimising potential (Seedhouse, 1986).

"Illness can be described as an adjustment within the spheres of bodily and social experience, subject to culturally shared beliefs and expectations." (Radley & Green, 1987, p.180)

What is meant by illness has been described by Cassell (1978) as something the patient feels when he goes to the doctor; however, disease is what he has on the way home from the Doctors surgery. Cassell feels that disease is something an organ has; illness is something a man has.

"Disease is a medical conception of pathological abnormality" ..
"Illness.... a person's subjective experience of ill health and is indicated by the person's feelings of pain, discomfort." (Field, 1979, p. 335)

Seedhouse (1986) sees approaches by medical science to increase health as having an emphasis on

"clinics, hospitals, biology, statistics, and measurement of conditions against normal standards...
The causes of disease and the effects of drugs and surgical techniques are researched to increase understanding and to allow preventive, curative, and educational measures." (p. 29)

It would seem that there is considerable emphasis on mechanistic devices. This model will probably be the foundation for health in the workplace; measuring the exposure of individuals to substances, measuring productivity. There is also the opportunity to put people at work into pre-determined categories, to assume a commonality of outcomes when the opposite may be the reality. If this approach is to be adopted in the

workplace then the norm for measurement should be the individual, not the group. Ewles and Simnett (1985) in their approaches to health education feel that the medical approach in this field would be aimed at "freedom from medically-defined disease and disability" (p. 30). They feel that the approach would be aimed at promoting medical intervention as a means of preventing ill-health, using a persuasive and authoritarian approach centred on immunisation and vaccination for children and other group specific approaches, specific screening clinics, targeted groups for messages and interventions. Illness and disease equal morbidity, and in some cases mortality. There are other labels which indicate a lack of health: impairment, disability, handicap (Butler and Vaile, 1984). When planning for health care provision it is usual to use mortality indicators; premature death, social class differences, occupational differences, regional differences, and preventable death. Health remains an abstract concept and personal to each individual, with strong cultural and social implications (Capra, 1982); not everyone will think of all the mortality indicators when thinking of or describing health, illness and or disease.

It is possible to have pathological abnormality and not feel ill and to feel ill without having pathological abnormality, but this is often discounted by health professionals who work to a medical model. The disease theory of illness is firmly fixed on our society and much of the work done in occupational health in the past has been based on it. This model or approach is not necessarily a bad thing, but what must be remembered is that in tandem to this essentially systematic and bureaucratic approach, another approach is necessary; one which allows for a more holistic view to be taken, for the individual and his diseased organs/systems (if present) to be viewed within his work and social context and with consideration being given to his perception of himself and the life he leads, to move from reductionism to collectivism, from the parts to the whole person.

Many people at work will seek a medical opinion to support their feelings of illness. Until fairly recently in order for a person to have time off work with illness, it was

necessary to have a doctor confirm that he agreed with the patient that he was ill and therefore unable to attend work. This was an important social role in that it removed the responsibility from the workman and made legitimate his absence (Field, 1976). This also increased the moral and authoritarian role of the doctor in society. In the past this role was continued in the workplace, whereby a medical practitioner was actively involved in the health aspects of employing and discharging employees. In the area of work surrounding medical fitness for work, i.e. medical examinations, returning to work following long term absence, the occupational health physician will examine the person, and give a medical opinion to the employer who will decide whether the employment of the person will continue or not. Where an organisation uses substances which require statutory medical examination, the occupational health physician will have the right to suspend employees on health grounds and neither the employer nor the employee must ignore that suspension, although there is an appeals mechanism. This makes the occupational health physician a powerful person in the organisation and perpetuates the authoritarian role of the doctor in society. This view of the doctor can become the 'norm' for people who work in this type of industry; they may not see themselves in partnership with their local doctor in looking after their health. The wrong messages could be conveyed.

Disease

Disease is more than illness, there are many causes of disease. Blaxter (1984) in her study of women's perceptions of disease argues that there are both lay and professional concepts of disease. The author feels that the explanation that lay people hold models of illness whilst medical professionals hold models of disease is not valid. Patients also have models of disease which are "part (though not the whole) of their concept of illness" (p. 35). Disease can be described as:

"To deprive of ease; to trouble, incommode",
"To bring into a morbid or unhealthy condition; to infect with disease",
"A condition of the body, or of some part or organ of the body, in which its functions are disturbed or deranged".

(The Shorter Oxford English Dictionary, 1983, p. 565)

There is a tendency to view a person as healthy if they have no disease, particularly if they are also at work; however, disease does not require illness to exist and it could be argued that a person could be healthy with disease. A person can have a disease, as described above, but in himself feel well. That is, he is not experiencing any feelings which would lead him to think himself ill. There are numerous examples in society of people who have a disease label attached to them who lead a 'normal' life, people who have epilepsy, diabetes, anaemia or the result of trauma. They perceive themselves as being healthy in that they function and exist in a way that is acceptable to them.

Society sometimes views people who have a disease label in a particular way. In the past women who became pregnant out of marriage were put into institutions; some of these women would spend the rest of their lives in institutions. Other people were given the label and treatment of a criminal. Until the Suicide Act 1961 was enacted, it was a criminal offence to attempt suicide. People who did attempt suicide and were resuscitated were nursed in isolation with a police officer sitting by their bed. Equally, there has been a slow acknowledgement that alcoholism is a disease. Many people with schizophrenia are as likely to find themselves in a prison cell as a hospital bed when they go into crisis. This is because their behaviour is disruptive; it may also be a behaviour which is repeated many times during a year. It may be difficult to get medical or social support for such people. Other people in society become frightened and worried by behaviour which to them is strange and threatening; their only recourse is to contact the police. The plight of people with schizophrenia has been well documented in the press, and there is an increased social awareness of the condition. The closure of large long stay hospitals for the mentally ill and handicapped has forced society to review its attitude to ill health and disease in society. Some conditions do not carry social stigma with them, these are usually physical conditions or handicaps; others which are mental or emotional do.

Not only does society have a particular view of some people with disease labels, so do professionals who are supposed to give care. In a paper by Jeffery (1984), he

describes how doctors working in casualty departments divide patients into 'good patients' and 'rubbish'. Good patients were described in terms of their medical characteristics: head injuries, cardiac arrests, stove-in-chest or road traffic accident.

The good patient allowed the doctor to:

"practice skills necessary for passing professional examinations...
practice their chosen speciality...or...
they tested the general competence and maturity of the staff" (p. 250).

When 'rubbish' was considered the following categories emerged: trivia, drunks, overdoses, tramps. Staff in the departments used the word 'normal' when referring to 'rubbish'. Jeffery feels that

"staff felt able to predict a whole range of features related not only to his medical condition but also to his past life, to his likely behaviour inside the casualty department, and to his future behaviour" (p. 251).

These staff are making social and medical judgements about individuals which may not in reality be correct. The behaviour characteristics of a diver suffering from the 'bends' could lead people to think he is drunk. If the man has also had a glass of beer since finishing work his 'label' could be firmly fixed as a 'normal drunk'; he is anything but normal, but his treatment could be delayed because of the professionals' perceptions. It is important that occupational health staff impress upon any employee the importance of sharing information with family and friends about work effects on health. Occupational health staff also have a responsibility for 'person' education into possible consequences of workplace activities; this could be looked at in the same light as patient education for specific conditions. If the 'problem' is likely to be local, then occupational health staff have a responsibility to ensure that local health providers receive information on the health consequences of work done. It is important that people who are disadvantaged by workplace activities are not stigmatised by health professionals.

Society makes judgements of people with disease and professional groups make judgements about people with disease. People with disease have a real problem! Goffman (1976) described such behaviour as stigmatising; things which other people

may find unpleasant set an individual apart. Once given such a label, it is difficult for an individual to redeem his place in society. Stigma is often associated with mental illness labelling.

"An individual who might have been received easily into ordinary social intercourse possesses a trait that can obtrude itself upon attention and turn those of us whom he meets away from him, breaking the claim that his other attributes have on us. He possesses a stigma, an undesired differentness from what we had anticipated....We believe the person with a stigma is not quite human. On this assumption we exercise varieties of discrimination, through which we effectively, if often unthinkingly, reduce his life chances. We construct a stigma - theory, an ideology to explain his inferiority....We tend to impute a wide range of imperfections on the basis of the original one....Further, we may perceive his defensive response to his situation as a direct expression of his defect...." (p. 345).

Reading (1977), in his article on illness and disease, drew up two lists, one representing illness, the other disease:

<u>Illness</u>	<u>Disease</u>
Experienced by patient	Apprehended by physician
Symptoms	Signs
Subjective	Objective
Unique	Replicable
Not directly verifiable	Consensual validation
Affects whole person	Affects discrete parts
Feeling unwell	Being unwell
Quality of life	Quantity of life
Compassionate	Dispassionate care
Cause of suffering	Cause of death

(p. 704)

These two lists highlight the different thinking associated with illness and disease. Illness seems to be more associated with lay perceptions and would easily be linked to Morse and Johnsons (1991B) illness-constellation model, where as disease is shown to be very much a medical model. These two views are cause for concern, if it is a true reflection of behaviour associated with labelling.

A person at work could be feeling ill, and being treated accordingly, would the behaviour change to that described in the disease column once a diagnosis or disease

label have been given to them? There is a need to test the assumptions in Reading's lists, to assess if there is such a black and white division, or rather more grey areas.

Reading feels that doctors mainly are more interested and focused on disease than illness, disease being more tangible and manageable. He argues for a more rounded view of the individual to be taken and for aspects of that persons life to be taken into account in caring both for their disease and illness. This would lead to a development of the medical model to incorporate the factors listed in the Illness column, which would of course require a re-thinking of education and training of health care professionals.

There are other perspectives of disease; Dubos (1968) argues that disease is a phase in a persons homeostatic relationship. When there is disturbance between man and his biological environment there is the potential for disease. This balance would also be important in other systems of providing care to people; traditional Chinese medicine and Ayurvedic medicine from the Indian sub-continent, for example. Both these forms of medicine are practised in the UK today and the people who seek out these practitioners are not necessarily only the Chinese, Indian and Pakistani communities.

The question of balance is important to consider when thinking of an individual and his disease. The process of adjustment and adaptation necessary when a person acquires a disease probably means that that person is very knowledgeable about themselves. They may know when things are going out of balance, when they need help and support. The concept of balance and equilibrium, of homeostasis, is a concept which most people could have sympathy with and could use to describe personal experiences.

Hanney (1979) also develops this theme of adaptation, bringing into the debate the notion of time, and the fact that neither health nor illness is a static event but rather a continual process. Hanney argues that in the health to ill-health dimension,

perspectives and criteria are important, but of equal importance is the level of analysis. This analysis could be biological, pathological and/or behavioural; the behavioural aspects becoming the adjustment toward adaptation (Hanney, 1979). Hanney's background as a doctor is apparent in his description of analysis - biological, pathological and/or behavioural - first comes the medical model, measure and test; behaviour comes last. Behaviour could be the dominant activity which is affecting the person's health. There may not be anything physical to measure. This can be seen in mental illness where people demonstrate obsessive behaviour, or where people are experiencing occupational stress and may be smoking and drinking to excess. Some people in jobs which are related to emergency services, such as fire services, may be experiencing post-traumatic stress. Whilst there may be physiological, mental and personality symptoms, not all need to be present (McCloy, 1992). In addition to the trauma suffered by employees in stressful jobs is the organisational code which can put even more pressure onto employees,

"One of the biggest problems is that stress is still thought of as a weakness. Rescue personnel are often reluctant to admit to symptoms in case colleagues think that they are 'softies'." (p. 163)

This phenomenon is also described by Duckworth (1991) in his paper on managing psychological trauma in the police service.

Ilich (1976) argues very strongly that the medicalisation of ill-health is instituted in industrial society as a measure of control. Control in occupational health is seen as a way of protecting the individual from the harm of the workplace. Not to have control measures could result in many more people suffering from occupational disease and injury. There have been examples in the U.S.A. where this control has infringed the civil liberties of workers. An example would be where women who were working on a lead process were told that unless they had a sterilisation operation which would prevent them becoming pregnant, they could no longer do that job (Ellicott, 1990). As part of that medical control there has developed social systems, a unique controlling language, a dominance of bureaucracy, a denial of normality and worse diseases and conditions actually produced by the very measures intended to help and relieve

iatrogenesis. Illich argues for people and society to be given more control for themselves to free themselves from the control of medicine and its negative aspects of treatment, and gives as an example the medicalisation of midwifery. This is a common argument, and there is a basis to the argument for removing or controlling some of the medical processes which have become routine practice. However, if the removal of those practices resulted in a return to the level of maternal and perinatal mortality of just twenty years ago, it would not be acceptable (Smith & Jacobson, 1988).

What is needed is a balance, a partnership between the people being cared for and the people who are caring for them. In occupational health terms some controls are instituted to safeguard individuals, some biological measurements are taken to ensure body burdens of substances are not exceeded. This is a difficult area in that knowledge and understanding of the effects of substances on the body is always advancing and controls become greater in that levels of exposure become lower. There are aspects of disease in an individual which can only be assessed through behaviour; such an example would be alcoholism. Control would need to be exercised if a person through drinking became a danger to himself or to others in the work place. The argument must be around the level of control, the underlying principles, whether the control is for individual good or as a means of containment or restriction. In different societies, in different times, this could be viewed in different ways.

Seedhouse (1986), in his search to answer the questions, 'What is health?' and 'How can more health be achieved?', explores the literature on illness and disease. He quotes definitions from many authors and identifies the following as having some common understanding:

"Disease is the aggregate of those conditions which judged by the prevailing culture, are deemed painful and disabling, and which at the same time, deviate from either the statistical norm or from some idealised status." (King, 1954, p. 197, cited in Seedhouse, 1986)

This definition incorporates notions of illness as well as disease. This duality confuses the issue and serves to illustrate the difficulty of seeking clarity in this area of thinking. Yet, if people are to be helped and cared for, that understanding is important and should be fundamental in health care thinking, planning and service provision. Seedhouse's desire to find 'more health' is an interesting use of words. It could be argued that as a society in the UK, we have achieved more health than we had 100 years ago. We have healthier children who grow to adulthood, we have people living to great ages. Some health providers would argue that we do not need 'more health' because we could not provide services to meet expectations of people. Perhaps 'more health' means finding a means of preventing the wear and tear degeneration of the human body. Is more health less disease?

Dingwall (1979) also divided disease into two distinct theoretical systems: a) biological and b) behavioural. Biological events are those of class, appendicitis, measles, hypertension; for these events information can be made available, x-rays can be taken, blood sugar levels estimated, there are a range of direct biological measures. The biological model is very closely associated with Western science. There may be a lack of information on a person's feelings, and the whole process would be seen as more mechanistic. There is a move towards developing norms for physical function, this can create difficulties because of individual differences. This system would be more useful if we in the West sought to develop a norm for each individual. The biological systems approach that is described would seem to link very positively with the medical model of disease. Because of the various and many differences in life style between people, the need for individuality is crucial. Dingwall poses the difficulty of asking 'Do you feel overtired?' to people from different occupational groups and questions if the question will mean the same to them all.

The second approach, that of disease as behavioural discontinuity, is not a prime focus in health care. There are norms for behaviour which are socially constructed, and deviation from those norms indicates a behavioural disease. This has implications for

the whole area of mental health and well-being. This idea has been explored earlier in this section. It is important to appreciate that people will observe behaviour in others and make judgements on that basis. If the behaviour is not one which is expected then there is a need to explain this, to give it some form of rationality. If this cannot be done, one way of managing it within society is to give the behaviour a disease label. This might give it a measure of respectability in that the individual perhaps is not responsible, they have a disease. Could this be what is happening in describing post-traumatic syndrome?

Concepts of Work and Health

For centuries it has been acknowledged that work can have an effect on health, both positively and negatively. The positive effects include social position, active occupation, freedom from poverty and utilisation of knowledge and skills. An ability to contribute to a community is often seen by some people as a justifiable basis for working. Working is and has been an acceptable aspect of our culture. It may be necessary to re-think this strongly held belief in the future. There may not be sufficient traditional work for everyone, and as long as society holds the view that people should contribute to society by work, there is conflict.

Watson (1987) sees work as:

"Carrying out of tasks which enable people to make a living within the environment in which they find themselves" (p. 83).

When considering the history of work in society it is important to remember time and context. The Greeks and Romans had slaves to do their work, the Hebrews felt that they gained spiritual dignity through their work. The early Christians felt that work made one healthy, it was a useful diversion from sinful thoughts and habits. It was also seen as a penance for the fall from original grace. The Protestant Christians who followed the teaching of Luther, saw work as a way of serving God.

The early social scientists developed theories on the place and effect of work in society. These views were based on individual values and beliefs and would explore aspects of that individual's culture, experience and exposure (Haralambos & Heald, 1980). The same could be said of each individual in society; their views of work and leisure are personal, idiosyncratic and value laden. Questions are being raised about the whole notion of existing work patterns and the concept of work (Handy, 1989). This change in thinking is related to the changing employment market and the emergence of technology and its effect on the labour force. Handy raises the notion of wage work, fee work, gift work and study work. This is a difficult transition for many people who have been raised on the Protestant work ethic to make, and requires a different way of thinking. A person may not be paid for some of this work; that is not usually why people do work. It may mean that people will need to be paid more for the smaller proportion of formal, i.e. wage work that they do. The State will have difficulty in supporting its infrastructure if the taxation base falls through people not earning sufficient to keep themselves to a reasonable standard.

The social evils associated with some occupations have been graphically described in novels through the ages. The Victorian novelists, particularly, used their books to describe the ills of their times:

"'Fluff,' repeated Bessy, 'Little bits as fly off fro' the cotton, when they're carding it, and fill the air till it looks all fine white dust. They say it winds round the lungs, and tightens them up. Anyhow, there's many a one as works in a carding-room, that falls into a waste, coughing and spitting blood, because they're just poisoned by the fluff.'" (Gaskell, 1854-5, p. 146)

This is an account by Bessy dying of byssinosis, a lung disease of cotton workers, describing working conditions to Margaret, a girl from the South, in Elizabeth Gaskell's novel, North and South (1970). The prevailing culture was to get every ounce of effort from employees.

Improvements in the current working environment are incredible compared to conditions of even 20-30 years ago. This can be seen in the reduction found in

traditional areas of occupational disease, e.g. asbestos-related lung cancer and mesothelioma and bladder cancer caused by aromatic amines which are used in the manufacture of rubber and dyestuffs (Smith & Jacobson, 1988). Knowledge and understanding of the effects of working conditions and working environments have improved considerably. Some of this improvement has been brought about by the nationalisation of major industries and the removing of control from employees whose major concern was profit; an example of this would be the mining industry. Together with this was the development of a legislative framework which aided regulation, and of course a more general awareness of the morality of exposing people to experiences and conditions which could be harmful. One aspect of this development has been the move by major organisations to move some of their more dangerous undertakings to the third world. An example of this would be the chemical works in Bophal in India. This became news when an explosion occurred and many people were poisoned and much damage done to surrounding land.

It would be difficult to indicate one particular feature which brought about the change in attitude which facilitated improvements. One major feature was the poor physical state of men being recruited into the army to fight the Boers in South Africa and the Germans in Europe. Many were unequal to the task, being undernourished and some damaged by life and work. The problem was partly poor living and working conditions and partly poor diet and prevailing social attitudes.

Some of the views held in the UK about the value of work to individuals is based on these prevailing attitudes. Some people in the workplace still hold outmoded and old fashioned ideas about people in employment, which are based on a strong master/servant relationship.

Work can affect people in many ways. Harm can be done to people by the work that they do,

"One particularly striking way in which an individual's social background can (*cause*) disease and death is through the effects of working in a particular occupation." (Tuckett, 1976, p. 110)

Other people are affected by a combination of factors, their work exposure to substances which can cause ill-health or disease, such as lead, asbestos, noise and alcohol, together with work practices such as shift working and job stress. Over and above this is the possibility of personal and social demands which could become stressors.

A longitudinal study of the causes of death of 17,530 civil servants was conducted over a ten year period by Marmot, Shipley and Rose (1984). The aim of the study was to explore social class differences in mortality in a group of men aged 40-64 years. The men were classified according to occupational grade, i.e. administrative, professional, executive, clerical and 'other'. The men all had an initial screening examination between 1967 and 1969. This examination included the London School of Hygiene Cardiovascular Questionnaire (this questionnaire is not discussed in the article) and questions on smoking history, respiratory systems, medical treatment and leisure-time activities. There was also a physical examination which included electrocardiograms, estimation of blood pressure, plasma cholesterol, post-load blood glucose, skin fold thickness, height and weight ratios. The individuals' NHS records were identified and a copy of death certificates obtained for those men who had died within the UK following this examination.

The results identified that the lower the employment grade, the higher was the mortality for Coronary Heart Disease (CHD). The researchers found a 3-fold difference between lowest and highest employment grades in the civil service; this was in the same direction as national differences, but much greater. The men included in the study were all in stable, sedentary jobs in London and not exposed to industrial hazards. It was found that smoking was more common in the lower grades, and this is now firmly linked to CHD (HEA, 1991; Doll & Peto, 1981; Smith & Jacobsen, 1988). Marmot, et. al. (1984) went on to speculate that social class and early life effects, housing, diet, father's occupation, were an important consideration. This

view has since been substantiated by the work of Barker (1993) who has explored "the foetal and infant origins of inequalities in health in Britain". Barker found a north/south divide, and that this was related to diet and social class.

A second study of 10,314 civil servants by Marmot, et. al. (1991), (6900 men and 3,414 women aged between 35-55 during 1985 to 1988), found similar patterns to the earlier study in relation to social class and morbidity. The researchers found that perceptions of health status and symptoms were worse in people who held lower status jobs. They concluded that there needed to be an encouragement of healthy behaviours across society, and more attention needed to be paid to social environments, job design and the consequences of income inequality.

Webb and Schilling (1988) found that the development of health and safety policy and the provision of health services in the workplace was most likely to occur in the public sector rather than the private sector. When these authors surveyed priorities amongst both employers and trade unionists for health issues in the workplace, the highest priority was given to: noise, safety, dusts, muscular and chemical hazards, alcohol, smoking, stress and nutrition. No priority was given to contraception, sexually transmitted disease or personal development.

This is interesting in that the first five priorities in the high priority group could be seen as traditional occupational health issues, issues which an employer should control and for which an individual could receive benefit for if damage through work exposure is confirmed. Alcohol could be seen as picking up on a social issue, if we did not have a large employment sector manufacturing and retailing alcohol. Alcohol has come under quite severe control in the workplace, and alcoholism is treated as a disease by most enlightened organisations who will have a policy for dealing with people who have a drink problem.

The Health of the Nation Applied to the Workplace

The Health of the Nation targets (see Appendix 3) of reduction in the incidence of coronary heart disease and stroke, cancers, mental illness, HIV/AIDS and sexual health, and accidents, could very well be targeted at the workplace. There would be a captive audience of men and women who could be influenced by health promotional and educational activities.

In some industries there could be a very specific action which would target not only exposure to substances which are thought to cause ill-health, such as the study of exposure of viscose rayon workers to carbon-disulphide in Finland (Sweetman & Taylor, et.al., 1987). The study showed that these exposed workers were five times more likely to die of heart disease than non-exposed workers. In other work places attention to the provision of food and snacks which are nutritionally sound and access to exercise facilities would be positive ways to help people in the community work towards reducing heart disease.

Some cancers are occupationally induced; asbestos workers, rubber workers, people who are exposed to bright sunshine for long periods. The control and containment of substances and activities in the work place could contribute to achieving this overall target.

Mental illness has many causes, and who knows what would be the final trigger that pushed a person out of their equilibrium and into mental illness. It could be that occupational stress is the cause: poor working conditions, inflexible working hours, authoritarian management styles, or production methods which are machine driven, such as assembly lines. A consideration of work place activities by such people as members of the primary health care team could help people who are in crisis.

The whole area of HIV/AIDS has implications for the health care industry, the law enforcement services and the prison service. These people are at the forefront of

exposure by virtue of their occupational roles. Although accidental exposure and contamination is not a major threat to these occupational groups, they, through their roles, have an opportunity to educate others and demonstrate 'good practice'. This good practice could relate to the wearing of protective clothing when handling any blood products, disposing of equipment efficiently and effectively, and communicating the process to the person they are dealing with together with a rationale.

A reduction in accidents in any society is to be welcomed. It would seem from the published targets that the reduction of accidents in the 25 - 64 year age groups is not to be a priority for the NHS; this can only mean that it remains a responsibility of the Department of Employment. This could mean that the NHS will be able to ignore this age group when producing policy, defining contracts for health care, or assessing the needs of a community.

Workplace Health as Part of Primary Health Care

At a meeting in Turku, Finland in 1985, a group of WHO representatives addressed the issue of 'Occupational Health - as a component of Primary Health Care' (WHO, 1986B). The tasks given to the group were:

- to define the relationship between primary health care and occupational health;
- review the organisational patterns of workers' health care and the methods for evaluation of different models;
- study ways of co-ordinating occupational health and primary health care services;
- assess the methods for economic evaluation of worker's health care." (p. 1)

This group saw that workers health could be organised in several ways:

"1. Community or private primary health care services provide diagnosis and treatment for general ill health; community-based occupational health units (governmental, supported by trade unions or voluntary funds or social security funds, or commercial) provide preventive OH services (environmental and medical).

2. Community-based primary health services provide care for general ill health; the medical part of preventive OH service (preventive health examinations) is provided by community-based OH units, while the environmental part is workplace-based.
3. Community-based primary health services provide care for general ill-health, while complete preventive OH activities (both environmental and medical) are workplace-based.
4. Total workers' health service (primary health care component and entire preventive OH component is workplace-based." (p. 9)

Where occupational health services exist in the UK they tend to follow model 3; some organisations would also include emergency or initial care for general ill-health. There is a general rule that employees will not be treated for a general ill-health condition for longer than three days without referral to that persons' general practitioner.

The present system in the UK can have two major disadvantages for the people at work. The occupational health staff will have expert knowledge on the workplace, it's activities and environmental hazards, but may have limited understanding and knowledge of individuals, social domestic and familial issues. Equally the primary health care team may have expert knowledge on the individual, their family and social and domestic arrangement, but no knowledge and understanding of the work activity and possible exposures of the individual. The lack of duality of care disadvantages people at work.

The HSE have recently produced two documents, one is for family doctors, (HSE, undated) with the title "Your patient and their work". The booklet contains an overview of the main issues in the work/health relationship. It contains information on literature and how to contact people who would have specialist or additional knowledge. The second is a leaflet called "Your work and your health: What your doctor needs to know" (HSE, 1992), and gives an indication of what an employee should tell his/her doctor about working conditions, an employees rights and responsibilities and where to get additional advice and information. Both these

publications are timely and relevant and should assist doctors and people at work in caring for health.

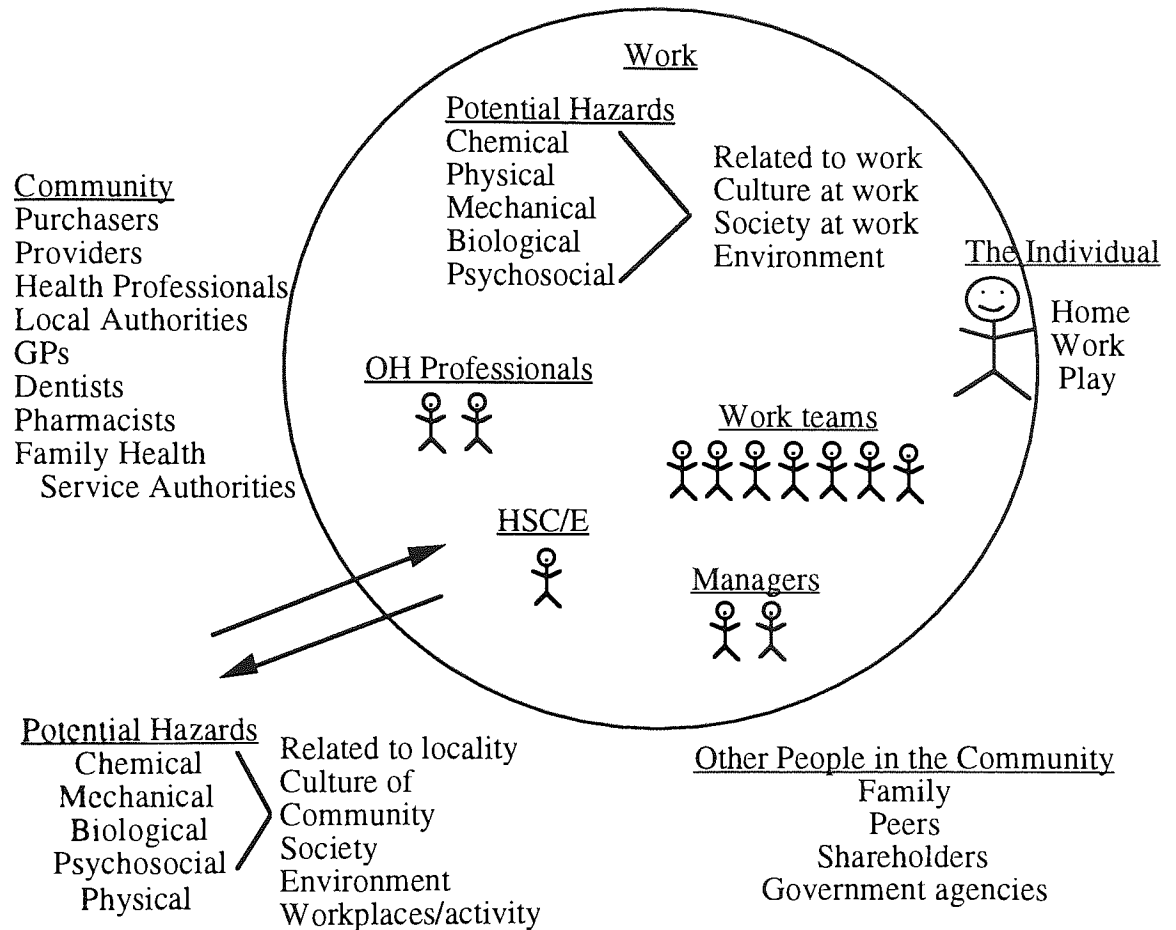
The authors of the report 'Occupational Health - as a component of Primary health Care' (WHO, 1986B) feel that workers' health is a part of primary health care, citing four major elements in their argument. Firstly the Declaration of Alma-Ata (1978) states that primary health care is the first level of contact with the national health system bringing health care as close as possible to where people live and work. Secondly, at the above conference, Recommendation No. 8 emphasised that high priority should be given to working populations who were at risk, and the activities necessary to manage that risk should extend to the workplace. This was necessary in order to systematically identify those at highest risk to provide continuity of care for them, to eliminate factors leading to ill health. Thirdly, the WHO Conference on Primary Health Care in Industrialized Countries (WHO, 1986A) emphasised that primary health care must involve participation of those served by the service, help people in assuming greater responsibility for their own health, continuity of relationships with every member served by the service, and for the service to be staffed by a multi-disciplinary team. Fourthly, primary health care must be accessible to everyone, relevant to need, functional and integrated. This can be achieved in the workplace. The final paragraph in this argument for occupational health services being seen as part of primary care is that:

"one of the main elements of the European regional strategy for health for all by the Year 2000 is the reduction of preventable conditions (WHO, 1983). Amongst the most preventable conditions are hazardous exposures at the workplace which can be reduced by the activities of the OH service" (WHO, 1986B, p. 13).

Having argued for workers' health to be seen as an element of primary care by applying the standards of, and arguments for, primary care to the workplace, the report then turns the argument around to view primary health care as a component of workers' health. The basis of this argument is the ILO Convention 161 concerning occupational health services and Recommendation 171 (HSC, 1986). It is felt that the

ratification of the Alma-Ata Declaration and the ILO Convention would place OH services as an integrate part of primary health care, having both a preventive and curative element. The authors still saw the delivery of care through a workers' health service and a primary health care service (see Figure 1).

Figure 1. Health Care Services



Summary

This review of the literature on health, illness, disease and its application to caring for people at work has identified the continuing debate and lack of clarity in the literature. There is an emerging area of the literature which places the individual as central to this discussion; this is the theme which should continue to be explored; generalisations have a limited place in caring for people and helping them to stay healthy in whichever setting they are.

The emerging issue for this researcher arising from the review of the literature is the one of the individual as central to the concept of health. Although there can be generalisations made about health, illness and disease, a greater understanding can be achieved by placing the individual with his/her health, illness and/or disease central to any analysis.

If to have health is a measure of equity in society, then the individual will need to be considered within a series of social norms. A simple example would be that we have norms for exposure to lead in the workplace. We think we know the levels most people can be exposed to without producing changes which can be measured. We have a system which measures everyone exposed against an acknowledged standard. This is one level of equity. The next level is to acknowledge the position of the individual within this standard; what is the individual response, on what is it based, are there other factors to be considered, i.e. physical or behavioural. If health is seen as a human right, the individual must be central to the concept of health.

Health is also seen as a resource, something which allows for a productive life, a concept of being 'able to'; but we do not need the same ability to be able to do things as we did 20-30 years ago. Machines and technology have changed our lives in the home, at school and at work. What do we need this resource for? Perhaps we just need to be healthy and not to experience ill-health and disease.

One major concept which emerges from the literature is that of shared responsibility for health. Health and disease are multi-factoral issues, their continuation or avoidance in an individual is also multi-factoral. The responsibility for maintaining health and avoiding disease is shared with many players; the state, the state systems, legislative framework, health service provision, education, social infra-structure. Central to this shared responsibility is the individual; there is a responsibility for individuals to care for themselves and others. Major improvements could be made in the health of the

nation by people stopping smoking; only an individual can decide to do this. Science has shown that smoking is a major contributory factor in coronary heart disease, stroke, low birth weight of babies and cancer (HMSO, 1992). In some workplaces smoking is actively discouraged because of issues surrounding passive smoking. Smoking is banned in some industries because of damaging the product; in other industries it has been demonstrated that smoking increases risk, i.e., development of lung cancer in asbestos workers.

The concept of partnership and shared responsibility needs to be fostered, a greater involvement of 'the community' in identifying health needs in a community, a greater involvement of local people in deciding on health priorities in a community, and a greater involvement of local people in assessing and evaluating the provision of health care arrangements. This could help in reducing the feelings of people in communities that health is the responsibility of someone else.

The purpose of this study is to explore the views that people who work hold in relation to their health. To identify if there are aspects of their lives which they have found to have had a more profound effect on their health than others.

Research Questions

This study will address the following research questions:

1. Do people who work feel healthy?
2. Do people who work feel their health has ever been affected for good or bad by their work?
3. Do people who work feel their health has ever been affected for good or bad by their leisure activities?
4. Do people who work feel their health has ever been affected for good or bad by their life-style?

Chapter 3

SURVEY DEVELOPMENT AND METHODOLOGY

Introduction

This survey was started to explore the relationship between work done by people and their perception of their health. There was no specific reference to this area of work in the literature, and the researcher knew from personal experience that people who work did have 'health problems'; some of these were related to the work they did and the life they led. Prior to the pilot work the research questions were very much focused onto health and work. The pilot study gave the opportunity to extend and refine the enquiry. There is little in the literature which addresses this group of people, therefore there is little understanding of their health status, the factors they feel have an effect on their health and how they view their health.

Research Questions

As a result of the pilot work, the review of the literature, and discussion with experts, the following research questions were identified:

1. Do people who work feel healthy?
2. Do people who work feel their health has ever been affected for good or bad by their work?
3. Do people who work feel their health has ever been affected for good or bad by their leisure activities?
4. Do people who work feel their health has ever been affected for good or bad by their life-style?

The Reasons for Asking the Questions

1. **Do people who work feel healthy?**
 - A. Epidemiological information in a community does not always differentiate between employed and non-employed people.
 - B. There is no information available to support the question.

- C. The provision for health in the workplace is managed by the Department of Employment, not the Department of Health. The Department of Health does not, therefore, take a particular and specific interest in the workplace.
- D. The literature would support the supposition that the incidence of occupational disease is grossly under recorded; therefore, health in the workplace could be an important social and economic issue.
- E. Health is known to be a very individual concept. This links to assessment of need and the corollary that individuals will, in most circumstances, make their own decisions about utilisation of services.

2. Do people who work feel their health has ever been affected for good or bad by their work?

- A. Work is seen as both a positive and negative effector of health in an individual.
- B. Epidemiology indicates that there are considerable negative effects to the health of workers.
- C. Morbidity and mortality statistics indicate a reduction in occupational disease.
- D. The Health and Safety Executive/Commission indicates there is an under recording of occupational disease in the community as a whole.
- E. Most NHS health care providers do not take occupational history and exposure into account when assessing the needs of the community they serve.
- F. The incidence of occupational accidents seems to be declining.
- G. There are arrangements in place, through the Department of Employment, for modification of workplaces and equipment for the disabled or handicapped.
- H. At a subjective level, people who work will have a view of the effect of work on health.

3. Do people who work feel their health has ever been affected for good or bad by their leisure activities?

- A. People bring to work their 'existing' health; their health could have been adversely affected by their leisure activities. This means their life at work may need to be modified, or has been restricted.

- B. Leisure activities are known to have a beneficial effect on health. Do people who work appreciate this and take exercise outside work?
- C. There is a considerable national investment in the provision of leisure activities; do people at work take advantage of these provisions?

4. Do people who work feel their health has ever been affected for good or bad by their life style?

- A. People bring their existing health to work with them.
- B. Peoples health could have been affected positively or negatively by their life style, and be affecting their work performance.
- C. There is a wealth of literature which indicates that health is affected by life style issues such as:
- Poverty
 - Education
 - Housing
 - Smoking tobacco
 - Drinking alcohol
 - Working shifts
 - Availability of transport
 - Sleep patterns

Pilot Study

There are many factors which can have an effect on a persons sense of well-being; their perception of health, their ability to function to their optimum capacity. It appears from the development of policy in the UK that little consideration is given to health of people at work. This is within an overall policy framework for health. This is a short sighted policy in that it fragments health into compartments and does not allow for the individual as a whole to be considered. Since there did not seem to be any consideration of these factors in the available literature, this study was undertaken.

Development of the Instrument

Researchers ask questions about age and sex, in that this information provides a base line, and also allows for very real differences between the sexes to be collected. There are health issues which are very much gender based, and also patterns of ill health which are different between the sexes. These could range from issues of reproductive

health, to handling and lifting weights, to the different occurrence of health issues between men and women, i.e. lung cancer. Assumptions are made about the effects of health through the ageing process, but being 20 years of age does not always mean a person is healthy, nor does being 64 years of age mean one is unhealthy. By collecting information on age, a feeling is given of life experiences. Link this information with educational and work experience, and a clearer picture begins to emerge. A person who is 50 years old now would have been born in 1942, during the second world war. They may have experienced deprivation during the war; they will have experienced food rationing. They will have experienced certain environmental factors, poor air, possibly poor housing or overcrowding; so, many factors could be considered in relation to their health.

When thinking about the health of people at work it is important to find out what job of work they do, how long they have been doing that job, and have they worked in other organisations or done other jobs. There is a wealth of research which clearly demonstrates the association between work and health and the harmful effects that can result from that relationship. In many instances there is a long latent development period for occupational diseases which means it is helpful to link these questions of potential exposure or wear and tear, with time and the individuals age. There are also gender issues in relationship to occupational exposure, an area of recent concern, which is raising issues of equity, that is of reproductive health linked to occupational exposure to substances (Ellicott, 1990; Fletcher, 1986). Chamberlain (1991) in his paper on work in pregnancy, declared that there were 25,000 separate chemicals used in industry with 2000 compounds being added every year. These substances can have an effect on men, women and the unborn child.

Hours of work and patterns of work are thought to have an effect on health, and if this is linked with other factors such as dependants, there is an opportunity for compounding the problems. Not all people will find caring for dependants an additional problem, but the literature does lead one to expect that it might, particularly

if the person is also working in paid employment. Link this with the fact that people are living longer, and often the people who are caring for them are themselves approaching old age (Dept. of Health, 1989). Other aspects of an individual's life can have an effect on their health and well-being. Marital status can be either a positive or negative aspect, but generally the view is held that individuals within a caring, stable relationship are more likely to be healthy than those that are not. People who are grieving as a result of separation, divorce or bereavement will often demonstrate features of ill health. Where two partners in a relationship are working, this can produce positive and negative results. There may be increased income and the opportunity for increased purchasing power, but there may also be the strains of pursuing two careers, and the dilemma of who stays at home to care for sick children (Rapaport & Rapaport, 1971).

Income within a household is an indicator of many features. It is used to classify people within society, and judgements based on that classification can be drawn. This sort of classification has been used to good effect in recent work on the health of the population (Townsend & Davidson, 1988; Whitehead, 1988). It provides for social norms. Assumptions are then made on the social position of the people within the household and their ability to utilise health resources, either through private purchasing or 'management' of a state provision. These assumptions are ably demonstrated in the work done over the past twenty years by Peter Townsend (1979). His work on poverty and its subsequent application to health have become classics in their own right. They form the basis of so much work on health and deprivation, for example, the use of the Townsend score in deciding allocation of resources in the NHS.

Another area where inferences are drawn from classification of individuals is type of education; the theory being that people with a higher level of educational experience are more likely to take up and utilise health care provision and health promotional information than people who have had limited educational experience.

Each individual has a perception of their own health, which they cannot always articulate, and indeed for many people it is not an issue which is addressed until something occurs which affects the individuals' equilibrium and their health is affected. There is a need to identify how people perceive their own health, how they perceive their health status in relation to their peers, and the major factors they feel could have had a positive or negative effect on their health. This will be important if there is to be a move towards greater sharing of responsibility for health between individuals and the state.

Apart from major accidents and incidents, the majority of people will decide when they consult their General Practitioner (Zola, 1975). Consultation rates and reasons for visits will give an indication of an individuals actual and perceived health status. People with long standing or permanent health conditions may not necessarily have a greater take up of health care provision, nor an altered perception of their own health. Substances being taken, such as medication, will add to the picture of the individuals health profile, as will information on the type and frequency of exercise taken by people. Altered sleeping patterns and worry about health or other issues can have an effect on a persons ability to function efficiently and effectively in the workplace and may be an indication of an underlying health issue.

The health effects of smoking tobacco and drinking alcohol are well documented in the literature, and it would be helpful to identify if health education and health promotion efforts are affecting the behaviour of people in the workplace. The provision of health care in the workplace is not a statutory requirement in the UK; it is in all EEC countries with the exception of Eire, Greece and the UK.

General Practitioners see themselves as the interface between their patients and all other providers of health; they are the gatekeepers. This view extends to the workplace, and occupational health departments would usually seek permission before carrying out

procedures which would be considered as part of general practice, i.e. syringing ears for impacted wax, administering medicines, other than on an emergency basis.

In the past there has been considerable concern about sickness absence from work (Taylor & Pocock, 1981) and the role of the GP in that process. It would be interesting to see if self certification has affected sickness absence, and the length of absence.

Most of the work on concepts of health seems to focus on what professionals, researchers and planners say health is. This group of 'well' people present an ideal opportunity to collect perceptions of individuals in relation to their health.

Some of the information to be gained from this survey is available through the General Household Survey and the census, applied to the population as a whole, but not directed at an employed population. If these people generate the wealth of the nation which then allows for general health provision to be made, and it is acknowledged that work can damage a persons health, there needs to be a survey of employed peoples health to assess the size and range of the issues or problem.

From the consideration of the issues described above and in the literature review, it became apparent that there was a need to do a pilot study which would: 1) allow for the development of an instrument, and 2) would test issues of access to the workplace to facilitate distribution of a questionnaire. There was also the need to test methods of collecting information through a formal instrument and peoples ability to read and understand such an instrument.

Following extensive discussion and communication with experts on questionnaire design (people who had previously researched in occupational health, researchers in the general field of health, and statisticians whose interest was in the field of health), the "Employees perception of health" questionnaire was piloted during April 1989 (see

Appendix 4). Senior managers at a large cotton and paper processing organisation in the West Midlands gave permission for the questionnaire to be piloted in their organisation.

Population

The working population in this organisation was made up of 600 males and 400 females, a total of 1,000 employees. In addition to the workforce who actually make the products (sanitary ware, disposable nappies, incontinence pads), there were also the product support services, maintenance staff, clerical staff and security staff. The organisation works a full shift system, Monday to Friday.

Sample

It was intended that a one in fourteen sample of the population would be used for the sample. This was an arbitrary figure, used to test the random sampling method. In the event, a random distribution was made which was not truly representative of the workforce, some occupational groups being over represented. This was because the staff in the occupational health service made pragmatic decisions to gain as wide an involvement as possible in the survey. This action was meant to be helpful, the implications of the action not being fully understood. This resulted in more females in sedentary work being included rather than manual working men. Although this was an issue for consideration, the sample was made up of people who were at work.

Method

The use of questionnaires was decided upon as a means of collecting information, as it was felt that it would take up less of employees time, and could be filled in at their leisure at home if they intended to take part in the survey. Structured interviews had been considered, but it was felt that the time required to gain information in this way was not compatible with the production methods in the organisation and would not gain management support.

Questionnaire Design

A mix of open and closed questions were used in the questionnaire; closed questions to collect factual information which could be easily coded for analysis, and open questions following a closed root question to obtain the individuals perception, or qualitative response. For example:

"Compare yourself to someone of a similar age, would you say your health is:
above average
average
below average"

is followed by the secondary question "Why do you think this". This allowed respondents to make a judgement and support it with explanation. This is described by Oppenheim (1966) as the 'why' probe, allowing for individual analysis and interpretation.

The questionnaire covered questions on age, sex, work done (now and in the past), and hours and shifts worked. Information was also collected on marital status, and if the partner worked, what work that was. Other questions included the income level of the household, the educational attainment level of the respondent, and if the respondent had any dependant relatives. The next section collected information on the respondents health, their perception of their health and whether their health had been affected by work, leisure activities or the life they lead. When had they last seen a doctor, what was the reason for the visit, how many times had they visited their doctor in the last twelve months, and had they any long-standing illness, disability or handicap. Were respondents taking medication of any sort, where had they obtained it, and what was it called? Did the respondents take exercise and how frequently. Are they worried about their health, how do they sleep, do they take sleeping tablets. Are they worried about other things besides their health, do they smoke tobacco, do they drink alcohol, did they know of any health effects of smoking and drinking and had this knowledge affected their behaviour. Had they visited their occupational health department in the last twelve months; if so what for; had they been to see their General

Practitioner for the same reason and finally, was this a new condition or an existing problem.

There did not seem to be any difficulty at all in filling in the questionnaire and the majority of people appeared to answer the questions in an open and frank manner. Confidentiality was stressed in the initial letter (see Appendix 5), and perhaps the involvement of the occupational health staff in the distribution and collection of the questionnaires served to emphasise the legitimacy of the exercise.

The closed questions were analysed using a standard database, which facilitated a straight forward 'count' analysis and allowed for percentages to be calculated. This meant that the open questions had to be collated manually and, unfortunately, the data base could not easily deal with International Classification of Diseases (ICD) numbers which were used to code conditions. The data base allowed for straight forward analysis of data, and for the analysis of relationships; it did not allow for statistical testing to be done. Qualitative data, which was important, proved difficult to analyse in relationship to the quantitative data, and particularly in relation to the ICD categories.

Seventy questionnaires were sent to the organisation, and the senior Occupational Health Advisor was asked to make a random distribution among the workforce. Five questionnaires were to go to senior managers, ten to middle managers, and the remainder to operatives. Sixty-one were returned, overall a 87% return. Respondents were asked to put the completed questionnaire into a sealed envelope addressed to the author, care of the occupational health service. All the questionnaires were then returned to the researcher. With this level of response, no reminder letters were sent to non-respondents.

Findings

A total of 61 questionnaires were analysed (87%); thirty-two female (52%) and twenty-nine male (48%).

Shifts

Seventeen people (28%) worked shifts; twelve (20%) working rotating shifts and four (7%) working nights only. Two people (3%) worked a permanent 6 am to 2 pm shift. The rest of the cohort (42%) worked a formal 9 am to 5 pm day.

Marital Status

Fourteen people (23%) were single, forty-one (67%) were married, four (7%) were divorced, and two people (3%) were widowed. Of the people who were married, twenty of the females' partners worked, compared with thirteen of the males, and only one married females' partner did not work compared with seven of the married males partners.

Income

Three people (5%) recorded a gross weekly income of £150 per week, twelve people (20%) an income of £150 - 250 per week, fourteen people (23%) an income of £350 - 450 and twelve people (20%) recorded a gross joint income of £450 per week. Seven people (11%) did not know the joint income of the household. Some of these were younger employees and single people living with a partner.

Education

Thirty-nine people (64%) left school at sixteen years or before, ten people (16%) at eighteen years or before, eleven (18%) had been to college, and five people (8%) to a polytechnic. Six people (10%) recorded other types of education.

Dependants

Twenty-one people (34%) recorded having dependant children, four (7%) dependent elderly relatives, but no one recorded having handicapped relatives. Twenty-six people (43%) did not record an answer.

Healthy

Fifty-five (90%) recorded a positive score to describe themselves as healthy. The remaining six (10%) who thought they were not healthy, gave the following main categories of International Classification of Diseases as the reason:

Endocrine, nutritional and metabolic diseases and immunity disorders - 2 (1 female, 1 male)

Diseases of blood and blood forming organs - 1 female

Diseases of the respiratory system - 1 female

Diseases of the digestive system - 2 females

Health

When asked to compare themselves to someone of a similar age, fifteen (25%) thought their health was above average, forty-two (69%) felt their health was average and four (7%) felt their health was below average. People tended to use the same criteria for deciding if their health was above average, average, or below average. These were their ability to take exercise; existence, or absence of disease; lack of sickness; body weight; diet; smoking and drinking habits; and a general comparison with their peers and colleagues at work. All these factors were used positively and negatively. People tended to use outward signs, for example physical appearances or behaviours; this links with traditional thinking of medical definitions of health, ill-health and disease.

When asked if they felt their health had been affected by their life style, the work they did or their leisure activities, the following results were recorded. Three people (5%) did not respond. Fifteen people (25%) felt their health had been affected by the life they led, thirty people (49%) felt their health had been affected by work, and thirteen (21%) felt their leisure activities had affected their health. Only four people answered these questions taking a positive view; all the rest were negative in their perceptions.

Visits to the Persons Doctor

Fifteen people (25%) had seen their doctor within the past one to two months, twenty-eight (46%) within the past three to twelve months and eighteen people (30%) over twelve months ago (one of these people not since 1949).

Number of Visits to Doctor in Last Twelve Months

Twenty-one of the males in the group (72%) had visited their doctor on one or more occasions in the past 12 months. The females had a similar number, .23 (72%), with one person stating a total of 24 visits to her doctor in the last 12 months. This lady has problems relating to her 'blood'.

Handicaps

When asked if they had any handicap or long-standing disability or infirmity, twelve people (20%) recorded yes, eight males and four females.

Medicine

Fifteen people (25%) were taking 'medicine'; twelve (20%) on prescription from their doctor, one (2%) from the occupational health department and three people (5%) were taking herbal, homeopathic or vitamin sources of 'medication'.

Exercise

Only eleven people (18%) admitted to taking no exercise at all, although the 36 (59%) who listed walking as their exercise may have interpreted the walking they did at work in this category, making the no exercise group much bigger if walking as a true exercise was recorded. The number of times in the week when people took exercise varied depending on the recording of the particular exercise. Some people took more than one form of exercise, and on more than one occasion a week.

Worried About Their Health

When asked if they were worried about their health, twelve people (20%) recorded a positive response.

Sleep

Forty-one people (67%) felt they slept well, six people (10%) had difficulty in getting to sleep, and twelve people (20%) recorded disturbed sleep. Six people (10%) had

difficulty in waking up, but no one woke up early. Only one female took sleeping tablets.

Worry/Anxiety About Things Other Than Health

Thirty-four people (56%) recorded yes to feeling worried and anxious about things other than their health. The factors which caused this anxiety were classified into major categories and include: employment, 17 (50%); family matters, 13 (38%); money worries, 9 (26%); personal issues which were too personal to discuss, 3 (9%); relationships, 3 (9%) and general well-being, 2 (6%).

Smoking

Only 15 people (25%) smoked, and 50 people (82%) said they were aware of the effects of smoking. From the comments made this would appear to indicate an understanding of the effects of smoking on health.

Drinking

Three people (5%) drank alcohol daily, 25 (41%) drank alcohol weekly, 28 (46%) drank occasionally, and five people (8%) never drank alcohol. One of these people recorded the fact that they had alcoholism. Forty-seven people (77%) said they were aware of the health effects of drinking alcohol; from the comments made, this would appear to indicate an understanding of the effects of drinking alcohol. Only 21 people (34%) recorded that their understanding of health effects had affected the amount they drank.

Occupational Health Service

Thirty-two people (52%) had visited the occupational health department within the last twelve months, 12 (20%) for health supervision reasons, pre-employment health assessment and advice on health matters. Twenty-five people (39%) had visited for treatment of minor ill health, headaches, colds, sore throats, and one person in a liaison capacity.

Twelve of the people who had visited the occupational health department had also been to see their general practitioner with the same condition, and in nine instances (15%), this was also a new condition.

Development

Main Methodological Issues Arising from Pilot work

The questionnaire method of collecting information was tested by the main pilot group and by a smaller 'unwell' group of employees. The 87% return rate by the pilot group and the 100% return by the 'unwell' group confirmed that people who are at work are able and willing to answer questions in a formal format of a questionnaire.

The distribution method was a cause for concern in the large pilot study. The difficulties in achieving a random sample seemed to link with the distribution process. In the 'unwell' group it may well be that the personal request of the occupational health nurse influenced return rates, also the idea that it was the questionnaire which was being tested rather than the person filling in the responses to the questions.

There was a need to refine and alter questions as a result of the pilot work, and this work allowed for reflection on the main issues. These issues included content of questions, methodological issues, and expected outcomes.

Development of the Research Questions

The main areas of the questionnaire in the pilot study were retained, although some modification to questions was required. There did not appear to be any unclear or ambiguous questions from the answers received, but there were perhaps questions which did not really need to be asked. For example, it is useful to know if a persons partner works, as this can effect life in general, both positively and negatively, but it is not necessary in this survey to know the work being done. The work done by partners would have an effect on the partners perception of health, but perhaps not

such a major effect on the individuals in the survey's perceptions. There is no need to ask questions about sleeping tablets when there is a general question covering medication. Some questions which were left open in the pilot study were closed in the main study. The question 'Do you ever feel worried and anxious about other things besides your health?' remains a yes/no response. It became apparent that people who responded positively to this question were concerned by certain major issues; these were family concerns, employment, finances, relationships, their own well being and a category of other issues too personal to record. This question was modified in the light of those responses. In the pilot study there was one question which addressed the three areas of work, leisure and lifestyle.

In the main study this question was separated into three distinct questions asking people to score on a scale of 1 (good) to 5 (bad) the effect they felt the various activities had on their health. They were also asked to support their score with comments. The question was divided and scored in this way because in the pilot study the responses from this question were all negative in relation to work. There were no positive responses at all. The alterations were an attempt to reduce bias introduced by questionnaire design. The implied bias was that work was bad for health, and by structuring the question in a different way, it became clear that work could be positive to health, and also that it was legitimate to say so. The Likert type scale was introduced for this question to show people that a range of answers was possible, although a true Likert scale was not used (Oppenheim, 1966).

Throughout the design of the questionnaire there was a conscious attempt to place health questions before questions related to health alteration. It was expected that respondents would give a more accurate perception of their health if they did not have to discuss deviations from health before declaring what they felt their health state and health status was. Blaxter (1985) feels it is important to distinguish between health state, the present health of the individual and health status, the general characteristics

of being healthy or unhealthy. The direct questions relating to perceptions of health would equate to peoples' perception of their health state, with a general overview of all the questions giving a perception of health status. Additional questions were added on housing, availability of transport, feelings of ill health during the past twelve months, and any absence from work based on that feeling of ill health. These additions were as a result of additional reading of the literature and discussion with colleagues on the results of the pilot study. The final question added to the questionnaire was 'What does the word health mean to you?' This is an attempt to collect views in as true and unstructured way as possible of what the word health means to people. This allows people to express their own views, and to reflect on this meaning for themselves.

There is a wealth of information and knowledge available on the issues raised in this survey. The range of information is explored in the literature review. However, in many instances the relationships between work and health have not been addressed as they are explored in this survey. The concepts of health, illness, disease and work are used to support and explain the results, but in this instance it was felt to be important to describe what was happening in the workplace in relation to peoples perception of health, and their personal experiences.

Main Study

To test the reliability of the questionnaire, it was administered on four separate occasions. Prior to piloting the questionnaire, and during the developmental phase, the questionnaire was tested with a small group of 25 employees to test the understanding of the language used in the questions. This small group was employed in organisation 3, the tyre manufacturers; they were subsequently removed from the main study to reduce bias. The number of people included in this developmental phase was quite arbitrary, and was a reflection of what would be tolerated by the organisation at that time.

Reliability Data Pertinent to Present Study

The reliability of the questionnaire was tested amongst different groups of people during the developmental stages. There did appear to be a measure of stability in the questionnaire when it was tested with various groups prior to administration. With this method of design it was not possible to use a test-retest reliability method for assessing reliability (Polit and Hungler, 1987). This was because the sample population was not known to the researcher, and people in the work-place would probably not return a second questionnaire on the same topic to an 'outsider'. Also, the beliefs being measured could change over time making such an approach inappropriate (Brink and Wood, 1988).

Additional Testing

The questionnaire was further tested amongst a small group of employees (10), who had known health conditions. The number of people included in this group was a reflection of the number of occupational health nurses who were able to take part. These were people identified by occupational health nurses students who were attending the Occupational Health Nursing programmes at the University of Wolverhampton. These nurses took questionnaires to people in their workplace who they knew had a health or ill health condition, and asked them to help with the study by filling in the questionnaire. This meant that people from ten different organisations could be included, which allowed for an additional testing of the questions other than 'health' questions. All ten people agreed to do this and returned the questionnaires, which clearly identified that the questions would pick up information accurately from people who had conditions of ill health. This small scale triangulation exercise was a test against known health status, to identify if the questionnaire could successfully collect ill-health responses.

The questionnaire did appear to elicit information from individuals consistent with the questions asked. Any ambiguities which did occur were corrected from the pilot study ready for the main study.

Validity Data Pertinent to Present Study

The issue of validity of the questionnaire used in this research has taken a considerable amount of time and effort. There was not a readily available tool with which to assess employees perceptions of health. The Nottingham Health Profile (Hunt, McEwen & McKenna, 1986) was not designed for this purpose although it was shown to transfer to 'well' populations (McEwen, 1983). This researcher did not feel that the form of questions used in the Nottingham Health Profile were appropriate to the research questions being asked in this project, being in the main 'functional' questions rather than gathering information on health behaviour and factors which are known to have an effect on health, i.e. income, education, occupation (Townsend, 1979, 1988).

If the view being taken is that this survey is a snapshot in time, and taking on board the notion that people feel better or worse from day to day, then changes could occur and perceptions could be altered. It is probable that the views expressed by people in this survey will be 'true' for a period of time, but it is difficult to fix that time. One person who said they had disturbed sleep was experiencing this pattern because of a new baby; as time progresses this will be resolved.

Content Validity

Initial discussions were held with people who had researched in the fields of occupational health, health and health promotion/education, as well as with statisticians and people with research skills. These discussions centred around a series of questions proposed by the researcher drawn from personal experience, reading of the literature and formal reports produced by government departments.

Content validity was tested by discussion with experienced occupational health practitioners, and by using a panel of experts to review the questions being developed. The questionnaire was circulated to ten 'expert' practitioners, including doctors and nurses with experience and qualifications in occupational health. They were asked to consider the questions being asked and to give their judgement as to the appropriateness

of those questions to illicit health information. This was a new exercise for this panel of experts, the method not being a standard form of research practice in occupational health and epidemiology in the UK, although it is a standard practice in the U.S.A. and is being more frequently used in social science research in the UK (Brink & Wood, 1988). This 'on the face of it' review of the questions by a panel of experts was interesting in that the nurse members of the panel thought the questions asked would give information on an individual's health, and the doctors had some difficulty with the questions. This may be an indication of the different professional perceptions, background and experience. Minor adjustments were made in the light of comments.

Following this exercise further modifications were made and two particular areas of enquiry were discarded, those of ethnicity and diet. Although there are issues of race and culture in relationship to health (Donovan, 1986; Cornwall, 1984), the complexity of those issues was considered outside the possibilities of this project. The areas where people from ethnic minority groups live, in the West Midlands, tend to cluster around the major cities and large towns. People from ethnic minorities in the more rural areas tend to be part of professional groupings, i.e. doctors, nurses, accountants. Many people, particularly from Asian and Chinese communities are themselves small business people, rather than working for other people in large organisations. Many first generation immigrants tend to be working in jobs which the indigenous population no longer wishes to do. This was found to be the case in the health service; the immigrant population filled the lower level jobs of cleaner, food preparation and assistant to nursing whilst the indigenous population held the management role. There are known health issues which are specific to certain ethnic minorities; for example, thalassemia amongst people from the Mediterranean, sickle cell and hypertension amongst Afro-Caribbean groups, and diabetes amongst elderly people from the Punjab.

The other area of possible questioning which was removed, diet, was a complex issue with many variables; diet at home, diet at work, availability of appropriate diet, knowledge of appropriate diet, the list is endless. The complexity of both these issues

is acknowledged and the loss of this information will affect the richness of the final information gathered; however, time constraints precluded this area of investigation. There was no other deliberate exclusion of categories. The final questionnaire is shown at Appendix 6.

Coding the Questionnaires

The questionnaires consisted of nine pages with fifty eight individual questions and a space for individuals to add any comments they wished, including suggestions for the work of their occupational health department. Space was also provided for individuals to add their name, contact address or telephone number if they wished. The questions were a mix of open and closed questions with some of the closed questions being pre-coded; in all cases an option of 'other' was included. The closed questions were used to collect factual information, and the open questions collected information that was more individual to the respondent in that it allowed for personal perceptions and feelings to be expressed.

All the questionnaires were individually coded by the researcher and the information transferred to eighty column sheets to correspond to the computer screen. The coding sheet was a series of eighty columns, each column corresponding to a question, and in some instances covering more than one column. The question code was at the top of the sheet and the codes from the questions were entered to correspond. Where there had not been a response, or the answer was ambiguous, the same code was used throughout to indicate a negative. The programme used allowed for a range of numbers to be used to indicate the answer.

The questionnaires themselves were coded for both organisation and organisational position. In a four digit code, the first two columns indicated the organisation the individual came from, i.e. 01 was the emergency service. The second two columns on the survey number gave the position in the organisation that the individual held. The numbers 1-5 indicated senior managers, 6-15 included middle managers, and 16-

70 indicated operatives. Therefore, 1401, would indicate a senior manager in the catering firm; 1400 indicates the catering firm, and 01 indicates a senior manager. Where age was recorded, the full age was requested rather than restricting people to broad categories. It was thought that data would be lost if broad categories were used, although ages could always be grouped if this was necessary. This method was followed in any question which required a time answer, i.e. 'How long have you worked at your present organisation?'. All numerical data was recorded in actual numbers, the one exception being the joint income of households. This was coded into six major categories, to include 'do not know'. It is always difficult to collect accurate information on earnings, and it was felt that by putting broad groupings of earnings and extending these across households rather than individuals, some of the sensitivity would be reduced. Sensitivity was an issue in all the questions asked in this survey. People were being asked to 'expose' themselves to another person, even though they could not be identified. It is important for researchers to be aware of such sensitivities in that there is a need to maximise returns of questionnaires and also to have usable questionnaires returned. Questionnaires with large areas of questions unanswered distort overall results.

Levels of Measurement

The majority of information was collected on nominal scales, the information being mutually exclusive and collectively exhaustive. This method was used when the information could only be classified into one category, for example, gender. The information provided can then be counted and the frequency of occurrence into male and female named categories noted.

An ordinal level of measurement was used for other questions where it was important for people to be able to indicate at which point on a scale they felt applied to themselves. For example, the question which asked about good and bad effects of work on health used such a scale: good (1), fair (2), no effect (3), poor (4), bad (5).

There is no exact measurement between the points and indicates the individuals feelings of where they feel they are on this scale, a measure of relative effect, an indication of a tendency towards rather than an absolute measure (Hicks, 1990; Polit & Hungler, 1987; Brink & Wood, 1988).

CODOT Titles (Department of Employment, 1972A) were used to code the work that people were doing:

"Occupations are identified and grouped primarily in terms of the work usually performed, this being determined by the tasks, duties and responsibilities of the occupation" (p. 7).

It was felt important to distinguish between the work done and the setting in which the work was done. For example, a person could work in a university but be a food handler or a plumber. The CODOT system identifies three categories: unit, minor, and major groups. For this exercise only major groups were used (see Appendix 7).

The next major coding grouping used was the ICD (WHO, 1975B). This system was developed to facilitate the statistical study of disease phenomena, and to produce a common standard for this purpose. It was important within this study to have a data coding system which would allow for comparison with other studies. A difficulty arose when there was a need to code a visit to a doctor which did not have a disease basis to it, i.e. prevention of ill health by means of immunisation or vaccination.

The ICD system is again a system of major headings with sub categories and then disease specific categories. For example, within the broad category of infectious and parasitic diseases, which is category 1, there is a sub category of 020-027 which relates to zoonotic bacterial diseases, and within that grouping, 022 is anthrax. It is possible to move within these groups to give an indication of the diseases a person or community is suffering from. For the purposes of this exercise, only the broad grouping were used (see Appendix 8). The code 100 was used to indicate a visit to a doctor for preventative care, and 000 to record no response.

The coding for the question related to the taking of medication was provided from the standard MIMS catalogue distributed to all General Practitioners. The main categories used in this publication provided a system of coding which would cover all eventualities. These major categories are shown in Appendix 9.

The open questions were entered onto an integrated data base called Q & A, which is a simple integrated data base. The information included the survey number, the question number, the response to the closed part of the question where this was applicable, and the comments made to support the numerical answer. The use of computers in this exercise did not detract from the richness of the data, rather it added to the quality of information by allowing the information to be sorted according to the numerical scores. Against these scores the comments could be viewed and used in the analysis to explore and explain peoples perceptions. The comments were then looked at for emerging themes; these were listed in broad groups and coded. The comments were allocated a code from the broad conceptual groups. These codes were then added together to give dominant themes and concepts.

Data Entry

The information from the coding sheets was entered onto the data base by an experienced data entry person. The data was checked for accuracy and validity by the researcher and a third person.

Scope of Study and Introduction to Methodology

The subject population for this study is the employed population in the West Midlands region, who have access to an occupational health service and are in organisations known to the researcher. The purpose is to gather information on a group of people who are in employment, and to collect their individual perceptions of health. The sampling frame (Moser, 1958; Polit & Hungler, 1987) is based on the author's personal knowledge and experience of working with occupational health professionals in this Region for the past 14 years. It would have been impossible to survey all

organisations who employ people and have an OHS. There is no systematic collection of information on whether an employer provides an occupational health service for employees. Therefore there is no national or local data base which would have provided a population for sampling. A deliberate decision was made to cover a range of organisations to give as wide a mix of organisations as possible, and not to duplicate organisations who had the same basic function, i.e. two or three organisations who manufacture motor cars, to give as broad a mix of occupations as possible. A list of organisations is given in table 1. The West Midlands has a long tradition of metal forming industries, i.e. foundry work, metal processing, metal manufacture. This resulted in large organisations focusing on the West Midlands because there were experienced workers and a common understanding of the requirements to carry out such work. This development has in the past restricted the occupational opportunities for employees. The recession has resulted in a major reduction in traditional areas of working and a rationalisation of the activities of many of the traditional employers in the Region. An example would be organisation 11, a specialist metal manufacturers. This organisation at one time employed literally thousands of people, it carried out many different activities from foundries to rolling mills to armament manufacture. Since the early 1980's there has been major rationalisation, some aspects of work have gone completely. Divisions within the organisation have been established as independent organisations under a holding company. The traditional way of organising workplaces has changed and with that change, the way of working. People are now very much aware that they do not have a job for life, but during a working life will do different jobs in different places of work. The researcher was concerned to reflect this aspect of life in this survey.

Data Collection

There are many approaches to collecting data which would have been equally appropriate in this area of research. It would have been possible to develop a case-study approach in a particular organisation and explore in considerable detail the life of that organisation. The original research proposal was a case study approach in one

large organisation. The intention was to have planned interventions which would be evaluated for effectiveness in maintaining health and preventing injury and ill-health. One year into the programme major organisational changes occurred which meant that the research could not continue. The focus would be on contemporary events and would have addressed the how and why of research questions (Yin, 1989). This method is used in a range of research settings:

- "1) policy, political science, and public administration research;
- 2) community psychology and sociology;
- 3) organisational and management studies;
- 4) city and regional planning research, such as studies of plans neighbourhoods, or public agencies, and
- 5) the conduct of a large proportion of dissertations and theses in the social sciences" (p. 13).

A more qualitative approach could have been taken (Strauss & Corbin, 1990; Morse & Johnson, 1991A) whereby more focused research is conducted with a smaller group of people using observational and interview techniques. From these activities there is coding of information and the development of themes and theories which have relevance for the group being studied. Some of these techniques have been incorporated into this research and will be discussed more fully later.

In this study no attempt was made to generate major hypotheses.

"Another reason is the tendency for social science to start from 'a priori' hypothesis which may restrict and limit enquiry, when so often we do not know the relevant questions to ask. The basis of all scientific endeavour must be a clear description of what is happening and this may be hampered by forcing the data into preconceived theories." (Hanney, 1979, p. 1)

This view would be supported by Brink and Wood (1988), who describe three levels of research: level 1 is exploratory or descriptive research, level 2, descriptive survey, and level 3 is experimental. It is necessary to have level 1 research to move to level 2, and level 2 research to move to level 3. There cannot be movement to experimentation and hypothesis testing until there is a clear understanding and description about what is being tested. This survey is descriptive, level 2, work; that is a study to look at what is or what are the relationships between or among variables. The problem is addressed

through a conceptual basis, with the purpose of addressing research questions. There is insufficient research available on the health of people who work to allow for more sophisticated research techniques to be applied. The major epidemiological work in occupational health has been carried out in large organisations which have occupational health services. This work centres on the occurrence of disease and ill-health. There needs to be work done on perception of health to redress the balance. This work then needs to be repeated in smaller organisations which do not have any occupational health services for comparisons to be made. The work in smaller organisations would be seen as level 1 work, exploratory or descriptive research. The work that is being done in this survey is level 2 work, building on and extending existing knowledge, a descriptive survey. Future work could then be done testing the suggested hypothesis:

There is no statistically significant association between the perceptions of health of people who work in small organisations of less than 20 people, with no occupational health service and people who work in large organisations, more than 200 people, and have access to an occupational health service;

this would be level 3, experimental research, under Brink and Wood's classification (Brink & Wood, 1988).

In choosing an in-depth approach or a more qualitative approach, the volume and range of information could have been lost, remembering that this is level 2 research and there is a need to describe what is happening and assess the relationships between variables. In the past there has not been a survey of the general health of people at work on this scale, there have been surveys of groups of people who are displaying signs and symptoms of various diseases (Hunt, McEwen & McKenna, 1986). The intention in this study was to capture within a specific time span a snapshot of employees perceptions of their health by social status, occupation groups and individual perceptions across a range of occupational settings. This method can be seen as restricted in that it is a once only sample, and does not allow for analysis over time. However, it does allow for a baseline of information to be gathered. This is particularly important when building up information which can then be tested in other ways in the future. Problems can arise in that the group may not be totally

representative, i.e. some people were absent from work due to sickness or holiday, some people may be working off site. There is no way of knowing this. Depending on the time of year when the 'snapshot' is taken, different responses could be made; a different response could be made in summer than in winter.

The information gained in a broad sweep such as this survey could be further researched by interviewing individuals who had provided original questionnaire information. It had been hoped that this method would be used in this survey; however time constraints prevented this. The opportunity still remains for this activity to take place at some future date, to expand on the information presented by individuals, and to explore more fully with them the comments made on the questionnaire.

Advice was sought from statisticians on what would be considered an appropriate number to include in a sample to allow for useful inferences to be made. It is important to have as large a sample as possible in order that more defensible conclusions can be drawn. The numbers included in the following example are not 'scientific', but rather illustrative. If there is a commonly occurring theme amongst say fifty people in the sample, and they come from different parts of the region and from different organisations doing different work, then the conclusions drawn would be stronger than if it were five people in one organisation doing the same type of work. It would then be possible to move to level 3 research and test this phenomenon. The method chosen is that of a postal questionnaire using the occupational health service personnel to deliver and collect the questionnaires rather than the postal system. There is also the possibility within this sample to take a more qualitative approach with the use of open ended questions to assess perceptions or reasons for feelings of wellness or its absence.

The Population

There is consideration of geographical spread through the region taking into account different parts of the region, rural and inner city settings as well as urban areas. The

organisations also covered a range of Family Health Services Authorities and District Health Authorities. The West Midlands Health Region covers an area of 200 miles by 200 miles; it is the largest region in England and one tenth of the population lives in the region. The counties included in this health region are:

1. West Midlands County,
2. Staffordshire,
3. Shropshire,
4. Warwickshire, and
5. Hereford and Worcester.

A breakdown by Districts and male and female populations is given in Appendix 12.

In 1991 the population of the West Midlands Region was 5,254,900. This was made up of 2,586,600 men and a slightly higher figure of 2,668,300 women (WMRHA, 1992). In terms of employment, the total number of people in employment was 2,101,200; made up of 1,152,100 men and 949,000 women. The female group was divided into 548,000 (58%) in full time employment and 401,000 (42%) in part time employment (CSO, 1991).

The proportion of the population aged between 15 and 64 was 3,437,600 (66%); when considering this figure against the numbers in employment, 1,336,400 people in this age group are not in employment. Some of the people included in this category will still be at school, i.e. 15-16 years old, and 16-18 years old. Also included will be people who are full time students in higher education (CSO, 1991).

In a region of this size, with its widely varying needs, it was important to collect information from as wide a range of settings as possible to allow comparisons and generalisations to be made against regional and national descriptions. An organisation in the north of the region in the 'Potteries' will have different work/health activities than one in the Cathedral city in the south of the region. Equally different health care agencies may be forced to adopt different strategies for providing health care by their analysis of local need. The recently published Public Health Report for the West

Midlands Regional Health Authority (WMRHA, 1993) highlights that North Staffordshire Health Authority had a higher incidence of deaths from ischaemic heart disease than Worcester Health Authority for the 0-64 years age group, with 75 per 100,000 in North Staffordshire and 45 per 100,000 in Worcester.

The organisations were chosen by the researcher from the many potential organisations in the West Midlands on the basis of the researcher's knowledge of the organisations. This means that there are organisations which have been highlighted which may or may not be representative of all organisations. The logistics of removing this bias are outside the capabilities of a single researcher; however, it could be possible to access all workplaces in such a survey through inter-departmental co-operation at central government. This knowledge was restricted to personal communication with the organisation either through linking with the organisation and its personnel for educational purposes when the author was responsible for occupational health and safety education at a local higher education institution or through formal visits as an employee of the Department of Employment, Health and Safety Executive. There are, of course, other organisations who could have been asked, and possibly included, had the researcher known of their existence. The fact that some organisations have been excluded does not devalue the study; it produces results which provide a baseline for other researchers to measure against. The organisations included provide a cross section of work done by people, which health professionals in a particular area could use to make evaluations against such organisations in their community.

The Sample

The potential target population of the sample of organisations selected is 44,190. It was difficult to obtain information from three organisations on the number of employees and their division into male and female employees. This figure of 44,190 therefore represents only eleven of the organisations in this survey (see table 1). It is probable that with the inclusion of these missing figures the total number would be

nearer to 50,000 than 45,000. This would be a 1 in 100 sample of the West Midlands Regional Health Authority population. There are no systems which systematically collect information on all workplace activities. All workplaces make an annual return to government offices; it would seem a simple task to add an additional question on the provision of occupational health services. There seems to be an assumption amongst politicians and civil servants that health matters should be the province of professionals employed in the state system of health provision, and that these people will have knowledge and understanding of health issues related to the workplace. On the basis of this assumption then there is no need to collect information about health provision in the workplace, as general practitioners and others will deal with these issues as part of their general approach to health in the community. Some implications for not collecting information on health care provision in the workplace are:

1. Some work related conditions could go unrecognised.
2. Lost opportunity for health promoting and disease prevention activities.
3. Lack of control on work and health related issues.
4. Burdens placed on the community by occupational health and safety incidents.
5. No proper data base for decision-making
6. Research is more difficult to conduct because of lack of systematic approach.

The organisations included in the sample were chosen for their diversity and range, to give as wide as possible access to the range of jobs that people do and the potential hazards and work methods they are exposed to. With choosing to take an approach which utilised quantitative and qualitative methods, it seemed sensible to test these methods in a range of organisations to derive maximum information from the exercise. It is an emerging view that most health or ill-health effects are multi-factoral (Richman, 1987; Smith & Jacobson, 1988), and this range gave an opportunity for analysis of some of those factors including job done, range of jobs and range of organisations.

Table 1: Employees in Organisations (Standard sample size = 70 per organisation)

	Male	Female	Total	Potential Sample Ratio
Organisation 1 Emergency Service	2000	500	2,500	1:36
Organisation 2 Engineering Components	344	97	441	1:5
Organisation 3 Tyre Manufacturer	4,000	1,000	5,000	1:71
Organisation 4 Car Components	1,497	163	1,660	1:24
Organisation 5 A Health Authority	-	-	-	-
Organisation 6 Local Authority - Education	18,750	6,250	25,000	1:357
Organisation 7 Local Authority - Property services	247	104	351	1:5
Organisation 8 A University	2,500	2,000	4,500	1:64
Organisation 9 Electrical Components	299	307	606	1:9
Organisation 10 Ceramic Manufacturer	398	285	682	1:10
Organisation 11 Special Metal Components	149	101	250	1:4
Organisation 12 Chemical Manufacturer	2,750	450	3,200	1:46
Organisation 13 Electronic Manufacturer	-	-	-	-
Organisation 14 Catering Company	-	-	-	-
Totals	32,934	11,257	44,190	

There are some occupational groups which are not represented in this study. The sample is therefore opportunistic rather than totally representative. A total of four organisations refused to take part on the basis of over commitment of occupational health staff and others because of the sheer volume and pressure of work on their other employees; substitute organisations were found. The period of data collection, September 1990 to March 1991, coincided with increased effects of the recession in the West Midlands Region, with some organisations in the region closing down, some going on short time and feelings of unease in the region generally towards employment/unemployment. The first recession in the West Midlands occurred in the early 1980's; this resulted in many large organisations reducing numbers of employees and in some cases closure of large organisations. Large areas of the Boroughs of

Dudley, Sandwell, Walsall and Wolverhampton have been reduced to waste land. This is because the land has been contaminated by the substances used by industry seeping into the soil. This means the land has restricted use until the pollutant has been neutralised. The factories, foundries and buildings that were there have been demolished as the firms ceased trading. This resulted in many people not having a job and having to seek alternative work.

Sampling Methods

The sampling frame used in this study was selected on a random proportional stratified sampling method (Polit and Hungler, 1987), the stratification being senior manager, middle manager and operative. This would give an indication of social class as well as organisational position. The organisations gave permission through senior managers for the survey to take place; in some instances this was written permission, in others verbal. The sample population was then identified by the occupational health personnel. They identified individuals within the organisation at senior manager, middle manager, and at operative level, from the pay-roll, which was used as a sampling frame. It is unlikely that the same definitions would be used in all organisations to support these three organisational titles. However, within each organisational structure there would be a shared understanding of what the title meant. An operative would be someone who did the day to day routine process work of the organisation. This work will vary from producing tyres, caring for patients, teaching students, serving meals and producing nuts and bolts. A middle manager is someone who directly manages that process and is the link between the shop floor and higher management. The senior manager is probably more difficult to define in that their position would depend on the organisation itself. It may be that the organisation's senior managers have to report to other or more senior managers at 'head office'. A senior manager would be someone who was involved in a role which related to strategic thinking and planning, decision-making and analysis and evaluation of their day to day operational management. Advice and suggestions were given to the occupational health personnel on random selection techniques. Time was spent with

personnel who would be responsible for selecting individuals. The principles for random sampling were explained, that each member of a population should have an equal probability of being included in the survey. It was agreed that the selection should allow appropriate representation of all types of work being carried out, and not restricted to a particular occupational group. All occupational health staff were seen individually, to explain the survey and the importance of selecting people into the survey. The guidelines for randomly selecting people were worked through, explaining the need to remove bias through inappropriate inclusion of some people, i.e. all secretaries; by using a sampling frame which did not include all possible people, i.e. an incomplete pay-roll (Moser, 1958). Moser would describe the method used in this study as simple random sampling, this is:

"each possible sample of n units from a population of N units has an equal chance of being selected, which in turn implies that every member of the population has an equal chance of selection into the sample" (p. 74).

It was suggested by the researcher that the equivalent method of using a one in ten sample for one hundred employees would be used. This would mean that if an organisation employed approximately 2500 operatives, to achieve a group of 55 operatives, a one in thirty-six selection would be necessary (see table 1). The use of one in ten was an example to demonstrate to the occupational health staff that it would not be appropriate to use the first 55 people on the operatives pay-roll, that there was a need to think about selection and how it could be made to work in their organisation. The person doing the selection, either the personnel department staff or the occupational health professionals, could identify where they would start on the pay-roll. In the final analysis, there was no way of truly knowing if these suggestions were taken on board. This could mean that bias has been introduced into the survey by not addressing this very important area of selection, and the sample is not representative of the organisations. However, the main elements of this study are that people are at work and that they are prepared to articulate their perceptions of health. In some organisations it was impossible to randomly sample senior managers, in that

the whole senior management team might only number five. In these instances, all five managers would be offered a questionnaire to complete.

Initially a telephone call was made to the Occupational Health Department in the organisation to explain the nature of the intended research, to see if this seemed to be a project that the organisation would support. The Occupational Health Personnel (OHP) then discussed the proposal in broad terms with colleagues in the organisation. A second telephone conversation, or in some places a letter, confirmed or rejected the proposal in principle. Where organisations agreed to be involved, the researcher then visited the organisation to discuss the project with people who would be involved in the organisations.

The OHP produced a list of 70 people to be included in the survey. This list included five senior managers, ten middle managers and 55 operatives. The OHP had the list of people involved in the survey linked to the survey number. All questionnaires were sent out with a covering letter from the researcher, stating the purpose of the research and guidance on how to complete the questionnaire. The letter also emphasised the confidentiality of the information provided (see Appendix 10). The letter gave the researchers home address and telephone number and an invitation for any individual who had any questions to contact the researcher for clarification. Only one individual did this, a lady in the car component manufacturers (organisation 4) who received a reminder letter, but who said she had not received the original questionnaire. Some time was taken to explain the study to her, and she duly returned the questionnaire which was sent to her home address. During the discussion around the study, the lady expressed her interest and support for the study.

Some organisations also sent their own covering letter indicating that approval had been sought from the organisation, and that the individual had freedom to complete the questionnaire or not, as they felt appropriate. These letters have not been included to maintain the confidentiality of the organisations involved. This issue of confidentiality

was not discussed with the organisations, and was not a condition of organisations agreeing to take part in the survey. In terms of equity it did seem to be a research issue to be addressed. Individuals are afforded confidentiality and anonymity when taking part in surveys; should this courtesy be extended to organisations. This issue is discussed again in the section on standards for protection of subjects.

The letter from the researcher also suggested a return by date; this was negotiated with the OHP depending on how much time they felt they needed to seek names and get the questionnaires out to people in the workplace. In some organisations not all the employees were based on the same geographical site, this affected the time element of getting the questionnaires out and having them returned. Some of the organisations covered the whole of the West Midlands County. An example of such as organisation would be the emergency services. This meant that the system of getting post to individuals and having it returned could be quite lengthy, and could be weeks rather than days, simply because there were more elements in the distribution and collection than in a one-site organisation. This system was also dependent on the efficiency of internal postal systems within each organisation. In some single site organisations, the OHP were able to distribute the questionnaires by hand, in others the single site internal mail system was used. There was not one standard method of distribution and collection used across all organisations as this was outside the researchers control. The questionnaires were returned to the Occupational Health Department in a sealed envelope, with 'private and confidential', the researchers name and 'c/o Occupational Health Dept.', on the front label. This method did not seem to have a detrimental effect on returns of questionnaires. The highest and lowest returns were from single site organisations. Organisation 1 (emergency services), 5 (the health authority), and 6 (local authority education services) were not at the lower end of the range in terms of their returns. These sealed envelopes were then collected by the researcher for examination and assessment of the data. The survey numbers were used to record returned questionnaires, and then reminder letters (see Appendix 11) were sent to the Occupational Health Department with just the survey number on the envelope for the

OHP to put the individuals name on the envelope and send it off to the workplace. In all cases of reminder letters being sent to individuals, at least one month had elapsed from the return by date shown on the initial letter. No additional reminders were sent. If the first reminder did not elicit a response, then this was taken that the person did not wish to be involved. In organisation 3, the tyre manufacturer, the initial form giving survey numbers and names was lost between the initial questionnaire being returned and letters being made ready for reminding people. This part of the exercise could not then take place as the initial group could not be identified; this means that this organisational group is under represented in the sample. There is a long history of tyre manufacture in the UK and the occupational health implications are well known. It could be that the richness of personal perception from this group of workers is lost. Also this organisation has work patterns which are quite different to other organisations, by having a dedicated weekend working population.

Sampling Method Justification

It is unlikely that an organisation would give access to its personnel pay-roll data to an outsider, and yet it was important to have information on a random basis to remove as much bias as possible. The pay-roll information would be considered confidential to the organisation and not available to an outsider. Pay-roll information contains personal data on money earned and tax paid. If the research was being done by a company employee then the view may be different, and names only could be made available or even employee numbers from which a sample could be derived. The author felt that to make such requests from an organisation would not be sensible and could result in organisations refusing to take part in the research.

By using the OHP as a third person who was a company employee it was hoped to reduce any anxiety that managers in an organisation could feel towards the use of sensitive confidential information in this research. A bias could have been introduced by using the OHP; this bias could be positive or negative depending on how those individuals were perceived by employees, and what experience employees had had

with those professionals and the service. It was appropriate to use a third person who would have access to this information within the organisation and who would have a basic understanding of the thrust of the research and the rationale underpinning the approach. In the initial discussions OHP were shown the questionnaire, told of the range of organisations involved (or it was hoped would be involved) in the survey, how the survey was to be managed; the issue of confidentiality was discussed and what use was to be made of the final report. As the occupational health nurse and doctor have responsibility for health issues in the workplace and work in partnership with other disciplines in the workplace, they often have a position of trust and a reputation for confidentiality. This seemed to indicate their appropriateness to help in identifying the sample population. It was also appropriate to involve them in the distribution and collection of questionnaires. In many organisations, following an initial approach from the researcher, the OHP would then approach senior managers in their organisation to make the request for the research to be conducted in that organisation. In some instances this approach was all that was required, the degree of trust between manager and health professional being sufficient to allow the research to continue (organisations 1, 2, 3, 5, 9, 10, 11 and 14). The relationship between the OHP and other managers and employees in the workplace are different to relationships in the NHS. The OHP are employed for the specific task of maintaining the health of the workforce, irrespective of that persons organisational position; and maintaining the health of the organisation through the monitoring of the health of one of the most valuable and expensive resources in the organisation, that is the workforce. This leads to partnership relationships emerging, with mutual trust and respect. Part of this is because in the main the OHP are dealing with 'well' individuals. A different relationship develops when individuals perceive themselves as well rather than 'sick'.

In other organisations, the researcher was required to visit the organisation to explain the nature of the research, the methodology, and the anticipated outcomes to representatives in the personnel department and senior managers (organisations 4, 6, 7, 8 and 13). Often this was not a checking system on the part of other senior

managers, but rather a genuine curiosity, and a demonstration of support to the OHP. In other organisations representation was also made to the employees organisation, to gain their support and cooperation (Organisation 12). The OHP took the formal request letter as an agenda item to the Safety committee, to explain the initiative, to explore with the group the process, and to gain approval.

Possible Sources of Sampling Error

The Individuals

Sampling errors could have been introduced by the OHP not understanding the importance of random sampling from the pay-roll. This had been highlighted as a problem in the pilot study, and every effort was made in the main study to reduce this effect. Time was spent on a one to one basis explaining the needs of the study in this area. In the real world some pragmatic decisions may have been made. It could be argued that researcher bias was removed by the researcher not being involved in the selection. There did seem to be a spread across occupational categories which indicated random selection had taken place. Where the occupational group was so small as to be given no choice, i.e. senior managers, it has been acknowledged that sampling error occurred, or rather that sampling did not occur. In some instance the level of research methodology understanding of the OHP was limited, it was therefore important to share with them as much information on sampling method as possible in order to ensure their understanding and cooperation.

The Subject Population

By choosing to restrict the organisations to those known to the researcher and large organisation with occupational health services, a possible bias could have been introduced. Smaller organisations are not represented in the survey, and therefore employees in small organisations are excluded. This is in fact a very important issue. A definition of a small workplace or business is difficult to arrive at; however, the 1989/90 Annual Report of the HSC (HSC, 1990), in a section on small firms, states that:

"Some 90% of fixed workplaces registered with HM Factory Inspectorate employ fewer than 50 people" (p. 8).

Working conditions in some small firms are often less easy to control than in larger organisations because of lack of resources, knowledge and goodwill. The complexity of organising and managing a small firm often means that health and safety issues are dealt with less actively than in larger organisations. A small proportion of the employed population have been excluded from this survey, and this fact should be remembered as the project is read. The 10% of larger organisations employ the larger number of people (HSC, 1990). Some large organisations do not have an occupational health service, but where a service is provided, whatever the quality of that service, at least there is some health representation in that organisation. As previously stated there is not a list of organisations with OHS available from which to choose a random sample. A lack of willingness to be involved in the research does not indicate a disinterest in the health of employees nor does a willingness to be involved indicate a greater than average interest in the health of employees.

An attempt was made to be as representative as possible of the organisations in the West Midlands, and also to provide a microcosm of the organisations in the United Kingdom generally. The two areas not represented in the study are agriculture and construction. Agriculture in the UK is not organised in any formal way for the provision of health in the work-place. In relation to the whole of the employed population, agriculture accounts for only a small proportion:

"Today 3% of the country's 56 million people work the land, producing 60% of our food requirements". (HSE, 1986A, p. 2)

Agriculture is not a highly organised small business, the work is dictated by the seasons, management is not a main focus, and many enterprises are totally worked by family members. A major study by the HSE, Agricultural Blackspot: A study of fatal accidents (HSE, 1986A) conducted by the Agricultural Division of the HSE, identified that more people die in agricultural activities than do in mining. During the four years that the study was being carried out 300 people died.

People work in isolation often untrained for the work they are doing. They are exposed to climatic changes, chemicals, noxious substances, machinery, electrical sources, animals, specific disease and all the organisational pressures of conducting often a multi-million pound enterprise with little or no management training. There is also the attitude of distancing oneself from the potential of accident and risk, to contemplate it will just increase existing burdens. Although farmers will join together into co-operatives for workplace activities, i.e. apple growers co-operatives, this does not seem to be a consideration for health activities.

Another issue which now faces agriculture is the high number of casual employees and members of the public on agricultural premises (Bamford, 1985A). There is a need to safeguard these people from the activities and provide the same sort of care they could expect in any organisation covered by the Health and Safety at Work Act 1974.

The construction industry is perhaps more concerned with safety than with health issues, and this is reflected in the arrangements made in the work-place. However, a report by the HSE, Blackspot Construction (1988) analysed the circumstances of:

"739 deaths in the construction industry between 1981 and 1985.
They represent a very saddening loss of life, particularly because
MOST OF THE DEATHS COULD HAVE BEEN PREVENTED"
(HSE, 1988, p. 1).

The report highlighted that the basic causes of death had not changed over the previous ten years; people were failing to learn lessons from previous events. The three greatest killers were: maintenance (42%), transport and mobile plant (20%) and demolition and dismantling (13%). The largest number of deaths was caused by "falls" (383:52%), next came "falling materials/objects" (143:19%) with "transport/ mobile plant" the next largest at 137 (18%). Other causes of death included: "electrical hazards" (5%), "asphyxia/drowning" (3%), "fire/explosion" (2%), and finally a miscellaneous category at 1%. It is the general feeling in the report that many of these deaths could have been prevented by better management of sites, by pre-site planning, and communication and co-operation of all people involved in the construction process.

The 1990/91 annual report of the HSC (1991) identified that:

"the construction industry continues to have the highest fatal injury rate of any sector, 5 times higher than the rate in manufacturing and 10 times that for the service sector. About 1 in 8 of reported injuries are in the construction sector, even though it employs only 1 in 14 people" (p. x).

There are moves to improve this record; there has been a reduction of 25% in head injuries since the introduction of the Construction (Head Protection) Regulations. The problem in this industry is often one of attitude.

The Sample in Detail

The sample was drawn from fourteen different organisations spread across the West Midlands region (see table 1). The organisations represented in the sample were:

ORGANISATION 1: An Emergency Service Provider

This organisation provides a 24-hour, 7 day a week, 52 week per year service for emergencies in the community. The organisation is funded from local taxes and accountable through the normal democratic processes of local government within the West Midlands. Employees are based on 43 different sites around the West Midlands and a total of 2,500 people are employed, 2000 males and 500 females. The service is labour intensive with a considerable investment in equipment and machinery. The nature of the organisation is such that people can only gain promotion by working their way through the organisation. The majority of employees work a shift rotation system covering a seven day week. Work patterns are two days and two nights on, and then four days off. Some managers are also 'on-call' for emergencies during a 24 hour period. The organisation is highly disciplined with a very strong, formal hierarchy.

Occupational Health Staff

The Organisation employs two part-time doctors, one full-time and one part-time occupational health nurses, three safety advisors and this team is supported by first-aiders.

Employee Representation

The people employed in this organisation would belong to the main public sector trade unions. In the past strike action has been taken.

ORGANISATION 2: A Small Metal Components Manufacturer

Since this survey was completed, the organisation has disbanded its occupational health service; this was an economy measure. The main activity of the organisation is the manufacture of nuts, bolts and screws. The company employs 344 men and 97 women, and covers two sites. There is a shift rotation pattern covering a five day period; no week-end working.

Occupational Health Staff

The company did employ one part-time doctor and one full-time occupational health nurse. Now there is a first-aid service only.

Employee Representation

This industry has a long history in the West Midlands, and at one time was part of the very large organisation, GKN (Gest Keen & Nettleford), Ltd. There has always been concern for people employed in this industry in relation to noise exposure and, in the past, exposure to mineral oils with the associated potential for development of scrotal cancer. The trade unions were very active in getting the relationship between mineral oil and scrotal cancer recognised in this industry; also in fighting for improvements and benefits for noise induced hearing loss. The main trade union involved in this organisation is the Transport and General Workers Union. There are also specialist craft trade unions.

ORGANISATION 3: A Tyre Manufacturer

This organisation is an American owned company, having its head office in America and being part of a European division. Its major activity is the production of tyres. There is also a national network of tyre service and vehicle maintenance outlets which was not included in this survey. The company employs 4,000 men and 1,000

women. There is a pattern of shift rotation covering a seven day week. Employees are distributed over four different sites. Some people work only weekends, Friday to Sunday, 12-hour day shifts or 9-12 hour night shifts.

Occupational Health Staff

The company employs one part-time doctor, six full-time nurses, one occupational hygienist and one safety advisor.

Employee Representation

This organisations main trade union is the Transport and General Workers Union. The industry is very much linked to the transport industry and would be affected by fluctuations in those associated industries.

ORGANISATION 4: A Car Component Manufacturer

This organisation has closed since this survey was undertaken. It was part of a large multi-national motor manufacturer, employing 1,497 men and 163 women. The work activity was producing large components for the motor trade. The factory was very large and was sited on the edge of one of the regions' major cities. The organisation required both skilled and unskilled labour to work the formal work pattern of shift rotation (this was in 'good' times).

Occupational Health Staff

The organisation did employ a full-time senior occupational health physician, a part-time GP, a senior occupational health nurse as manager of the service and nurses who did the routine work of the service. There was a separate safety and occupational hygiene service.

Employee Representation

The main trade union represented would have been the Transport and General Workers Union. During the 1970's there was very strong trade union representation which resulted in many strikes and workplace disputes.

ORGANISATION 5: A Health Authority

This health authority serves the community in which organisation 10 is based. This is a mix of rural, city and urban developments. The authority carries out all the functions required of a health authority with the additional responsibility of a mobile population of 'travellers'. The service provided is a 24-hour, seven day a week, 52 weeks per year service, being the major focus for health care in the county. There are three major sites, and additional health centres, district offices and other clinics. The health authority employs men and women on a shift rotation basis, some people only work a straight day shift, 9 am - 5 pm.

Occupational Health Staff

The organisation employs one consultant in occupational health, three qualified occupational health nurses and supporting secretarial staff.

Employee Representation

This organisation is served by the main public sector trade unions of NUPE, COSHE, NALGO and specific professional trade unions.

ORGANISATION 6: A Local Authority Education Department

This service provides education for the school children in one of the largest counties in the West Midlands. The population of the county is 645,166 and employees in the education department number 25,000, 18,750 men and 6,250 women. The employees are spread across the whole of the county in some 680 schools. The service is offered during traditional education hours, Monday to Friday, 9-4 pm during term time. There are other activities; after school activities, field trips and activity holidays. Their service covers rural, urban and city areas.

Occupational Health Staff

The education department has access to the occupational health service which provides a service for the whole county. The service is provided by one occupational health physician, three qualified occupational health nurses and one safety advisor.

Employee Representation

The main trade unions involved in this organisation are the public sector ones of NALGO, NUPE and profession specific trade unions.

ORGANISATION 7: A Local Authority Property Services Department

This department looks after the property owned by the same local authority in which organisation 6 is based. The department employs the services of architects, surveyors, quantity surveyors and the support services to those activities. The department is based in a county town to the south of the county and staff travel to all parts of the county. The property services department provides a complete service on property for the county council, covering some 1,200+ buildings. Not covered in this survey are the 3,000+ cleaners employed throughout the county by the cleaning department which is based within the Property Services Department.

Occupational Health Staff

This department has the services of the occupational health staff as described in organisation 6, one occupational health physician, three qualified occupational health nurses and one safety advisor.

Employee Representation

As for organisation 6: the public sector trade unions, NALGO and NUPE, and profession specific trade unions.

ORGANISATION 8: A University

This university has a national and international reputation. It provides an educational experience for students across a wide range of faculties. Staff of all grades number 4,500, 2500 men and 2000 women. The working hours of staff can vary, and the campus services would be available from early morning to late evening to meet student needs. Academic staff could also be teaching/researching in the evening and at weekends with the current push for income generation. The university is sited in one of the major cities in the West Midlands.

Occupational Health Staff

This department is run by one part-time doctor and one full-time qualified occupational health nurse. There is secretarial support. This service is only for staff; students have a separate service to look after their health needs.

Employee Representation

The largest staff organisation is the Association of University Teachers. The main public sector trade unions involved are NALGO and craft specific trade unions.

ORGANISATION 9: An Electrical Components Manufacturer

This organisation is situated in one of the old well established industrial towns of the West Midlands, in the Black Country. The company manufactures electrical components and employs 606 people, 299 men and 307 women. The organisation works a five day week and is spread over four different sites. People generally work 8 am to 4:30 pm except one small sector which works a three shift system. Overtime is optional.

Occupational Health Staff

There is one part-time doctor, two nurses who cover separate shifts, one safety advisor and first-aiders.

Employee Representation

The main trade union involved in this organisation is the Transport and General Workers Trade Union.

ORGANISATION 10: A Porcelain Manufacturer

This organisation has a long history of producing quality products. It has an international market and like most organisations of this quality also has a considerable business in tourism. The organisation is situated in the south of the West Midlands, an area which is a mix of industrial, agricultural and service industries. The organisation is now very automated with most of the routine and repetitive work being done by

machines. There is still a proportion of the work which requires highly skilled technical and artistic work by individuals. The number of people employed by the organisation is 682, 398 men and 284 women. This number has reduced over recent years with automation and improved mechanisation. The organisation has one major production site in the West Midlands and a full range of activities are carried out from there. Employees work a straight day pattern with overtime to meet specific order demands. The health hazards associated with this industry have in the past created considerable hardship for employees and their families; these have included lead absorption, pneumoconiosis, dermatitis. A more recent problem brought on by the speed and nature of work is repetitive strain injury and muscular-skeletal problems.

Occupational Health Staff

The organisation employs one part-time doctor, a local GP, one part-time safety advisor and a full-time nurse.

Employee Representation

The main trade union involved in this organisation is the Ceramic Associated Trade Union and specialist craft trade associations.

ORGANISATION 11: A Metal Components Manufacturer

This organisation was part of a large multi-national company. Now it trades as a discrete company dealing with specialised metals. The organisation employs 250 people, 149 men and 101 women. The whole of this industry is reducing, the fabric of the metal process industry has changed considerably over the past 10 years. Imports and developments in technology and mechanisation have helped to bring about this change. The organisation has a shift rotation system, working on one site. The organisation works a five day week.

Occupational Health Staff

There is one full-time and one part-time doctor serving this company amongst others. There are two nurses, two hygienists, one safety advisor and one medical room

attendant. The occupational health service acts as a group service for a number of small firms on a large industrial site.

Employee Representation

The main trade union is the Transport and General Workers Union, with craftsmen being represented by their specialist unions.

ORGANISATION 12: A Chemical Manufacturer

This organisation is an old long-established company in the West Midlands. It is based in the Black Country on the edge of the Birmingham conurbation. The firm makes intermediates; these are substances which are used in the process of producing something else. The site is a major hazardous installation having many dangerous substances on site which could be explosive and inflammable. The organisation, for all its dangers, is situated in the middle of domestic dwellings, the company being there first; the housing was built around it. The company employs 3,200 people, 2750 men and 450 women. The organisation works a seven day system with shift rotation, and there are six separate sites. The shift pattern worked is 4 days on, 4 days off, 4 nights on, 4 nights off.

Occupational Health Staff

The occupational health staff consist of one full-time occupational health physician and five part-time doctors. Thirteen nurses are employed, one hygienist and one safety advisor. This organisation also employs a toxicologist, two dentists, three dental nurses, three opticians and three chiropodists.

Employee Representation

Not known

ORGANISATION 13. A Computer Manufacturer

This large international company is involved in the manufacture of computers and other electrical and electronic technology. Throughout the UK the company employs

some 15,000 people, but the figures for the West Midlands company could not be obtained. The organisation works from Monday to Friday, with most people working straight day shift and some people working rotating shifts. There are three sites throughout the UK.

Occupational Health Staff

At the West Midlands site there is one part-time doctor, two occupational health nurses, and one safety advisor.

Employee Representation

The main trade unions are the electrical unions, with craftsmen belonging to smaller specific trade unions.

ORGANISATION 14. A Catering Company

This company provides a service for organisation 13. It provides food and refreshment during the standard working day. The total number of employees on this site are 40, the gender mix is not known. Traditionally it would be expected that mainly women would be employed, and mainly on a part-time basis.

Occupational Health Staff

Using the service provided by organisation 13: one part-time doctor, two occupational health nurses, and one safety advisor.

Employee Representation

Not known.

From these fourteen organisations, a total of seventy employees were selected from each of the organisations (the exception being the catering firm, see table 1); five senior managers, ten middle managers and fifty-five operatives.

Standards for Protection of Subjects

From the initial approach to organisations requesting their participation in the research it was made clear that they, i.e. the researched organisation, would not have access to the original questionnaires, but only to general information on their organisation group to set against the broad general groups of other organisations who took part in the research. This was very important to emphasise if, for instance, a persons employment was dependant on a specific level of health. Although this questionnaire would not have given that sort of information, it is important to emphasise the confidential nature of the activity. Another aspect of this confidentiality was that the OHP did not have access to the questionnaires which were returned in a sealed envelope, and the researcher did not have access to the researched populations names.

Problems could have arisen in the area of ethics or moral issues, whereby people could have declared a health condition which was incompatible with their occupation. The difficulty would have been how to deal with that without breaking confidentiality and yet safeguarding the health and safety at work of that individual and his/her colleagues. In the event this was not an issue that the researcher had to address, but one of which she was only too conscious. Had information come to light which clearly identified an individual who was at risk, then discussion would have been held with the occupational health personnel. They would have been the most appropriate people to deal with the issue. This is not the researcher avoiding the issue, but rather using appropriate organisational channels to manage the process. Had difficulties occurred with the occupational health personnel's willingness to be involved, then the researcher would have discussed the issue with managers. Managers are responsible in law, and must be informed to allow them to manage properly.

The population for this survey would be identified as an apparently 'well' population, (Cartwright and Seale, 1990). None of the people sampled had the status of patient, which would have required the permission of an ethical committee for information to be collected and for individuals to be included in the survey.

The initial point of communication in the organisation was with the occupational health department, and the doctors and nurses employed there. Discussion was held with these professionals on the intention and direction of the research. The questionnaire was discussed, and the rationale for including the range of questions and the area of questioning. In some organisations this discussion also included a representative from the organisations' personnel department, the personnel department being involved in providing the names of people for the occupational health department from the payroll. In one organisation, the questionnaire and outline proposal also went to the Health and Safety Committee for approval and support.

Apart from one organisation, which was a health authority, none of the organisations had an ethical committee to consult. Even in the health authority it would not have been necessary, within the general guide-lines of ethical committees, to bring this research to that committee in that people elected to fill in the questionnaire or not depending on their own feelings.

The Medical Research Councils guidelines on research practice (1985) indicate that rights of people not to take part in surveys should be respected and an unreasonable number of repeat invitations avoided. Non-respondents were sent one reminder letter to take part in the survey, after that they were not troubled again.

There is also a view that the protection of subjects should extend to the community in which that research takes place (Strasser, 1989; Eyles & Donovan, 1990). This view is now being practised in most reliable qualitative research to safe-guard the trust placed in the researcher by the people and the communities or organisations who contribute to the study (Field & Morse, 1985). This element of confidentiality was not raised in discussion with representatives of the various organisations participating in the research. To maintain confidentiality the organisations will be referred to as organisations 1-14, but real names will not be used.

Management of Open Questions

The richness of the information in the open questions is important when assessing individuals perceptions. The individuality of the responses needs to be retained as well as identifying emerging themes in responses. The emerging themes will form the basis of future approaches in sharing health information with people who are at work.

There were five major open questions; these were:

Q23. Compare yourself to others of your age would you say your health is:
above average
average
below average,
Why do you think this is so?

Q24, 25, 26. Do you feel that your health has ever been affected for good or bad by any of the following? (Leisure activities; Work activities; The life you lead?) Please indicate the effect these activities have had on you.

Q58. What does the word health mean to you?

Apart from question 58, all the questions had a quantitative part to the question, the analysis of which is dealt with separately in the research analysis.

All the responses were entered on to an integrated software package called Q & A. This allowed for both numerical data and comments to be recorded, and for some simple manipulation to take place. For each response the following information was recorded: survey number, sex, response (numerical), and comments. The information was then sorted for questions 23, 24, 25 and 26, in order of the numerical response. Question 58 was managed in a different way as there was no numerical indicators to give any idea of values.

Responses to question 58 were analysed for their content. The comments were analysed again, and coded against those major themes. The codes were then counted to give trends within the major themes and to identify the predominant themes (Polit and Hungler, 1987). This method also allowed for organisational differences to be taken into account.

The process used was that described by Strauss and Corbin (1990) called open coding. They believe that breaking down the data into concepts is the first step in analysis:

"By breaking down and conceptualising we mean taking apart an observation, a sentence, a paragraph and giving each discrete incident, idea, or event, a name, something that stands for or represents a phenomenon" (p. 63).

The concepts or broad headings that are developed should emerge from the researcher or interpreters own frame of reference. Strauss and Corbin feel that the "use of borrowed concepts can have a grave disadvantage" (p. 68) in that borrowed concepts bring with them commonly held meanings and associations. People reading completed work could interpret them in a standard way or read particular meanings into the words. It could be that the researcher using this method could also put standard meanings to words, which could be restrictive and constraining. The concepts used are not fixed; it may be that as the researchers work progresses, further analysis allows for clearer understanding, and words can be changed.

Methods of Open Coding

Open coding can be used in different ways; there can be detailed analysis by close examination of phrases and/or words, coding by sentences or paragraphs, or by whole documents. The first method is the one to generate many ideas and thoughts; it can be used as part of a process to generate new ideas and direction for future work. It can also be very demanding and time consuming. The second method, using a whole sentence or paragraph, can be used to give a broad understanding of the basic concept contained in the words, which then allows for additional review to identify more detail.

The third method is to read a whole document, take a whole observation or interview, and look for analysis of the whole situation, identifying what is different, what is the same as in previous papers read, observations made, or interviews recorded.

Chapter 4

FINDINGS

Returns of Questionnaire

A total of 960 questionnaires were distributed and 463 returned. Four of these were un-usable leaving 459 (48%) to be included in the survey. The 48% response rate to this survey would fall midway between the 40-60% response rate expected in people who have no special interest in the subject matter of the questionnaire (Oppenheim, 1966). Oppenheim states that where people are more interested in the subject matter, an 80% return is rarely exceeded. In the pilot study there was an 87% response rate.

Returns of Questionnaire by Organisational Position

In table 5 the divisions are shown for the three categories of organisational position and the two sexes. It would have been expected that senior management posts could have been held by 5 people in 13 of the organisations and only one person in organisation 14, a total of 66 people. There was also the expectation that in each organisation except 14, ten people would have held middle managers roles, a total of 130 people. In each organisation (1-13), 55 people would have filled operative roles, with 39 people filling this role in organisation 14 for a total of 754 people, in all a total of 950.

Fifty-one people in the senior managers group (77%) responded (the highest return), 88 people (68%) in the middle managers group, and 316 (42%) in the operatives group. This return rate could relate to Calnan's (1988) view that control (therefore interest) is related to age, or social class. The lower response in the operative group (42%) may be as a result of this group including more people of lower intelligence or of limited educational background (Oppenheim, 1966). The overall return rate of 48% is varied when looked at across organisations. The highest return rate was from organisation 13, the electronics organisation, with 50 out of 70 questionnaires returned (71%). There was an 80% return from senior managers and middle

managers, and a 69% return from operatives. This was the highest return from operatives, but not for senior and middle managers. Organisation 2, the metal components manufacturer, was the next highest return, with 46 questionnaires (64%) returned, and organisation 1, the emergency service provider, a close third. In the senior managers group, organisations 5, 7 and 10 all had a 100% return, and in the middle managers group, organisations 1 and 4 had 100% returns. None of the operative groups had a 100% return.

Table 2: Organisation by Organisational Position by Returns

Organisation	Senior managers n=66	Middle managers n=130	Operative n=754	Total n=70 per org.
1 Emergency Service	4 (80%)	10 (100%)	27 (49%)	41 (59%)
2 Metal components	4 (80%)	7 (70%)	34 (62%)	45 (64%)
3 Tyre maker	2 (40%)	7 (70%)	11 (20%)	20 (29%)
4 Car components	3 (60%)	10 (100%)	23 (42%)	36 (51%)
5 NHS	5 (100%)	7 (70%)	24 (44%)	36 (51%)
6 LEA	3 (60%)	5 (50%)	26 (47%)	34 (48%)
7 LA Property	5 (100%)	7 (70%)	25 (45%)	37 (53%)
8 University	4 (80%)	5 (50%)	23 (42%)	32(46%)
9 Electrical components	4 (80%)	4 (40%)	20 (36%)	28 (40%)
10 Porcelain manufact.	5 (100%)	6 (60%)	29 (53%)	40 (57%)
11 Metal components	3 (60%)	7 (70%)	15 (27%)	25 (36%)
12 Chemical	4 (80%)	5 (50%)	12 (22%)	21 (30%)
13 Electronics	4 (80%)	8 (80%)	38 (69%)	50 (71%)
14 Catering	1 (20%)	0	12 (31%)	13 (33%)
No survey no.	-	-	-	1 (0.2%)
Total	51 (77%)	88 (68%)	316 (42%)	459 (100%)

The lowest return was from organisation 3, with only 20 questionnaires (29%) being returned (see table 2). This low return rate was as a direct result of its participants list being lost; reminder letters could not then be sent to people included in the sample. This lack of uniformity in returns from the different organisations raises issues of the sample sizes in the various organisations. In future studies it may be appropriate to take a proportion of employees as a direct ratio of the total workforce rather than 70 people per organisation. This could result in larger returns being made, which would improve the statistical significance of the returns and also allow for greater applicability to the working population as a whole. It is difficult to think of other methods which could be employed to improve return rates which were not intrusive and against the

MRC guidelines for good practice. Taking Oppenheim's argument of interest in the topic, it is interesting to compare the different rates of return between the organisations. Only two organisations exceeded a 60% response and yet an assumption could be made that a persons health is of interest, at least to that individual.

Gender

This sample consisted of 290 (63%) males and 165 (36%) females. Four people (1%) did not answer this question.

Organisation Distribution by Gender

Table 3: Return of Questionnaires by Gender and Gender Mix in Organisations

Org.	Org. Gender Mix Total			Returned Gender Mix			
	M	F	Total	M	F	No Resp	Total
1	2000 (80%)	500 (20%)	2500	37 (90%)	4 (10%)	0	41
2	344 (80%)	97 (23%)	431	39 (87%)	5 (11%)	1 (2%)	45
3	4000 (80%)	1000 (20%)	5000	20 (100%)	0	0	20
4	1497 (90%)	163 (10%)	1660	30 (83%)	5 (14%)	1 (3%)	36
5	-	-	-	13 (36%)	23 (64%)	0	36
6	18,750 (75%)	6,250 (25%)	25,000	3 (9%)	30 (88%)	1 (3%)	34
7	247 (70%)	104 (30%)	351	23 (62%)	14 (38%)	0	37
8	2,500 (56%)	2000 (44%)	4,500	18 (56%)	13 (41%)	1 (3%)	32
9	299 (49%)	307 (51%)	606	20 (71%)	8 (29%)	0	28
10	398 (58%)	284 (42%)	682	22 (55%)	18 (45%)	0	40
11	149 (60%)	101 (40%)	250	20 (80%)	5 (20%)	0	25
12	1750 (86%)	450 (14%)	3200	11 (52%)	10 (48%)	0	21
13	-	-	-	32 (64%)	18 (36%)	0	50
14	-	-	-	1 (8%)	12 (92%)	0	13
No number	-	-	-	1 (0.5%)		0	1
Total	32,934 (75%)	11,256 (25%)	44,190	290 (63%)	165 (36%)	4 (1%)	459

Organisation 3 had no female responses in this sample. Organisations 5, 6 and 14 were the only organisations to have a predominately female workforce (see table 3).

Working Populations in West Midlands

The West Midlands Region Health Authority has 3,151,420 people in the age range 16-64 years; this is made up of 1,645,434 men (52%) and 1,505,986 females (48%) (OPCS, 1992). This means that men are over represented in this survey at 63% and women are under represented at 36%.

Females in this population seem to be working in the traditional fields of work, that is health (organisation 5), education (organisation 6), and catering (organisation 14).

There is a slightly more equitable distribution in organisation 8 and organisation 12 (see table 3). However, when these sex distributions are looked at in relation to the sex distribution in the sample organisation, a different picture emerges. The sample in organisations 4, 7, 8 and 10 are the nearest matches to the organisations population distribution as a reality (see table 3).

Age

The age range in this survey is given at Table 4:

Table 4: Survey Sample by Age Group

Age	Male (n=290)	Female (n=165)	Total (n=459)
16 - 24 yrs	23 (8%)	20 (12%)	43 (9%)
25 - 34 yrs.	59 (20%)	40 (24%)	99 (22%)
35 - 44 yrs.	92 (32%)	48 (29%)	140 (31%)
45 - 54 yrs.	71 (24%)	46 (28%)	117 (25%)
55 - 64 yrs.	43 (15%)	9 (5%)	52 (11%)
No response (sex)	2 (1%)	2 (1%)	4 (1%)
No response (age)			4 (1%)
Totals	290 (63%)	165 (36%)	459 (100%)

It would appear from the age distribution in the returned questionnaires that younger workers and older workers are under represented in the sample. This may be a feature of 'interest', young people are not as interested or concerned for their health as people in their middle years. The people in the 55-64 age group may now be under

represented in the workforce population. In some organisations when a reduction in workforce is required, it is usual to ask for volunteers. People who reached a certain age, i.e. 50+ years and have a good number of years in an occupational pension plan can be persuaded to take early retirement by being offered various packages; this can include additional pension years. For many people this becomes a gift they cannot refuse.

There is no more structured way of describing the age profile through this sample than to say these are the ages of the people who responded. There is no way of knowing the age range of the people who did not respond.

Organisational Position by Gender

Organisation 3 did not have any females represented in its responses. Organisations 2 and 9 did not have any females in the senior and middle management groups.

Organisations 1, 4, 7, 11 and 13 did not have any females represented in the senior management groups. Organisations 6 and 14 did not have any male representatives in the senior and middle management groups.

Table 5: Organisational Position by Gender

Org.	Senior manager			Middle manager			Operatives			Total
	M	F	Total	M	F	Total	M	F	Total	
1	4	0	4	8	2	10	25	2	27	41
2	4	0	4	7	0	7	28	5	33	45
3	2	0	2	7	0	7	11	0	11	20
4	3	0	3	10	0	10	17	5	22	36
5	1	4	5	4	3	7	8	16	24	36
6	0	2	2	0	5	5	3	23	6	34
7	5	0	5	6	1	7	12	13	25	37
8	3	1	4	4	1	5	11	11	22	32
9	4	0	4	4	0	4	12	8	20	28
10	4	1	5	5	1	6	13	16	29	40
11	3	0	3	6	1	7	11	4	15	25
12	2	2	4	3	2	5	6	6	12	21
13	4	0	4	7	1	8	21	17	38	50
14	0	1	0	0	0	0	1	11	12	13
No no.										1
Totals	39 78%	11 22%	50 11%	71 81%	17 19%	88 19%	179 57%	137 26%	316 69%	459

Women are under represented in all organisational positions, constituting 22% of senior managers, but only in six of the fourteen organisations. Women as middle managers constitute 19%, in nine of the fourteen organisations. Even in the group where it would be expected that women would be more evenly represented, the operative group, they only represent 26% of operatives.

In a recent national survey (NEDO/RIPA, 1991), it was identified that women make up 43% of the workforce nationally, but are under represented in managerial posts: 27% of managers; 4% of senior managers and 1% of senior executives. This survey resulted in the launch of Opportunity 2000; this is a business led campaign to "increase the quality and quantity of women's participation in the work force." (p. 20).

When comparing the national figures to the figures in this survey, the position of women in senior managers posts is better than could be expected, and lower than could be expected in the middle managers group. There is no way of knowing if similar titles, job titles, roles and functions were used.

Marital Status

Seventy three percent of the sample (335) were married or living as married with their partner. Seventy one people (15%) were single, three (1%) were widowed and 17 (4%) were divorced or separated. Of the people who were married or living as married, 267 (80%) had a partner who was also employed, leaving 68 people whose partner was not employed. In four instances (6%) the major wage earner was female. This could be that their partner had retired, was unemployed or had a long term sickness.

Where both partners are working in a family there are both benefits and deficits. The extra money that is brought into the household is useful. At one time many women worked to provide holidays and extras for the family. Now women work out of necessity to support the home and family. When a woman has a career it is realistic

that she should continue to work following marriage and childbirth. Difficulties arise with the lack of child care facilities on a national basis. The extended family is no longer available to support working mothers; indeed many 'grandmothers' are themselves busy pursuing their careers.

Marital Relationships and Health

In this sample, ten women (6%) and nine men (3%) were divorced or separated from their partner. Only one person felt they were unhealthy and that their health was below average. Seven other people felt they were healthy but that in comparison with others of their age their health was average. The remaining eleven people felt healthy and that their health was above average.

Only three people made comments which related to their marital position in a less than positive way; these were:

"Because I have been a one parent family with three children for 16 years, and feel that this has had an effect on me" (0951)

"Domestic problems and associated pressures" (0905)

"Drinking too much during recent separation" (0138)

These comments were made in relation to the question on life-style; all three scored '4' ('poor') or '5' ('bad'). The coding in brackets refers to the organisation that the person works in, i.e. 09 is organisation 9, the electrical components factory. The last two numbers refer to the persons position in that organisation: 01-05 is senior managers, 06-15 is middle managers and 16-70 means operatives.

Income

The income levels were asked for on the basis of a family unit, this being more meaningful than asking for an individual's personal income which would not necessarily give an indication of a families ability to function in today's society (see table 6). Thirty-nine people (8%) did not respond to this question and 32 people (7%) did not know the joint income of their household. Of the 32 people who did not know

the joint income of their household, ten were married or living as married women and eight were men. Twenty people (4%) said their joint family income was less than £150.00 per week. Of these, seven (2%) were married, and of these seven, four people (1%) had child dependants. Three of the four lived in council accommodation and one lived in private rented accommodation. This is a small proportion of the sample, but it is probable that these families have a lower income whilst working than some families have whilst unemployed.

Table 6: Joint Gross Family Income Per Week

Income	
Less than £150 (1)	20 (4%)
£150 - £250 (2)	84 (18%)
£250 - £350 (3)	96 (21%)
£350 - £450 (4)	76 (17%)
£450 + (5)	112 (24%)
Do not know (6)	32 (7%)
No response (7)	39 (8%)
Total	459 (100%)

All the people responding to this question were in employment, and from that point of view it could be argued that these people will not be affected by economic arguments associated with unemployment. An analysis of family income within this group gives an indication of possible disposable income, and highlights the fact that some people in employment do not have large amounts of disposable income and could be financially disadvantaged in society.

There are many families who live on very low incomes and are in employment. Low income would be a factor in relationship to health. There has been a long history of people at work who have been paid such low wages that they experienced poverty. In 1795, in Speenhamland, a system of relief was implemented,

"Towards the end of the eighteenth century there was a steady decline in the rates of wages paid to agricultural labourers, who were at the same time faced with advancing food prices and with the loss of their textile work. Their plight became desperate, and a system of supplementing wages by grants of money from the funds for the relief of the poor was evolved." (Southgate, 1965, p. 175)

Today we have a grant paid to families with low incomes, supporting people in employment who do not earn enough to sustain their families by paying them State benefits.

Table 7 shows the distribution of income by the work that people did. In each category of job done the highest number of peoples earnings is shown.

Table 7: Income by Job Done

CODOT	Less than £150	£150 -250	£250 -350	£350 -450	£450 +	Do not know	No Resp	Total
1	0	0	0	1	10 (91%)	0	0	11
2	0	1	4	3	15 (58%)	2	0	26
3	2	6	11	12	34 (49%)	2	2	69
4	0	1 (25%)	0	3 (75%)	0	0	0	4
5	1	4	11 (28%)	11 (28%)	8	0	4	39
6	0	2	7	10	27 (51%)	0	6	53
7	4	11	12 (21%)	8	8	9	5	57
8	0	2 (66%)	1	0	0	0	0	3
9	1	8	8	8 (27%)	4	1	0	30
10	5	7 (37%)	2	0	0	5	0	19
12	0	2	3 (38%)	2	0	1	0	8
13	0	8 (38%)	5	3	0	1	4	21
14	4	27	29 (29%)	14	5	9	12	100
15	1 (20%)	1 (20%)	1 (20%)	1 (20%)	0	0	1 (20%)	5
17	0	3 (75%)	0	0	0	1 (25%)	0	4
18	1	0	1	0	1	2 (28%)	2	7
19	1	2	0	0	0	0	0	3
Totals	20 (4%)	85 (18%)	95 (21%)	76 (17%)	112 (24%)	32 (7%)	36 (8%)	459

In the Classification of Occupations and Directory of Occupational Titles (CODOT) group 1, ten people (91%) had a family income of £450+ per week. These are people

in managerial occupations. The next highest percentage is in CODOT group 4, literary artistic and sports, with 75% of this group earning £350 - £450 per week as a household. However, this percentage only includes three people, this group being quite small. The next highest percentage is in CODOT group 2, professional occupations supporting management and administration with 58% of people in the category earning £450+ per week as a household. The next highest is CODOT group 6, management (excluding general management), with 51% of these people earning £450+ per household. In CODOT group 14, which is the largest represented group, only 5% of people earn £450+ per household, with the highest percentage in this CODOT group being 29% for people who earned £250-£350 per household per week.

Table 8: Income by Organisations

Org.	No Resp	Less than £150	£150-250	£250-350	£350-450	£450+	Do not know	Total
1	0	0	7 (17%)	10 (24%)	12 (29%)	11 (27%)	1 (2%)	41
2	4 (9%)	2 (4%)	10 (22%)	14 (31%)	1 (2%)	10 (22%)	4 (9%)	45
3	3 (15%)	0	2 (10%)	2 (10%)	8 (40%)	4 (20%)	1 (5%)	20
4	5 (14%)	1 (3%)	10 (28%)	12 (33%)	5 (14%)	2 (6%)	1 (3%)	36
5	1 (3%)	6 (17%)	5 (14%)	11 (31%)	2 (6%)	11 (31%)	0	36
6	0	0	3 (9%)	6 (18%)	2 (21%)	16 (47%)	2 (6%)	34
7	1 (3%)	1 (3%)	7 (19%)	4 (11%)	11 (30%)	10 (27%)	3 (8%)	37
8	3 (9%)	4 (13%)	3 (9%)	3 (9%)	4 (13%)	13 (41%)	2 (6%)	32
9	5 (18%)	1 (4%)	5 (18%)	5 (18%)	0	5 (18%)	7 (25%)	28
10	5 (13%)	2 (5%)	11 (28%)	8 (20%)	8 (20%)	4 (10%)	2 (5%)	40
11	2 (8%)	2 (8%)	4 (16%)	3 (12%)	6 (24%)	6 (24%)	2 (8%)	25
12	2 (10%)	1 (5%)	4 (19%)	5 (24%)	2 (10%)	6 (29%)	1 (5%)	21
13	7 (14%)	0	7 (14%)	11 (22%)	9 (18%)	14 (28%)	2 (4%)	50
14	1 (8%)	0	6 (46%)	1 (8%)	1 (8%)	0	4 (31%)	13
Total	39 (8%)	20 (4%)	84 (18%)	95 (21%)	76 (17%)	112 (24%)	32 (7%)	459

Table 8 shows the income of families by the organisations in which they were surveyed. The highest percent overall was 47%; this was for people earning £450+ per household per week and related to people in organisation 6, the Local Education Authority. Remembering that this organisation had 88% females in its sample, this could be a result of both partners working and contributing to the household.

The next highest percentage is 46% in organisation 14, the catering organisation. This workforce was predominately female (92%). The earning category for this 46% was £150-£250 per week per household, not a large sum. There are a large proportion of part-timers in this organisation, 71%. All these part-timers are women, who are probably supplementing the family income by taking on this work rather than seeking to pursue a career.

Null Hypothesis: There is no statistically significant association between gender and income.

Table 9: Income by Gender

	Less than £150	£150-250	£250-350	£350-450	£450 +	Do not know	No Resp	Total
Male	10	50	66	52	79	13	0	270
Female	10	34	30	23	33	19	1	150
Total	20	84	96	75	112	32	1	420

$$X^2 = 15.8; \text{ d.f.} = 6; p = < 0.01$$

A X^2 of 15.8 with 6 degrees of freedom has a probability of less than 0.01, and the null hypothesis is not accepted. This strongly suggests that there is a statistically significant association between gender and income. The likelihood of a X^2 as big as 15.8 occurring by chance is less than 1/100; small numbers in some cells suggest the need for caution in interpretation. Residual analyses were performed on the data, with the females who did not know the joint income of their household being statistically significant at the .05 level. This could be young single women who would not know their parents income, or it could be older married women who did not know this information. Some families do not share all the money coming into the household, the

man of the house giving his wife house-keeping money with which to manage the house.

The X^2 test shows there is a difference between gender and income. Men in this sample earned significantly more than women, based on the assessment of household income. Whilst acknowledging that women are in mainly part time occupations and more men are in full-time, senior posts, the question asked was about household income, not individual income. More work would need to be done with individuals to gain a family picture in relation to income to try to resolve the issues surrounding this area. The test has highlighted a strong gender issue which cannot be ignored.

Education

It is acknowledged that education can affect many aspects of a person's life. Blaxter (1990) found evidence that

"suggests that education is certainly relevant, but more because better education is associated with general differences in patterns of life than because discrete parts of a lifestyle can be changed" (p. 243).

Handy (1989) argues that there is a need for life-long education, that our education system needs to be 're-invented' if it is to meet the future challenges. The argument between health and education is usually demonstrated through poverty and social class (Townsend, 1979), in that a person who has low earning capacity, probably through lack of education, holds a lower level job and is not as healthy or health conscious as a person in a higher level, better rewarded job.

Table 10: Educational Experience by Gender

Type of education	Men (n=290)	Women (n=165)	Total (n=459)
16 years	185 (64%)	90 (55%)	275 (60%)
18 years	48 (17%)	28 (17%)	76 (17%)
College	74 (26%)	56 (34%)	130 (28%)
Polytechnic	28 (10%)	14 (8%)	42 (9%)
University	39 (13%)	24 (15%)	63 (14%)
Other	14 (5%)	6 (4%)	20 (4%)

In this survey, the highest proportion of men, 185 (64%), and women, 90 (55%), left school at 16 years or before, a total of 60% (see table 10).. They may have gone onto further education; 57% of women had been to college, polytechnic or university compared to 49% of men. Remembering that people could have responded to more than one category in this question, the next highest group was that of College attendance, an overall response of 130 (28%), with a higher proportion of women (34%) in this category than men (26%). If higher education is taken to be attendance at a Polytechnic or University, then a relatively small proportion of men, 67 (23%), in this sample had exposure to higher education. For women the number is 38 (23%), and women hold lower managerial positions in the workplace.

Hanney (1979) found a similar pattern in his study of people who left school early, in this case, between 13-15 years, of 60%, but only 12% who had had any full-time further education. A similar number of 64% was found in the pilot study for this main survey. In both the pilot study for this survey (26%) and the survey itself (51%), there was a higher attendance at higher education institutions than in Hanney's survey (12%). This may reflect the geographical positions of the survey, the time lapse between the surveys, the additional provision for higher education or the composition of the population; Hanney's sample included all age groups and this sample only included 16 - 64 year olds at work.

There is also the issue of changes in Government policy to consider. There is positive discrimination towards mature adults entering education, particularly women. There has been the development of 'access' courses which allow people who do not have formal educational qualifications entry to higher education.

Dependants

In relation to dependants, the highest group of dependants was children, with 155 men (53%) and 59 women (36%) having dependent children.

Table 11: Dependants by Gender

Dependants	Men n=290	Women n=165	Total n=459
Children	155 (53%)	59 (36%)	214 (47%)
Elderly	14 (5%)	12 (7%)	26 (6%)
Handicapped	3 (1%)	6 (4%)	9 (2%)
None	119 (41%)	93 (56%)	212 (46%)
Total	291	170	461

It is interesting that such a high proportion of this sample did not have dependants living near to them. Children would be expected, as dependants, and a higher proportion of men had dependent children than women. Men would probably have a partner who would share the child care arrangements with them. In all instances women had a higher level of responsibility than men, indicating that even when women are working, they still have the traditional care role in society.

When the figures for dependent children, gender and partner working are looked at, a slightly different picture emerges. Ninety-six men (33%) had dependent children and a partner who worked compared to 50 women (30%) who had the same circumstances. This means that 59 (20%) men with dependent children had a partner who did not work, compared to nine (5%) women.

Null hypothesis: There is no statistically significant association between gender and dependent children.

Table 12: Gender by Children

	Yes	No	Total
Male	155	131	286
Female	59	102	161
Totals	214	233	447

$$X^2 = 12.7; \text{ d.f.} = 1; p = < 0.001$$

A X^2 of 12.7 with 1 degree of freedom has a probability of < 0.001 , and the null hypothesis is not accepted. This strongly suggests that there is a statistically significant association between gender and dependent children. The likelihood of a X^2 as big as 12.7 occurring by chance is 1/1000. Residual analyses were performed

on the data with the females with dependent children being statistically significant at the .05 level. This figure is lower than would be expected, and could indicate that it is difficult for women to work who have children to care for. Further analysis would need to be done to identify if these women were married or single, full-time or part-time and if their partners worked.

Home Ownership

Of the people who responded to this question, 379 (83%) were owner-occupiers, 24 (5%) were in Council rented property. Seventeen people (4%) were in private rented accommodation and six people (1%) were in other accommodation; from this survey there is no way of knowing what that was. In the CSO, Regional Trends 26 (HMSO, 1991), the housing stock of the West Midlands is listed as 2,065,000. The figures for 1989 are given as follows:

Table 13: Home Ownership

	CSO (1989)	This sample
Owner Occupier	67%	83% (379)
L.A. Rented	25%	5% (24)
Private Rented	6%	4% (17)
Other	3%	1% (6)
No Response		7% (33)

When comparing this sample to the regional norms, this sample would seem to be advantaged.

Table 14: Income by Home Ownership

	No Resp	Less than £150	£150-250	£250-350	£350-450	£450 +	Don't know	No resp.	Total
Owner occupy	27 (7%)	9 (26%)	69 (17%)	86 (21%)	73 (18%)	111 (27%)	28 (7%)	1 (0.2%)	404
Council	3	5	8	8	2	0	2	0	26
Private rented	3	4	7	7	1	1	1	0	19
Other	1	2	0	0	0	0	1	0	6
No resp	4								4
Totals	38	20	84	96	76	112	32	1	459

When this sample is looked at in relation to income and housing the following pattern emerges (see table 14). The highest home ownership is in families who earn £450+ per week, 111 (27%) of this group of home owners. The lowest is in the group earning less than £150 per week, with 21% of owner occupiers earning £250-350 per week.

In this sample, a much higher proportion of people held owner occupier status than in the national census. The two figures for council rented (4%) and private rented (1%) accommodation are nowhere near the census figure of 31.2% and 13.2% respectively. These figures do not alter dramatically when looked at in relation to the West Midlands as a whole, these being 32.2% and 10.4%, respectively (OPCS, 1983).

It would seem that this population is particularly advantaged having a higher than average owner occupier rate and a lower than average council and private rented rate. These figures must be viewed in relation to the changes which have gone on in the housing market, the bulge in building for the private sector during the 1980's, and the age range of the sample population. A large proportion are in the mid-life range, and this age group would see home ownership as a sensible and desirable thing to do.

Transport

Of the people who responded to this question 221 (49%) had access to one car in the family, 163 (37%) had access to two cars and 33 (7%) had access to more than two cars; 37 (7%) did not have access to a car within the family.

Table 15: Available Transport

One car	221 (48%)
Two cars	163 (36%)
Two + cars	33 (7%)
No car	37 (8%)
No response	5 (1%)
Total	459 (100%)

When this group is looked at for car ownership in relation to income, the following pattern emerges (see table 16).

Table 16: Car Ownership by Income

	No resp	Less Than £150	£150-250	£250-350	£350-450	£450 +	Don't know	No resp	Total
One car	18	9	53	64 (30%)	37	26	13	1	221
Two cars	13	0	13	24	36	66 (40%)	11		163
Two + cars	0	1	1	4	2	19 (58%)	6		33
No car	3	10	17 (46%)	4	1	0	2		37
No resp	4					1			5
Totals	38	20	84	96	76	112	32	1	459

Only the highest percentages of car availability are shown in this table. In the one car category, 30% (64) of car ownership was in the £250-£350 category. In the two car category the highest percentage of ownership was in income category £450+ per week, with 40% (66) of earners. In the two+ car category, 58% (19) of the group were also in the £450+ category. The people who had no cars had the highest number in income category £150-£250 per week, with 17 (46%) people not having access to a car.

Many of the people in this sample walked to work, but it may be with the recession and in many areas the closing of places of work, people are having to travel further to get work. Public systems would also have difficulty in providing for people who have to visit more than one site during the course of their work, often on a daily basis.

The question was posed as cars available in a household; when comparing this to the census, the following results emerge:

Table 17: Cars per Household by 1981 Census

	UK	West Midlands	Survey population
One car per household	45%	46%	49%
Two cars per household	13%	14%	37%
Three cars per household*	2.3%	2.4%	7%

* The question was put in the questionnaire as having access to more than two cars in a household.

In all instances the survey population had a higher percentage than both the national average and the regional average. There is a dramatic increase in the two car plus household. Again this may reflect a span of ten years from the collection of the census data, or reflect greater affluence amongst the surveyed population than the general population. When looking at the provision of cars in relation to the CSO Regional Trends (CSO, 1991), the picture is even more optimistic for people in this sample:

Table 18: Cars per Household in West Midlands in 1988

	CSO	This sample
One car per household	43%	49%
Two Cars or more per household	22%	44%
No cars	35%	7%

Do People Who Work Feel Healthy? (Research Question 1)

People at work in the main, saw themselves as healthy. Four hundred twenty four people (92%) responded positively to the question, "Would you describe yourself as a healthy person?" Thirty-three people (7%) felt they were not healthy and two people (0.4%) did not respond. One each of the men and women gave a score of one for the question which asked them to consider their health in relation to others of a similar age; this could have been a mistake. Two hundred sixty eight men (92%) and 153 women (93%) felt they are healthy.

"The health of the UK's population has never been better." (The Faculty of Public Health Medicine of the Royal College of Physicians, 1991)

This report then goes on to acknowledge that health services themselves do relatively little to effect an improvement in the health status of UK populations. A much greater contribution is made by the management of environmental factors such as housing, traffic and employment, and behavioural factors such as smoking, diet and alcohol consumption.

Table 19: Health by Gender

Feel Healthy	Male	Female	No response	Total
Yes	268 (92%)	153 (93%)	3 (1%)	424 (92%)
No	22 (8%)	7 (2%)	0	33 (7%)
No response		1 (0.2%)	1 (0.2%)	2 (0.4%)
Totals	290	165	4	459 (100%)

Hanney (1979) found that his sample of Glaswegians considered their health in slightly different categories; 27% felt their health was perfect, 43% good, 22% fair, 5% poor with 2% feeling their health was very poor and 1% not having an answer to this question. This could be looked at in a similar way with the employed sample:

Bamford	Hanney
Above average = 34%	Perfect = 27%
Average = 58%	Good + Fair = 65%
Below average = 7%	Poor + very poor = 7%

The differences are not that great; Hanney's sample covered a wider age range. It is interesting that both groups had a similar score for the negative element of the response. This was also the same percentage as in the pilot study.

Blaxter (1990), in her study of health and life styles, found that 71% of her respondents defined their health as at least good. The categories they had to choose from were 'good/excellent' and 'fair/poor'.

Reasons For Not Considering Themselves to be Healthy

When the conditions are looked at for why people felt they were unhealthy, only a small number emerge. Only 21 of the 33 people gave a reason for feeling unhealthy.

Table 20: Reasons Given for Not Feeling Healthy by ICD and Gender

ICD Group	Male	Female	Total
2) Neoplasms	1	1	2
3) Endocrine	2	0	2
5) Mental	1	1	2
6) Nervous system	0	1	1
7) Circulation	6	1	7
8) Respiratory	2	0	2
9) Digestive	3	1	4
13) Musculoskeletal	1	0	1
No gender			4
No response	0	0	8
Totals	16	5	33

The main reason that people felt they were unhealthy was for conditions of the circulation system. This was a very small proportion of the sample, 7 people (21%),

six men and one woman. Twelve people (36%) gave no reason for their feelings of not being healthy.

When this group of people are compared with the working class mothers in Pill and Stott's sample (1982), the largest group to emerge are those that used life-style as a means of explaining their health. It can be seen that this understanding related to positive health, i.e. 100 (65%) of the above average health group (n=155) and only five (38%) of the below average health group (n=13). When taking the two groups together the percentage for life-style is roughly equal at 40% and 42%; a similar pattern emerges for individual susceptibility with 12% and 13%.

Table 21: Health Average by Cause of Health/Ill-health compared to Pill and Stott (1982) categories (People could have responded to more than one category):

	Pill & Stott n=297	Above average n=155	Average n=287	Below average n=13	Total n=455
Germ theory	178 (60%)	38 (25%)	53 (18%)	5 (38%)	96 (21%)
Life-style	118 (40%)	100 (65%)	84 (29%)	5 (38%)	189 (42%)
Heredity	101 (34%)	1 (1%)	-	-	1 (0.02%)
Stress	59 (20%)	11 (7%)	9 (3%)	3 (23%)	23 (5%)
Environment	46 (15%)	3 (2%)	7 (2%)	2 (15%)	12 (3%)
Individual susceptibility	36 (12%)	7 (5%)	49 (17%)	1 (8%)	57 (13%)
Total	538	160	202	16	378 (83%)

Germ theory, or the medical model of describing health was used by 96 (21%) of the employed sample against 178 (60%) of Pill and Stott's sample. These authors argue that their female sample is probably referring to acute short-term illness in this way.

Comparison With Others of a Similar Age

When asked to compare themselves to others of their age, 155 (34%) felt their health was above average, 287 (63%) average, and 13 (3%) felt their health was below average. The three people who felt their health was below average were female (see table 22). Fifteen men and six women gave a score of 2, or average, to this question,

and six men and four women felt they were unhealthy and their health was below average when compared with others of a similar age.

Table 22: Health Perceptions in Relation to Others of a Similar Age by Gender

Feel Healthy	Above Average		Average		Below Average		No resp.	Total
	M	F	M	F	M	F		
Yes	95 (33%)	58 (35%)	173 (60%)	92 (56%)	0	3 (1%)		421 (92%)
No	1 (0.2%)	1 (0.2%)	15 (3%)	6 (1%)	6 (1%)	4 (1%)		33 (7%)
No response				1 (0.2%)			4 (1%)	5 (1%)
Total	96	59	188	99	6	7	4	459 (100%)

Ninety-five men (33%) and 58 women (35%) felt their health was above average; 173 men (60%) felt their health was average, and roughly half this figure for women, 92 (56%). None of the men who felt they were healthy also felt their health was below average. Of the people who considered themselves healthy, 68 (15%) were worried about their health, and 285 (62%) had worries and anxieties other than their health. Eighty-two of the people who considered themselves healthy (18%) had a permanent or long-standing illness, disability or infirmity.

Table 23: Reasons Given For Not Feeling Healthy by Health Average

ICD Group	Above Average	Average	Below Average	Total
2) Neoplasms	0	0	2	2
3) Endocrine	0	2	0	2
5) Mental	0	1	1	2
6) Nervous system	0	0	1	1
7) Circulation	0	6	1	7
8) Respiratory	0	1	1	2
9) Digestive	0	2	2	4
13) Musculoskeletal	0	1	0	1
No response	-	-	-	12
Totals	0	13	8	33

It seems that some people think of average positively and others think of it negatively. Listed below are comments which illustrate this point.

Positive comments

"I do aerobics and squash most weeks, and have a fairly active job and social life, I don't sit about all day." (1212)

"I'm not ill very often, only the usual colds, etc. I lead a very active life at work and at home." (0563)

"I can go to work, run a house and go on plenty of walks besides being on my feet all day and getting up a 5 a.m." (1420)

"I take tablets for high blood pressure and for Chrohns disease, but I still manage to play rugby and cricket." (0206)

Many people who responded in a similar vein, used 'ability to do' as a measure of healthiness or wellness; also the absence or control of a condition is seen as positive.

Negative comments

"Stress, looking after my father and visiting my mother" (1320)

"I tend to have an average life style, without keeping too fit these days." (0145)

"Sometimes I feel quite healthy, but a lot of the time I feel tired and sluggish and I'm quite prone to colds." (0728)

"Average because don't go out of my way to exercise, etc. Try to eat healthy, but I like my food." (1357)

The same concepts are used, but in a way that is negative rather than positive.

In both the groups the same ideas and standards are used; the important part is how they are applied.

It is very interesting in this sample to consider the comments that people made to support their numerical score of '2' for health being average when compared to others of a similar age.

Neutral comments

"I am not as fit physically as some people of my age, but I do not appear to suffer from the disabilities of others in the same group. I therefore consider myself to be of average health overall." (0259)

"Some people are obviously fitter, others less so, some with illnesses." (0252)

"Some people are better, some worse." (0906)

"I visit the doctors occasionally with health problems, the people I know of my age either live at the doctors or never attend, and compared to them I feel that I have an average life." (1146)

Neutral comments show that people do make comparisons and judgements and on the basis of these know that they are average.

In this sample, germ theory is the label given to people who use disease and ill-health to explain their health; for example:

"Feel good, suffer no colds, tummy bugs, etc. that others seem to get" (1360)

"Because so far I have not suffered from any illness" (0249)

This is different from the way that Pill and Stott (1982) use the term, but the underlying principle of illness occurrence is contained in the concept. Some people use the negative of the idea to explain their health, others use the positive:

"I have an active sporting lifestyle, which keeps me fit, but I am prone to minor illnesses, colds, etc." (0646)

"I have colds, aches and pains." (0646)

"Asthmatic, arthritis in knees, one kidney, lower back pain." (1130)

Saw Doctor

Table 24: Visit to Doctor

1-2 months	3-12 months	12+ months	No response	Total
147 (32%)	152 (33%)	155 (34%)	4 (1%)	459

The distribution of answers to this question is fairly equally distributed between the three groupings of 1-2 months (32%), 3-12 months (33%) and 12+ months (34%).

These groupings can be linked to Blaxters' (1985) rating of 1-2 months = high consulters, 3-12 months = average consulters and 12+ months = low consulters.

Blaxters' survey was a small-scale survey related to one general practitioner group and included age groups 18+; this would then be a wider age range than this sample of employees. Blaxter found that women were more likely to be high consulters than men, and that men of all ages were likely to be low consulters.

Table 25: Times of Seeing Doctor by Gender

	Male	Female	No response	Total
1-2 months	76 (26%)	70 (42%)	1	147 (32%)
3-12 months	94 (32%)	56 (34%)	2	153 (33%)
12+ months	117 (40%)	37 (22%)	1	155 (34%)
No response	3	2	0	5
Totals	290	165	4	459

Null hypothesis: There is no statistically significant association between gender and when people saw their general practitioner.

Table 26: Gender and Time of Visit to Doctor

	1-2 months (%)	3-12 months (%)	12+ months (%)
Male	17	21	26
Female	16	12	8
(N)	(146)	(150)	(154)

$$X^2 = 4.53; \text{ d.f.} = 2; p < 0.10$$

A X^2 of 4.53 with 2 degrees of freedom has a probability of < 0.10 , and the null hypothesis is not rejected. This suggests that there is no statistically significance in this X^2 .

Health Above Average

In the group who felt their health was above average, 43 people (10%) had visited their doctor during the previous 1-2 months; 46 people (10%) during the previous 3-12 months and 66 (14%) not at all during the previous twelve months.

Health Average

In the group who felt their health was average, 41 people (9%) had visited their doctor in the last 1-2 months, 36 (8%) during the last 3-12 months and 20 people (4%) not in the last 12 months.

Health Below Average

People in this group had a much lower attendance at their doctors. In the 1-2 months prior to filling in the questionnaire, seven (1.5%) had visited their doctor; three people

(0.6%) in this group had visited their doctor in the previous 3-12 months and three people (0.6%) not in the previous twelve months.

Visits to General Practitioner

Visits to GPs were given broad bandings of 1-2 months, 3-12 months and 12 months or more. There was a fairly even distribution of attendance across all three groupings when the figures are gender free; however when considered for gender a different picture emerges. Seventy women (42%) had been to see their GP in the past 1-2 months as opposed to 26% of men. This difference is also reflected at the other end of the scale with 40% of men not having visited their GP in the past year with only 22% of women being in this category.

The Royal College of General Practitioners, the OPCS and the DHSS have for the past 30 years carried out ten yearly surveys of morbidity in general practice (RCGP / OPCS / DHSS, 1986). Forty-eight sample practices in England and Wales were included. Information was collected for one year by doctors in the practices (143 principals). Each consultation (332,270 patients) was given a code and a level of severity: serious, intermediate and/or trivial. This explains why doctors refer to trivia in relation to consultations, not taking on board the view that if a person decides to consult a doctor, they, the patient, have decided they need to consult a doctor.

The sample of patients was largely similar to the national population in relation to age, sex and socio-economic composition. It is not possible to draw comparisons between the work done in the national survey and this population because the same information was not collected; also classification into serious, intermediate and trivial instances was not possible.

The trends in the RCGP / OPCS / DHSS (1986) survey can be explored in relation to the reasons for visits to GPs given in this survey of employed people. In the national survey the most common condition seen by GPs was respiratory disease with 16% of

all consultations being for this classification. This was also the highest classification in the employed sample with 93 (20%) of people stating this as their reason for visiting their GP. The national study found that:

"Patient consulting rates for these (musculoskeletal system and connective tissue) conditions have risen considerably from 1971/72 and 1955/56 studies. The 1981/82 rate of 132.8 compares with 91.2 and 86.8 in the two earlier studies respectively" (RCGP / OPCS / DHSS, 1986, p. 31).

Much of the increase in 1981/82 was due to a higher rate of back pain; this was 17.6 in 1971/72 and 32.8 in 1981/82. Only 52 people (11%) of the employed survey cited musculoskeletal reasons for seeing their GP. A direct comparison between the figures cannot be made, but 11% is a small proportion of this sample. In the national survey, all conditions had shown an increase.

Reason for Visit

Table 27: Conditions for GP Visits by ICD Classification and Gender

ICD Category	Males (n=290)	Females (n=165)	Total (n=459)
1 Infections	14 (5%)	6 (4%)	20 (4%)
2 Neoplasm	1 (0.3%)	5 (3%)	6 (1%)
3 Endocrine	5 (2%)	1 (1%)	6 (1%)
4 Blood	1 (0.3%)	2 (1%)	3 (1%)
5 Mental disorders	3 (1%)	1 (1%)	4 (1%)
6 Nervous system	23 (8%)	16 (10%)	39 (8%)
7 Circulation system	20 (7%)	5 (3%)	25 (5%)
8 Respiratory system	61 (21%)	32 (19%)	93 (20%)
9 Digestive system	18 (6%)	8 (5%)	26 (6%)
10 Genito-urinary system	5 (2%)	17 (10%)	22 (5%)
11 Pregnancy / childbirth	0	3 (2%)	3 (1%)
12 Disorders of skin	16 (6%)	12 (7%)	28 (6%)
13 Musculoskeletal system	40 (14%)	12 (7%)	52 (11%)
14 Congenital abnormalities	0	0	0
15 Perinatal period problems	0	0	0
16 Signs/symptoms-ill defined	2 (1%)	2 (1%)	4 (1%)
17 Injury & poisoning	5 (2%)	2 (1%)	7 (2%)
800 Fractures/dislocations	0	0	0
910 Superficial injury	4 (1%)	0	4 (1%)
100 Prevention	37 (13%)	24 (15%)	61 (13%)
No response	35 (11%)	17 (10%)	52 (12%)
No sex response			4 (1%)
Totals	290 (100%)	165 (100%)	459 (100%)

The highest number of visits to GP's by both sexes was for ICD category 8, disorders of respiratory system, with a total of 93 people (20%) seeing their GP with this condition. This was also the highest category for men and women separately.

The next highest category for women was 100. There is no category for prevention in the ICD groupings, so the number 100 was given to cover this category. This would include people visiting their GP for things like health checks, immunisations and vaccinations and for women, birth control. Twenty-four women (15%) visited their GP for this preventive activity; there was a slightly lower figure of 13% (37) for men. The second highest reason for men visiting their GP's was ICD category 13, disorders of the musculoskeletal systems; 40 men (14%) said this was the reason they had visited their GP.

The next two categories for women were ICD 10, genito-urinary systems, which would include gynaecological conditions with 17 women (10%) visiting for this reason; and ICD 6, nervous systems and sense organs, again with 17 women (10%) visiting. The third highest category for men was category 100, prevention. With the exception of birth control, the reasons for visiting GP's was the same as for women. Some women cited contraception as a medicine they were taking; others did not see this as a form of medicine, but rather a way of not getting pregnant.

Frequency of Visits to Doctor

In this sample, one third of the group (35%) had not visited their GP in the last twelve months and 110 (24%) had visited their GP only once during the last twelve months. In 1990 the average number of visits made by individuals of all ages to their GP nationally was five. Males of all ages made four visits per year and females, six visits per year. For males in the age range 16-64 years the national figure would be three, for females in this age range, 5.5 (OPCS, 1992). In this research sample 26% of the men and 9% of women had not seen their GP in the last twelve months; this totalled 35% of the sample (160). Only 1% of each sex made five visits in the last twelve months. The

highest percentage is for one visit in the past twelve months; this is 15% of men and 9% of women. It would appear from the data that there is a lower uptake of GP services amongst this employed population than is occurring nationally.

Table 28: Frequency of GP Visits in Last Twelve Months by Gender

No. of Visits	Male	Female	No response	Totals
None	118 (26%)	41 (9%)	1 (0.2%)	160 (35%)
1	68 (15%)	41 (9%)	1 (0.2%)	110 (24%)
2	50 (11%)	30 (7%)	1 (0.2%)	81 (18%)
3	22 (5%)	24 (5%)	-	46 (10%)
4	15 (3%)	8 (2%)	1 (0.2%)	24 (5%)
5	3 (1%)	5 (1%)	-	8 (2%)
6	5 (1%)	9 (2%)	-	14 (3%)
7	1 (0.2%)	1 (0.2%)	-	2 (0.4%)
8	2 (0.4%)	2 (0.4%)	-	4 (1%)
9	1 (0.2%)	-	-	1 (0.2%)
10	4 (1%)	2 (0.4%)	-	6 (1%)
11	1 (0.2%)	1 (0.2%)	-	2 (0.4%)
13	-	1 (0.2%)	-	1 (0.2%)
Totals	290 (63%)	165 (36%)	4 (1%)	459 (100%)

Table 29: Age by Gender by Visits to GP

Age	16 - 24		25 - 34		35 - 44		45 - 54		54 - 64		None	Total
	M	F	M	F	M	F	M	F	M	F		
No. visit	8	6	22	12	44	9	31	13	13	1	1	160
	35%	30%	38%	30%	48%	19%	44%	28%	30%	11%		
1	4	1	15	11	21	15	16	11	12	2	2	110
	17%	5%	25%	28%	23%	31%	23%	24%	28%	22%		
2	5	5	11	4	16	9	12	10	5	2	2	81
	22%	25%	19%	10%	17%	19%	17%	22%	12%	22%		
3	3	4	5	4	4	8	5	5	4	2	2	44
	13%	20%	8%	10%	4%	17%	7%	11%	9%	22%		
4	1	1	2	5	1	2	6	-	5	-	1	23
	4%	5%	3%	13%	1%	4%	8%	-	12%	-		
5	1/4%	1/5%	1/2%	-	-	2/4%	-	1/2%	1/2%	1/11%	-	8
6	-	-	1/2%	3/8%	3/3%	3/6%	-	2/4%	1/2%	1/11%	-	14
7	1/4%	-	-	-	-	-	-	1/2%	-	-	-	2
8	-	1/5%	1/2%	-	-	-	1/1%	1/2%	-	-	-	4
9	-	-	1/2%	-	-	-	-	-	-	-	-	1
10	-	-	-	1/3%	3/3%	-	-	1/2%	1/2%	-	-	6
11	-	-	-	-	-	-	-	-	-	-	-	0
12	-	-	-	-	-	-	-	1/2%	1/2%	-	-	2
13	-	1/5%	-	-	-	-	-	-	-	-	-	1
Total	23	20	59	40	92	48	71	46	43	9	8	459

Because of the broader bandings of the OPCS data it is difficult to draw comparisons for all numbers of visits. However, 101 people (63%) aged 16-44 years made no visit to their GP in the last twelve months compared to four visits amongst the national population. For the age range 45-64 years, 58 people (36%) had not made a visit to their GP in the last twelve months (OPCS, 1992).

Disabilities

Ninety-six people (21%) in this sample identified that they had a permanent or longstanding illness, disability or infirmity, 64 men (22%) and 32 females (19%).

Table 30: Classifications of Permanent or Longstanding Illness, Disability or Infirmity

	Males	Females	Totals
xiii. Musculoskeletal	15 (5%)	13 (8%)	28 (6%)
viii. Respiratory	12 (4%)	5 (3%)	17 (4%)
vii. Heart and circulation	10 (3%)	6 (4%)	16 (3%)
ix. Digestive	9 (3%)	1 (1%)	10 (2%)
vi. Nervous	10 (3%)	1 (1%)	11 (2%)
iii. Endocrine/ metabolic	3 (1%)	1 (1%)	4 (1%)
x. Genito-urinary	1 (0.3%)	3 (2%)	4 (1%)
xvii. Injury or poison	2 (1%)	1 (1%)	3 (1%)
xii. Skin conditions	1 (0.3%)	1 (1%)	2 (0.4%)
ii. Neoplasms	1 (0.3%)	0	1 (0.2%)
Sub total	64 (22%)	32 (19%)	96 (21%)
No response	226 (78%)	133 (81%)	359 (78%)
No sex response			4
Totals	64 (22%)	32 (19%)	459 (100%)

Conditions recorded included the following major categories:

Category xiii, Musculo-skeletal systems

A total of 28 people recorded a condition in this broad category, 15 men and 13 women. The largest sub-group for both sexes was the group which included 'joints/discs and spines'; conditions fitting into this category included ten women and seven men. Other conditions recorded included rheumatism, arthritis, spondylitis and cartilage and muscular problems.

Category viii, Respiratory systems

The conditions mentioned by people in this category were all allergy related conditions.

Ten people said they had asthma, four had hay fever, and three people said they were 'chesty' or allergic to cats, house dust etc.

Category vii, Heart and circulation systems

Ten people said they had raised blood pressure or hypertension, five had a cardiac condition or angina, and one person quoted raised blood cholesterol as their long-standing condition.

Category ix, Digestive system

Four people listed an ulcer as their condition, the same number listed conditions of the large bowel, ulcerative colitis, reversed colostomy. Two people had a hernia.

Category vi, Nervous system

Three people had glaucoma, the same number had deafness, two people had epilepsy and one person had visual difficulties; other conditions included nasal rhinitis and sinusitis.

The other conditions listed included 'female conditions' in category x, genito-urinary systems, and three men with diabetes in category iii, Endocrine and metabolic systems.

There is a requirement placed on all workplaces to employ as part of their workforce a percentage of people who are registered disabled. The quota is set at 3% of a workforce. There are certain occupations which are specified and protected for people with a disability; these are lift attendant and car park attendant. Very few lifts are now attended and most car parks are 'pay and display'.

The opportunities to employ people with disability are considerable. The Department of Employment is very supportive to employers and employees alike, offering modification to environments, structures and equipment in the workplace.

In 1988 the General Household Survey (GHS) collected information on

"the types of chronic or long-standing conditions reported by informants who said they had a long-standing illness" (OPCS, 1988, p.61).

The GHS reported 33% of males and 34% of females as having a long-standing illness, with a slightly raised level in females of all age groups except children. The pattern of long-standing illness followed that of most of the literature on the topic, highest incidence in lower socio-economic groups and the reverse in higher groups.

In the GHS the question was posed at two levels; if a long-standing illness, disability or infirmity was present, and whether this limited the respondents activities in any way. This second part of the question was not asked in this survey, but inferences can be drawn from the answers given to other questions. Also the people in this sample are at work, and although their condition may prevent or limit activity in some areas of life, it is not sufficiently limiting to stop their attendance at work.

It may be that during a time of recession, people with existing health conditions have been retired on 'health grounds'. This would probably be accommodated financially by the organisations insurance scheme, and may be seen as a 'cheaper' way of reducing the workforce than redundancy. It would also mean enhanced benefits for the individual concerned, and on that basis could be attractive.

Null Hypothesis: There is no statistically significant association between peoples' perception of the effect of work on their health and their instance of permanent or longstanding illness, disability or infirmity.

Table 31: Effects of Work on Health by Disability

	Good effect	Fair effect	No effect	Poor effect	Bad effect	Total
Disability	8	21	13	29	17	88
No disability	50	73	112	96	15	346
Totals	58	94	125	125	32	434

$$\chi^2 = 31.3; \text{ d.f.} = 4; p < 0.001$$

A X^2 of 31.3 with 4 degrees of freedom has a probability of 0.001, and the null hypothesis is not accepted. This suggests that there is a statistically significant association between peoples' perception of the effects of work on health and the instance of longstanding or permanent illness, disability or infirmity. The likelihood of a X^2 as big as 31.3 occurring by chance is less than 1/1000. Residual analyses were performed on the data, with disability by no effect being statistically significant at the .05 level; which was lower statistically than expected. This response could be for a variety of reasons. It may be that the people in this cell do not see their disability relating to work and therefore work has had 'no effect'.

Permanent or Longstanding Illness, Disability or Infirmity

In the question of the relationship between health average and disabilities, the following results were recorded.

Table 32: Health Perceptions by Disability

	Above average n=155		Average n=287		Below average n=13		Totals n=459	
	M	F	M	F	M	F	M	F
Disabilities	18 (69%)	8 (31%)	42 (66%)	22 (34%)	3 (50%)	3 (50%)	63	33
Totals	26 (17%)		64 (22%)		6 (42%)		96 (21%)	

Of the group of people who felt their health was above average, 26 people (17%) had a disability, handicap or longstanding illness; 18 men (69%) and eight women (31%).

Exercise, Disability and Time Off Work

Within the group of people who had a longstanding illness, disability or handicap yet took exercise, 55 (64%) had felt ill at work during the last year, and 40 (47%) had had to take time off work for this illness. This compares with 250 (54%) from the sample as a whole who had felt ill and from that group 174 (38%) had to take time off work. People with a handicap, disability or longstanding illness do seem to have marginally more time off work than other people, even though they are able to take some exercise.

Medication

The medicine categories being taken at work are shown at table 33; the highest category being category 2, medicines for cardiovascular disorders, with 26 people (6%) taking this medication. The responses indicated that 104 people (23% of the sample) were taking medication and 98 (21%) of these are taking medication on prescription from their GP. Local pharmacists and workplace surgeries are not major contributors to providing medication.

Table 33: Medication

Category	Medicine taken (n=459)
1 - Gastric	9 (2%)
2 - Cardiovascular	26 (6%)
3 - CNS	3 (1%)
4 - Pain Control	12 (3%)
5 - Musculoskeletal	10 (2%)
6 - Hormones	7 (2%)
7 - Genito-urinary	0
8 - Infections	3 (1%)
9 - Immunology	1 (0.2%)
10 - Nutrition	3 (1%)
11 - Respiratory	10 (2%)
12 - E.N.T.	1 (0.2%)
13 - Eye	3 (1%)
14 - Allergies	3 (1%)
15 - Skin	1 (0.2%)
16 - Contraception	5 (1%)
17 - Neoplastic	0
18 - Poisoning + Drug Dep.	1 (0.2%)
None Prescription	6 (1%)
Total	104 (23%)

The national bill for medication continues to rise; this is in spite of very strict controls imposed by the Department of Health. The amount of money spent on prescribed drugs for 1984/85 was £1,913 million (DHSS, 1986). The pharmaceutical industry has expanded rapidly since the inception of the NHS in 1948, and has resulted in many developments through research and development which have made the lives of people with particular conditions more bearable. However, the high cost of prescribing has meant that GP's have now been limited in the range of drugs they can prescribe. There is a need to audit and monitor GP's prescribing patterns and this will be an ongoing activity for the foreseeable future (Wilkin, Hallam, Leavey and Metcalfe, 1987). These

authors carried out three separate studies of urban general practice: a survey of GP's, a study of patterns of care and a population survey in and around Manchester during 1982, and observed prescribing patterns as part of patterns of care. Their references to prescribing referred to prescribing patterns rather than prescription content. The non-prescription medicines taken included items such as 'aspirin' taken to preventive coronary heart disease, and cough mixtures and other such substances.

Medication by Gender by Health Perceptions

In the above average health group 21 people (20%) were taking medicine, 77 people (74%) in the health average group and 6 (6%) in the below average group were taking medicine (see table 34).

Table 34: Medication by Gender by Health Perception

Category	Above Average		Average		Below Average		Total
	M	F	M	F	M	F	
1. Gastric	1	1	3	2	1	1	9
2. Cardiovascular	0	2	16 (15%)	7 (8%)	1	0	26
3. CNS	0	0	3	0	0	0	3
4. Pain Control	0	2	6 (6%)	3	0	1	12
5. Musculoskeletal	2	1	5	2	0	0	10
6. Hormones	2	0	1	3	0	1	7
7. Genito-urinary	0	0	0	0	0	0	0
8. Infections	0	0	2	1	0	0	3
9. Immunology	0	0	1	0	0	0	1
10. Nutrition	0	1	1	1	0	0	3
11. Respiratory	4	1	3	2	0	0	10
12. E.N.T.	0	0	0	1	0	0	1
13. Eye	0	0	3	0	0	0	3
14. Allergies	1	0	0	2	0	0	3
15. Skin	0	0	0	1	0	0	1
16. Contraception	0	1	0	3	0	1	5
17. Neoplastic	0	0	0	0	0	0	0
18. Poison/Drug Dep.	0	0	1	0	0	0	1
None Prescription	1	1	3	1	0	0	6
Totals	11	10	48	29	2	4	104
	21 (20%)		77 (74%)		6 (6%)		(100%)

When this sample group are looked at for their perception of their health, the largest group of medicine takers are men and women taking medicine for cardiovascular

conditions; these people feel their health is average when compared to people of a similar age. The next highest category is men taking medication for pain control.

Null Hypothesis: There is no statistically significant association between people feeling healthy and taking medication.

Table 35: Medication by Feelings of Health

	Taking medicines	Not taking medicines	Total
Feeling healthy	87	337	424
Feeling un-healthy	16	16	32
Total	103	353	456

$$X^2 = 14.8; \text{ d.f.} = 1; \text{ p.} = < 0.001$$

A X^2 of 14.8 with one degree of freedom has a probability of less than 0.001, and the null hypothesis is not accepted. This suggests that there is a statistically significant association between peoples' feelings of healthiness and taking medication. The likelihood of a X^2 as big as 14.8 occurring by chance is 1/1000. Residual analyses were performed on the data with feeling healthy/not taking medicines being statistically significant at the .05 level.

Sleep

In terms of sleep patterns, 298 people (55% of the sample) slept well; 92 (17%) experienced disturbed sleep patterns; 69 (13%) wakened early; 52 (10%) had difficulty getting to sleep and 25 (5%) had difficulty in waking up. This means that 45% of this sample were experiencing some abnormal sleep patterns. People could have responded to more than one category; the totals are shown in table 36.

Table 36: Sleep Patterns

Slept well	298 (55%)
Disturbed sleep	92 (17%)
Waking early	69 (13%)
Difficulty getting to sleep	52 (10%)
Difficulty waking up	26 (5%)
Total	537 (100%)

In this survey slightly more people (45%) were experiencing sleeping difficulties than the sample surveyed by Jacquinet-Salord, et. al. (1993) in Paris. In that sample 42% of the people were experiencing self-reported sleep disturbance. However, the difference was not that great.

The comments on sleep given by people in this survey to support their numerical score included:

"Stress, planning the next days events, inability to switch off" (0112)

"My wife died from cancer in March last year" (0206)

"Mind too active, especially after shift work, body clock is always upset" (0310)

"Stress of money" (0951)

"Worry about work" (0408)

This would be consistent with the comments made by individuals in this survey who were not experiencing good sleep and would be supported by Hyypa's work on sleep (1991), that is that people who feel their sleep is poor could experience poor health.

Many people in this survey used the word 'stress' to describe how they were feeling or to explain a behaviour such as disturbed sleep. They may just be people whose sleep is disturbed but for them that is the way it is. To call this behaviour stress is to give it a label which has some universality--people have an understanding. It may not fit every clinicians understanding of the term, but it is useful to explain a disturbance between the individual and his environment which affects his homeostasis and for which there does not seem to be another explanation. However, this is applying the medical model to an event which may not be associated with disease, although it may have an illness outcome.

Worried About Health

The largest number of people who were worried about their health were in the group who felt their health was 'average', 64 people (14% of the whole sample).

Table 37: Health Average by Health Worry by Gender

Above Average		Average		Below Average		Total
M	F	M	F	M	F	
6	7	43	21	5	6	
13 (3%)		64 (14%)		11 (2%)		88 (19%)

Null hypothesis: There is no statistically significant association between people feeling they are healthy and the scores for health worry.

Table 38: Healthy by Health Worry

	Health worry	No Health worry	Total
Healthy	68	356	424
Not Healthy	19	14	33
Total	87	370	457

$$X^2 = 34.3; \text{ d.f.} = 1; p < 0.001$$

A X^2 of 34.3 with 1 degree of freedom has a probability of less than 0.001 and the null hypothesis is not accepted. This strongly suggests that there is statistically significant association between feelings of health and health worry. The likelihood of a X^2 as big as 34.3 occurring by chance is less than 1/1000. Residual analyses were performed on the data with not healthy / no health worry being statistically significant at the .05 level, that is cell (14) This figure is statistically lower than could be expected, as it would be assumed that people who felt themselves to be 'not healthy' would have health worries rather than no health worries.

Other Worries

When asked if they worried about things other than their health, 307 people (63%) responded positively. Of these 307 people, 87 (28%) also recorded yes to worries about their health.

Table 39: Worry and Anxiety Other Than Health

	Male (n=290)	Female (n=165)	No response	Total
Yes	183 (40%)	120 (26%)	4 (1%)	307 (63%)
No	105 (23%)	45 (10%)		150 (36%)
No response	2 (0.4%)			2 (0.4%)
Total	290	165	4	459 (100%)

The main concerns were contained in a closed question of six categories (see table 40).

Table 40: Types of Worries Other Than Health

	Male	Female	Total
Employment	97 (28%)	46 (20%)	143 (24%)
Money	89 (25%)	52 (22%)	141 (24%)
Family	76 (22%)	65 (28%)	141 (24%)
Relationship	48 (14%)	37 (16%)	85 (15%)
Well-being	19 (5%)	7 (3%)	26 (4%)
Other	23 (7%)	25 (11%)	48 (8%)
Totals	352 (60)	232 (40%)	584 (100%)

People could have responded to more than one answer. The greatest concerns were about employment (24%), worries about money (24%) and family worries (24%).

The division between the sexes indicates a raised response in the female group.

Females make up just over a third of this sample (36%), and within this questions sample they recorded a 40% response. Collectively employment, money, and family had equal level of worry for both sexes, with well-being of least concern for both sexes. The highest level of worry for both sexes was recorded for employment issues, 143 (24%), and this was also the highest level for men. Women were more concerned about family than employment or money, although money came second to family. Men put worries about money second to worries about employment.

The fact that employment and money head this group is not surprising with the West Midlands being in the grip of a recession and many people being made redundant. Unemployment in the region was approximately 10% at the time of this survey, and people were acutely aware that many large companies were ceasing to trade either through bankruptcy, merger and/or takeover. Merger and takeover often result in redundancy and unemployment as 'unprofitable' parts of organisations are closed or rationalised.

It may be that some of these people have already experienced redundancy and unemployment. Of the 146 (49%) who said yes to having worries and anxieties about employment, 87 had done other jobs in their present organisation and 100 had done

jobs in other organisations. It is unfortunate that a question on unemployment or redundancy was not included in the questionnaire.

The issue of unemployment and health has been a major focus in the literature during the late 1970's and the 1980's. There seems to be a conscious effort to put distance between the health of the population at large and the employed population. The same philosophy does not apply to the unemployed population, which is much smaller in number and is probably made up of a proportion of people who have been damaged by their work, disease or injury (Townsend, 1979; Fagin & Little, 1984; Richman, 1987).

When considering worries other than health, Hanney (1979) identifies four areas of social concern in his study. These were:

"difficulties with children or teenagers, difficulties with other relations, financial difficulties or other problems."

These categories were graded for worry or inconvenience. It would appear from this study of people who are at work that social concerns must include employment, a feature not included by Hanney.

Visit to Occupational Health Department

Of the sample, 157 (34%) had visited their Occupational Health Department in the past twelve months. The main categories that people attended for were category 1, health supervision, 54 (34%); and category 6, treatment for illness and/or injury, 95 (61%). No activities were recorded for category 3, counselling; category 4, occupational safety; category 7, administration; and category 9, other agencies. Small proportions of work were identified in category 2, health education; category 5, environmental control; category 8, rehabilitation and category 10, research; each recorded 1 response (0.2%).

A new condition was identified by 46 people (10%) as the reason for visiting the Occupational Health (OH) Department.

An occupational health service (OHS) is a service provided in the workplace by employers to support the health of their employees. The focus should be preventative, ensuring that work does the individual no harm, and the work of the department starts before an individual becomes an employee. Ideally people are assessed prior to being offered a job to ensure a 'fit' between the individual and the job they are going to do. The health professionals working in an OHS should be making assessments on two scales, the effect of work on health and health on work. The pre-employment health assessment is part of health supervision which should be the prime emphasis of an occupational health service.

The occupational health physician and nurse should have full working knowledge of all the activities in the workplace, the requirements of the various jobs, the substances and equipment used, work methods and patterns and any potential hazard. With this full and special knowledge, they should utilise their skills in health care to safeguard the individual, the people that the individual works with, the organisation and the community in which that organisation is sited. Once the OH team has made a decision about the individuals' ability to do the work applied for, they would advise the manager that the person is 'fit to do the work', or 'fit to do the work with certain conditions' or 'not fit to do the work' if that is the case. The manager, on the basis of that advice, will decide whether to employ the person. An OHS is a service to the organisation; it assists managers in carrying out their managerial role.

If the person is employed, health supervision may continue throughout working life. For some occupations there are statutory medical examinations consisting of specific tests to be carried out at particular time intervals. An example of this would be people who work with lead and who because of that exposure come under the Approved Code of Practice, Control of Lead at Work Regulations (revised 1985) (HMSO, 1985B). These people will be examined and assessed prior to exposure to lead in the workplace. This will set their individual norm. They will be asked questions about previous work done and leisure activities (people who shoot for a hobby often have a raised blood lead

level); they will be assessed for certain conditions, personal hygiene, and general state of health. The level of lead in air is prescribed in the workplace and if all things are equal, i.e. health behaviour, work patterns, work behaviour, personal life, then in the present state of knowledge working with lead should do the person no harm.

Professional Groups Employed in Occupational Health

There are a range of people employed directly in the delivery of occupational health care. The prominent members of the group would be:

- Occupational Health Nurses
- Occupational Health Physicians
- Safety Practitioners
- Occupational Hygienists

This group could be extended to include untrained nurses and doctors (untrained in occupational health that is), ergonomists, physiotherapists, first aiders and safety representatives.

Each of the four main categories has a specific education and training programme in occupational health practice which distinguishes the 'professional' from the dedicated amateur. This process of professionalisation is documented in an HSC publication, "Professional training and qualification in occupational health and safety: a discussion paper" (POHSO, 1986). The various institutions and organisations involved in education and training in OH have produced a booklet which identifies these organisations, their history, objectives, membership requirements, outline of training and role of the practitioner.

The HSC funded research in the mid 1970's looked at the activities of occupational health services, their distribution in organisations, the range of personnel employed and their qualifications (HSC, 1977). The results of this survey showed that the 'better' trained personnel worked together in organised teams in the larger companies, and the less well qualified worked in isolation in small companies. In January 1987, a small survey of occupational health nurses in the West Midlands (Bamford, 1987A) indicated

that there has been no dramatic change in the past 10-15 years. Other areas of specialised nursing require mandatory training prior to practice, i.e. district nursing, midwifery, health visiting. There is no such requirement on occupational health nurses nor the people who employ them.

The ongoing health supervision programme in the workplace will monitor work/health relationships by means of questioning, physical examination and biological measurements, to identify any deviation from the norm for each individual.

Another example of health supervision would be directed at people in the workplace who were thought to be vulnerable through existing conditions; i.e. diabetes, epilepsy, asthma; through social circumstances: (returning to work following maternity leave); being a single parent; caring for elderly relatives; starting work; planning for retirement; any aspect of life which could make that individual vulnerable. The care that would be offered would be to meet the individuals needs in relationship to their workplace activity; not to replace the existing social health care services. It may be necessary to liaise with other agencies external to the workplace to meet the individuals needs; this is only done with the employees permission.

Visit to Doctor/Seen GP

Of the people who had visited their OH department, 46 (10%) had also been to see their GP for the same condition; 28 of the people (6%) had been referred to their GP by the Occupational Health Department.

In relation to the work that people did, the highest numbers were in group 14 (12 people - 3%), and group 7 (10 people - 2%). Groups 1, 4, 8, 11, 15, 18 and 19 included no one who had visited their OHS and their GP (see table 41).

Table 41: Occupational Group of People Who Saw GP

Occupational group	Seen GP
2	2 (0.44%)
3	2 (0.44%)
5	6 (1%)
6	3 (1%)
7	10 (2%)
9	3 (1%)
10	1 (0.2%)
12	2 (0.4%)
13	4 (1%)
14	12 (3%)
17	1 (0.2%)
Total	46

The categories that people visited their OHS for were: 13 people (3%) for health supervision issues and 30 people (7%) for issues related to the treatment service. One person (0.2%) had visited for issues related to environmental control, and two people (0.4%) did not indicate what they had visited the OHS for. Of the 46 people who had been to see their GP, 34 (7%) had felt ill during the last twelve months.

Meaning of Health: What does the word health mean to you?

Of the 459 questionnaires analysed, twenty eight (6%), gave no response to this question or made comments which were unusable. Of the remaining 431 the following data was analysed.

Multifactoral answer = 296 responses (69%)

These are people who in their responses included more than one category, i.e. 'physical and mental well-being'.

Single factor answers = 135 responses (31%)

This group would include answers such as 'general physical well-being'.

Below are the divisions given in people's responses. 'Well being' is given as a sub-category in group three, 'Presence', because that was the way some people presented the response as well as 'physical and mental well-being'. These people did not

attribute well-being to any other factor, their work having some personal meaning which linked it to health.

The major groups which emerged did not necessarily have the words used by the author to identify the major groups linked to them by the respondents. The language used by the respondent was likely to be "Having no physical or mental disabilities that could change my present way of life." This would be coded as 2iii, Absence of disability.

From the analysis of the respondents answers it was clear that major themes were emerging; these being: prevention, absence, presence, ability, physical well-being, psychological well-being and spiritual well-being.

1. Prevention (n=33)	5 (15%)
i. Taking care	9 (27%)
ii. Avoiding doctors	3 (9%)
iii. Environment	2 (6%)
iv. Not to misuse/abuse self	10 (30%)
v. Avoid premature death	3 (9%)
vi. Not to be a burden	1 (3%)
Total	33 (99%)

2. Absence (n=91)	3 (3%)
i. Illness	45 (49%)
ii. Disease	11 (12%)
iii. Pain	11 (12%)
iv. Worries	7 (8%)
v. Stress	8 (9%)
vi. Restrictions	5 (5%)
vii. Medication	1 (2%)
Total	91 (100%)

3. Presence (n=93)	0
i. Well being	30 (32%)
ii. Feeling good	30 (32%)
iii. Confidence	1 (1%)
iv. Long life	8 (9%)
v. Feeling right	3 (3%)
vi. Feeling well	12 (13%)
vii. Feeling healthy	3 (3%)
viii. Control	6 (6%)
Total	93 (99%)

4. Ability (n=123)	3 (2%)
i. Work	39 (32%)
ii. Play	20 (16%)
iii. Function/perform	46 (37%)
iv. Care for family	11 (9%)
v. Responsibility	1 (1%)
vi. Recovery	3 (2%)
Total	123 (99%)
5. Physical well-being (n=309)	165 (53%)
i. Exercise	35 (11%)
ii. Diet	34 (11%)
iii. Relaxation	1 (0.3%)
iv. Looking good	1 (0.3%)
v. Mechanical/ability/measure	11 (4%)
vi. Energy/vitality/action	8 (3%)
vii. Life-style	17 (6%)
viii. Feeling fit	37 (12%)
Total	309 (100%)
6. Psychological well-being (n=134)	112 (84%)
i. Positive attitude	5 (4%)
ii. Ability to cope	8 (6%)
iii. Peace of mind	4 (3%)
iv. Superstition	5 (4%)
Total	134 (101%)
7. Spiritual well-being (n=75)	8 (11%)
i. Enjoying life	22 (29%)
ii. Fulfilled life/potential	6 (8%)
iii. Quality of life	7 (9%)
iv. Happiness	15 (20%)
v. Zest for life	4 (5%)
vi. Contentment/at ease	13 (17%)
Total	75 (99%)
8. Social well-being (n=4)	4 (100%)

The responses that people made to the question: 'What does the word health mean to you?' were looked at against a multi-faceted concept of health which embraced health, well-being, life satisfaction, quality of life and happiness. This proved to be a difficult task, although some statements did fall simply and easily into one of the categories; for example:

"A state of well-being" (0133)

"Being healthy" (0544)

"Body working well, feeling good, alert and able to cope" (0621)

The first statement refers to well-being, this is a shorthand statement by which means the individual conveys a message about his or her health; also with the second statement, by being healthy the person is not un-healthy. The third statement carries three shorthand messages: body working well could mean healthy, feeling good could mean life satisfaction or quality of life, and ability to cope could mean happiness.

One important factor which is not included in this conceptual framework is that of function. This could also be related to strength and or ability; examples include:

"Being responsible for the well-being of my mind and body. Being fully in control by exercising, and eating sensibly and taking note of warning signs." (0604)

"Well-being, not feeling ill. Being able to do what I want both physically and mentally. I think regular, sensible exercise also contributes to good health." (0762)

"A complete body/mental/social well-being. Physical fitness, strength, suppleness, stamina linked with emotional, mental well-being and a social confidence." (0646)

The notion of "ability to do" linked to control seems to be a very important concept for people at work. Of the three comments listed above, one is from a senior manager (0604), the other two are from people who would be described as operatives. The statements are no less complex or encompassing.

The meaning of the word health evokes a very personal response by individuals. This response is built up over time and is an outcome of a person's reflection of their life and the lives of other people they have known. It is the sum of their parts. Examples of the allocation of people to categories and 'labels' are given below.

1. Prevention

"In bad health some or all of the activities I consider to be normal would be prevented by a physical or mental malfunction." (0259)

"An increased capability to respond to the flexible demands of life with emphasis placed on prevention." (1304)

1.i. Taking care

"Looking after yourself" (1439)

"Your health is something very valuable and its up to you to take care by eating sensibly, don't smoke, drink alcohol only occasionally."

"Prevention is better than cure, have smear test, x-ray etc." (1318)

1.ii. Avoiding doctors.

"No pain, no medication, no bloody doctors" (0146)

"Having an illness and pain free life and not having to visit the doctor too often, either for yourself or family". (0333)

1.iii. Environment

"Able to lead a full and active life without feeling anything is wrong with oneself and ones family - occupation and environment". (0502)

"Your health is affected by the life-style you presently live and have lived. Health is reliant on a number of things. e.g. exercise, diet, life-style, working and home environment". (0754)

1.iv. Not to misuse/abuse

"Caring for the general well-being of my body by avoiding its misuse or abuse". (0605)

"The word health means to eat and look after your body as well as you possibly can and not to abuse it". (0343)

1.v. Avoid premature death

"The maintenance of a body in condition so that life may be enjoyed and the avoidance of premature death". (0608)

"Long life". (1303)

1.vi. Not to be a burden

"Being able to do what I want without hesitation and being a liability to other members of my family, friends or colleagues". (0102)

The fact that people in this survey used the concept of prevention is an indication that they felt able in some measure to have control of their health and that they could be instrumental in maintaining or enhancing their health by a variety of actions (Currier & Stacey, 1986). People have used positive and negative words to explain their beliefs.

If they didn't actively do something then they will be exposing themselves to the possibility of ill-health. One category would fit quite closely to Illich's (1976) perception of the medicalisation of health, "avoiding doctors". These persons seem to believe that if they are pain free, take no medicine and have no contact with doctors they will remain healthy. These thoughts seem to be a mix of ideas, perhaps they are generated by what the person has seen happening in colleagues, and in them the result has been ill-health. There does seem to be an element of control under pinning these comments. Even where people have used ill-health concepts and negative words to describe their beliefs, the emphasis is about them doing something to avoid ill-health.

2. Absence

"Having no physical or mental disabilities that could change my present way of life". (0835)

2.i. Illness

"Not suffering from any major illness". (0249)

"Being well, not ill". (1337)

2.ii. Disease/disability

"Not having any serious disease/condition and generally being fit within yourself, both physically mentally". (0928)

"To feel fit, having nothing wrong with you". (0250)

2.iii. Pain

"Feeling mentally and physically clean, stamina good, relative to age of individual. Few aches and pains, only those which are self-inflicted; perhaps by sporting activities, nature of your employment". (1363)

"Being fit, no aches or pains, going where you want and doing what you want". (0937)

2.iv. Worries

"Being able to lead a reasonably active life-style, dancing, gardening, D.I.Y. without having to worry about the effects of the activities on me, able to do my job in an energetic way and get pleasure out of life generally". (0257)

2.v. Stress

"General well being, good appetite, sleeping well, no stresses, good sex life". (0913)

"Being fit, average weight, therefore not over weight, strong and healthy, not stressed or anxious". (1368)

2.vi. Restrictions

"to live life to the full without restriction, to fully support my wife, my company at all times". (0902)

2.vii. Medication

Previously quoted in 1.ii., "avoiding doctors".

Absence of conditions or situations which could lead to ill-health is a measure of how people are understanding the messages relating to health and ill-health. This links in with the medical model; if there is no disease present, i.e. it is absent, then the person is healthy. Worries and stress could be seen as pre-cursors to disease development and therefore ill-health. This concept as described by Calnan (1988) would be negative, but the language used by people is both positive and negative. For example, 'to feel fit' (positive); 'having nothing wrong with you' (negative). People generally do not seem to have the same mental divisions as researchers would think they have in viewing their health. Some people are perhaps using language in a different way to others. An example of different use of language is to be found in the next category--Presence.

3. Presence

3.i. Well being

"General feeling of well-being, where your everyday life is not adversely affected by ill-health or fitness". (0936)

"Well-being". (1302)

3.ii. Feeling good

"Feeling good, being able to carry out tasks to my fullest ability". (0863)

"Feeling good in myself, a positive outlook on life, fit, able to do all the things I would like to, the feeling that I can go on indefinitely, to eat, sleep, work in a balanced manner". (0735)

3.iii. Confidence

"Feeling confident and happy and great to be alive". (0525)

3.iv. Long life

"Longer life". (1038)

"Feeling good, looking good, being cheerful and trying to live as long as I can". (1324)

3.v. Feeling right

"It means to me how I feel and how my body feels". (1347)

"Feeling right with myself, no coughs, colds, aches and pains." (0634)

3.vi. Feeling well

"Feeling well, clear skin, hair in good condition". (1024)

"Feeling well and able to cope satisfactorily with modern demands on human life". (1338)

3.vii. Feeling healthy

"Being healthy". (0544)

"Feeling good bodily, if one has good health and the reverse if not". (0636)

3.viii. Control

"Quality of life for yourself, your family around you, well-being, continuity of life on a day to day basis with minimum of unplanned and unwanted instances". (1360)

"Being of a sound body and mind, being able to live one's life without restrictions and being in complete control". (0412)

Presence is more positive than absence. The comments that people made sound more positive, more joyful. In this category, people relate to how they feel: feeling good, feeling confident, feeling right, feeling well, feeling good bodily, feeling right with myself, feeling good in myself. The word is not just related to the individuals physical being, but also to psychological and spiritual being - 'feeling good, looking good, being cheerful'. These people have a personal measure of health which encapsulates this range. There is an element of control in this measure, 'able to do all the things I would like to do' is one way of expressing this, in addition to the use of

negative words such as 'unplanned and unwanted', 'without restrictions'. People have also used other negative thoughts to illustrate their thinking, using these as an opposite end of the spectrum, 'no coughs, colds, aches and pains'.

4. Ability

"Ability to live and enjoy life'. (0347)

"Ability to carry on, with pleasure, the activities that I wish to do". (0805)

4.i. Work

"My work". (0810)

"Looking after myself, wife and kids and being fit to do the job I am employed to do". (0417)

4.ii. Play

"Not being in pain, fit enough to climb a mountain or hill". (0714)

"Being able to work and enjoy my leisure time to the full". (0407)

4.iii. Function

"It means the condition a person may be in and his/her ability to do activities whether it be work or leisure without any restrictions". (0970)

"The ability to do the things I have to do plus the things I want to do". (0914)

4.iv. Care for family

"Well being and ability to cope with job, family, home through conscientious monitoring of diet, exercise and relief of stresses". (0148)

"Looking after myself, eating correctly, regular exercise, making sure my family are OK". (0203)

4.v. Responsibility

"Being responsible for the well-being of my mind and body, being fully in control by exercising and eating sensibly and taking note of warning signs". ((0604)

As at 4.i.

4.vi. Recovery

"Feeling of mental and physical well-being, ability to 'shake-off' minor ailments i.e. colds etc. quickly". (0538)

Ability means to do things, be in control, active, involved, in charge. Perhaps this category more than any other would link to a previous concept held on health, that of strength, not to demonstrate weakness and to feel 'fit' (Williams, 1983) The underlying theme in this section is one of doing, of functioning, and with that an element of control. Even when a negative is used to illustrate, i.e. 'not being in pain', the second part of the individuals thoughts could be classed as heroic, i.e. 'fit enough to climb a mountain or hill'. The mountain comes before the hill, mountains to be climbed now, and when that isn't possible perhaps a hill.

Also demonstrated in peoples ideas is that even where health is about doing, it includes a relationship between physical, psychological and spiritual aspects: being fit to do the job; the ability to do the things I have to do plus the things I want to do; being fully in control; enjoy life; ability to carry on, with pleasure, the activities I wish to do.

5. Physical well-being

"Well-being in mind and body". (0953)

"Physical and mental well-being". (0129)

5.i. Exercise

"All about the inside of yourself, the way it ticks, due to the food we eat, life we live, exercise we take". (0125)

"Good health, free of illness, fairly fit, eating and drinking in moderation, keeping fit by walking - lots of fresh air". (0518)

5.ii Diet

"Looking feeling good, healthy eating beauty from within ones self, confidence and good skin, hair, eyes and teeth". (0860)

"Clean life, not to abuse oneself, good steady diet, work and exercise." (0932)

5.iii. Relaxation

"Being healthy, fit and relaxed" (0155)

5.iv. Looking good

"Feeling good, looking good, being cheerful and trying to live as long as I can." (1324)

"A good all-round appearance, good all-round fitness." (1045)

5.v. Mechanical

"All organ and body parts function correctly and completely, consistent with age and normal wear and tear." (0514)

5.vi. Energy/vitality/action

"Fitness in body and mind, an active life, no illness." (0446)

"To feel good, fit and active and all bodily functions and systems are working adequately." (0310)

5.vii. Life-style.

"Health is feeling of well-being which needs to be looked after in order to lead the life style you want, but not become obsessed with worrying about food etc."

"To carry on with my work and life-style without recall to my doctor. To carry on leisure time activities without too many repercussions."

5.viii. Feeling fit

"Feeling and being physically and mentally fit." (0202)

"Feeling good, looking after yourself, being fit, not out of breath." (1312)

Physical well-being relates to the mind and body seeming to suggest that people see a balance as being necessary for health. This concept seems to rely on a more mechanical train of thought. There seems to be a relationship in peoples minds about inputs and outcomes; what is taken into the body: diet, atmosphere; what is done to the body: exercise, work, bodily function, absence of ill-health; together with how the body looks. Perhaps the concept of control is more apparent in this group by means of a more mechanistic approach.

6. Psychological well-being

"General well-being and contentment with one's physical and mental state." (1116)

"The state of one's mind and body." (1105)

6.i. Positive attitude

"It means everything to me, it is the most important thing in life." (1065)

"To feel good in body and mind, if you don't have good health, all the money in the world can't buy it for you. Do things in moderation, eat in moderation, too much of anything is no good for us." (1428)

6.ii. Ability to cope

"Being able to cope with everyday life, without any stress or strain, fit and able to stand up to any physical challenges set for you." (0350)

"It means being able to be involved in many things and feel good within yourself, I feel if you are health then any worries or problems that might occur are not half so bad because you can face them better." (0440)

6.iii. Peace of mind

"Plenty of energy, peace of mind, a feeling of enjoyment, being able to do things." (0221)

"Peace of mind and physical condition that permits me to tackle reasonable tasks confidently." (1166)

6.iv. Superstition

"A good diet, plenty of exercise, a lot of luck, live each day as it comes." (1427)

"To me the word health means the tightrope that those of us lucky enough to be on, hope we can stay on. Unlike any other kind of tightrope, this depends more on luck than skill." (0850)

This section is particularly interesting in that the second highest number of people in the sample (n=134) made reference to psychological well-being, either in the broad category of psychological well-being by referring to mind as a component of health, or by means of the sub-categories of positive attitude, ability to cope, peace of mind or superstition. Superstition would suggest that the people are assuming they have no control at all of circumstances and situations. This would seem to be even more negative than the 'chance' category described by Calnan (1988).

The other categories move on from the general comments on psychological well-being as being the state of one's mind to give examples of how one's mind can affect one's

health. The use of stress and strain, worries and problems are negative, but acknowledge that the mind does have an effect on physical well-being.

7. Spiritual well-being

"Physical, mental and spiritual well-being." (0728)

"Health means a good state of mind, body and soul. If you've got a fit mind you will have a fit body and a better attitude to life." (0632)

7.i. Enjoying life

"Enjoying life without illness, mental or social disorder." (0503)

"Being able to enjoy life to the full." (1356)

7.ii. Fulfilled life/potential

"Living." (0414)

"Being able to enjoy life, feeling physically fit and comfortable; having low stress levels, feeling personally fulfilled in what I do." (0554)

7.iii. Quality of life

"Quality of life is sufficient for me to carry out my daily tasks unhindered." (0513)

"Feeling of well-being, which makes the quality of life good." (0248)

7.iv. Happiness

"Being physically fit in all parts of the body with no pain, stiffness of restrictions, coupled with being mentally happy and active." (0101)

"Happiness, enjoyment, appreciation, love, thanks, honesty." (1106)

7.v. Zest for life

"Feeling of well-being and getting on with life." (0328)

"Feeling confident and happy and great to be alive." (0525)

7.vi. Contentment/at ease

"Well-being, contented with your work place, and family, but still striving for a bit better." (1443)

"Living a normal life." (0465)

The section on spiritual well-being is enormously interesting. People seem to have a feeling for the joy of living which they express in many ways: enjoying life, being fulfilled, having a quality of life, being happy, a zest for living, being content. There is still a use of mixed concepts, positive and negative words, but the essential feeling is one of being uplifted, of strong positive feelings. The comments used to illustrate this section are taken as all comments are from a range of organisations, from all occupational groups and from a cross section of organisational positions.

8. Social well-being

"Enjoying life without illness, mental or social disorder." (0503)

"A complete body/mental/social well-being."

"Physical fitness, strength, suppleness, stamina linked with emotional, mental well-being and a social confidence." (0646)

Social well-being is interesting by its lack of utilisation by people. The WHO definition of health (Townsend, 1982) which relates to physical, social and emotional well-being has been used quite considerably in the literature and health education programmes. People have made reference to many aspects of social conditions in their definitions of health, but there were only four formal uses of the term 'social'.

Perceptions of Health by Organisations

It is interesting that across a range of organisations dominant themes emerge. Table 43 has shown the numerical distribution across organisations and between major themes. In each organisation the dominant theme was physical well-being. There was an overall score of 36% (309) out of possible responses of 862, remembering that many people gave a multi-factoral response and that this response could have been part of a composite answer. The highest score for this concept was in organisation 7, the local authority property services department. The next highest score was for organisation 2, the metal components factory with 44% (33). The lowest score was 25% (26) for organisation 13, the electronics organisation.

The second most popular perception does not follow the same uniform pattern. The people in organisations 1, 3, 4, 9, 11, 12 and 13 rated 'ability' as the second most recorded perception of health. People in organisations 2, 5, 6, 7 and 8 rated 'psychological well-being' as their second most recorded perception. People in organisations 10 and 14 recorded 'presence' as their second most recorded perception category (organisation 10 is the porcelain manufacturer and organisation 14 is the catering firm).

When a more detailed look is taken of all health themes across all organisation (see table 44) the following pattern emerges. In the major category of 'prevention', 10 people (30%, n=33) felt that 'not to misuse or abuse oneself' was the most important thing that they could do. In the 'absence' category, 45 people (49%, n=91) felt that the 'absence of illness' was their basis for deciding what health meant to them. 'Presence' had two equal scores from 30 people (32%, n=93); 30 people felt that 'well-being' reflected their understanding of health and 30 people felt that 'feeling good' summed up their understanding of health.

In the group who responded to 'ability', 46 people (37%, n=123), listed 'ability to function/perform' as their basis for deciding on health. Of the group who responded to 'physical well-being', 165 people (53%, n=309) used this broad title to describe health. The next highest group in this category was 'feeling fit' with 37 people (12%) responding.

The broad title of 'psychological well-being' was used by 112 people (84%, n=134). In the group who listed 'spiritual well-being' themes, 22 people (29%, n=75) listed 'enjoying life' as their way of describing health.

The comments made by people in relation to their understanding of the word health were tested against Kenney's (1992) work "The consumer's view of health". This was work based on previous work on definitions of health. Kenney devised a

questionnaire which contained twelve categories which have previously been used in definitions of health (Smith, 1981; Laffrey, 1986; Woods, et. al., 1988). These categories were used together with a Lickert scale to gain an understanding of peoples concepts of health. An attempt was made to score the responses in this questionnaire to the twelve categories. This did not work. The difficulty arose because the responses in this questionnaire were formed by the respondents rather than scoring within a set reange of items. Some of the responses were multi-factored; it would have been possible to code or score these responses, but very few responses matched the items used by Kenney. Kenney's categories were:

"Adaptation; clinical; role performance; body image; cognitive function; fitness; harmony; health promotion; positive mood; self-actualisation; self-concept; and social involvement." (p. 831)

Table 43. Perceptions of Health by All Responses From the Fourteen Organisations

		ORGANISATIONS														Total
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	
1. Prevention	1	2	3	2	2	1	4	1	0	3	1	1	2	10	1	33
	(2%)	(4%)	(4%)	(4%)	(4%)	(1%)	(5%)	(1%)		(7%)	(1%)	(3%)	(5%)	(10%)	(6%)	(4%)
2. Absence	10	8	8	6	8	8	8	4	8	3	9	4	3	11	1	91
	(12%)	(11%)	(17%)	(11%)	(10%)	(9%)	(9%)	(6%)	(14%)	(7%)	(13%)	(11%)	(7%)	(11%)	(6%)	(11%)
3. Presence	3	5	6	8	6	11	5	5	5	6	11	3	4	16	4	93
	(4%)	(7%)	(13%)	(14%)	(8%)	(13%)	(7%)	(9%)	(9%)	(13%)	(15%)	(8%)	(10%)	(16%)	(22%)	(11%)
4. Ability	16	7	7	14	10	5	3	4	9	9	8	11	11	17	3	123
	(18%)	(9%)	(15%)	(25%)	(13%)	(6%)	(4%)	(7%)	(20%)	(13%)	(22%)	(26%)	(26%)	(17%)	(17%)	(14%)
5. Physical well-being	32	33	14	15	29	33	32	21	16	29	10	13	26	6	309	
	(40%)	(44%)	(30%)	(27%)	(36%)	(39%)	(47%)	(38%)	(36%)	(40%)	(28%)	(31%)	(25%)	(33%)	(36%)	
6. Psych well-being	13	12	6	7	16	15	15	13	5	10	6	7	7	2	134	
	(16%)	(16%)	(13%)	(13%)	(20%)	(18%)	(22%)	(23%)	(11%)	(14%)	(17%)	(17%)	(7%)	(11%)	(16%)	
7. Spiritual well-being	5	7	3	4	8	8	7	5	3	3	4	2	15	1	75	
	(6%)	(9%)	(7%)	(7%)	(10%)	(9%)	(10%)	(9%)	(7%)	(4%)	(11%)	(5%)	(15%)	(6%)	(9%)	
8. Social well-being	0	0	0	0	2	1	1	0	0	0	0	0	0	0	4	
	(0%)	(0%)	(0%)	(0%)	(2%)	(1%)	(1%)								(0.4%)	
n	81	75	46	56	80	85	68	56	45	72	36	42	102	18	862	
	(100%)	(100%)	(100%)	(100%)	(100%)	(100%)	(100%)	(100%)	(100%)	(100%)	(100%)	(100%)	(100%)	(100%)	(100%)	

Table 44. Perceptions of Health by Organisations and Sub-categories

	ORGANISATIONS														Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
Prevention	-	1	-	-	-	-	-	-	1	-	1	-	2	-	5 (15%)
1. Taking Care	-	1	-	1	-	2	-	-	1	-	-	-	3	1	9 (27%)
2. Avoiding doctors	1	-	1	-	-	-	-	-	-	-	-	-	1	-	3 (9%)
3. Environment	-	-	-	-	1	-	1	-	-	-	-	-	-	-	2 (6%)
4. Not misuse/abuse self	-	1	1	-	-	1	-	-	1	1	-	2	3	-	10 (30%)
5. Avoid premature death	-	-	-	-	-	1	-	-	-	-	-	-	1	-	2 (6%)
6. Not to be a burden	1	-	-	1	-	-	-	-	-	-	-	-	-	-	2 (6%)
Total	2	3	2	2	1	4	1	-	3	1	1	2	10	1	33 (99%)
Absence	-	-	-	-	-	-	-	2	1	-	-	-	-	-	3 (3%)
1. Illness	5	3	3	3	5	2	2	3	1	5	4	2	6	1	45 (49%)
2. Disease	-	1	2	-	2	2	-	1	-	2	-	-	1	-	11 (12%)
3. Pain	3	1	1	-	-	1	2	-	-	1	-	-	2	-	11 (12%)
4. Worries	-	1	1	1	-	2	-	1	1	-	-	-	-	-	7 (8%)
5. Stress	2	1	-	1	1	1	-	1	-	-	-	-	1	-	8 (9%)
6. Restrictions	-	1	1	1	-	-	-	-	-	-	-	1	1	-	5 (5%)
7. Medication	-	-	-	-	-	-	-	-	-	1	-	-	-	0	1 (1%)
Total	10	8	8	6	8	8	4	8	3	9	4	3	11	1	91 (99%)
Presence	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1. Well-being	1	1	3	1	2	5	2	3	4	3	-	2	2	1	30 (32%)
2. Feeling good	1	1	2	4	2	1	2	2	1	3	2	2	5	2	30 (32%)
3. Confidence	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1 (1%)
4. Long life	-	2	-	-	-	1	1	-	-	3	-	-	1	-	8 (9%)
5. Feeling right	1	-	-	-	-	1	-	-	-	-	-	-	1	-	3 (3%)
6. Feeling well	-	1	-	1	-	1	-	-	1	2	1	-	4	1	12 (13%)
7. Feeling healthy	-	-	1	1	1	-	-	-	-	-	-	-	-	-	3 (3%)
8. Control	-	-	-	1	-	2	-	-	-	-	-	-	3	-	6 (6%)
Total	3	5	6	8	6	11	5	5	6	11	3	4	16	4	93 (99%)

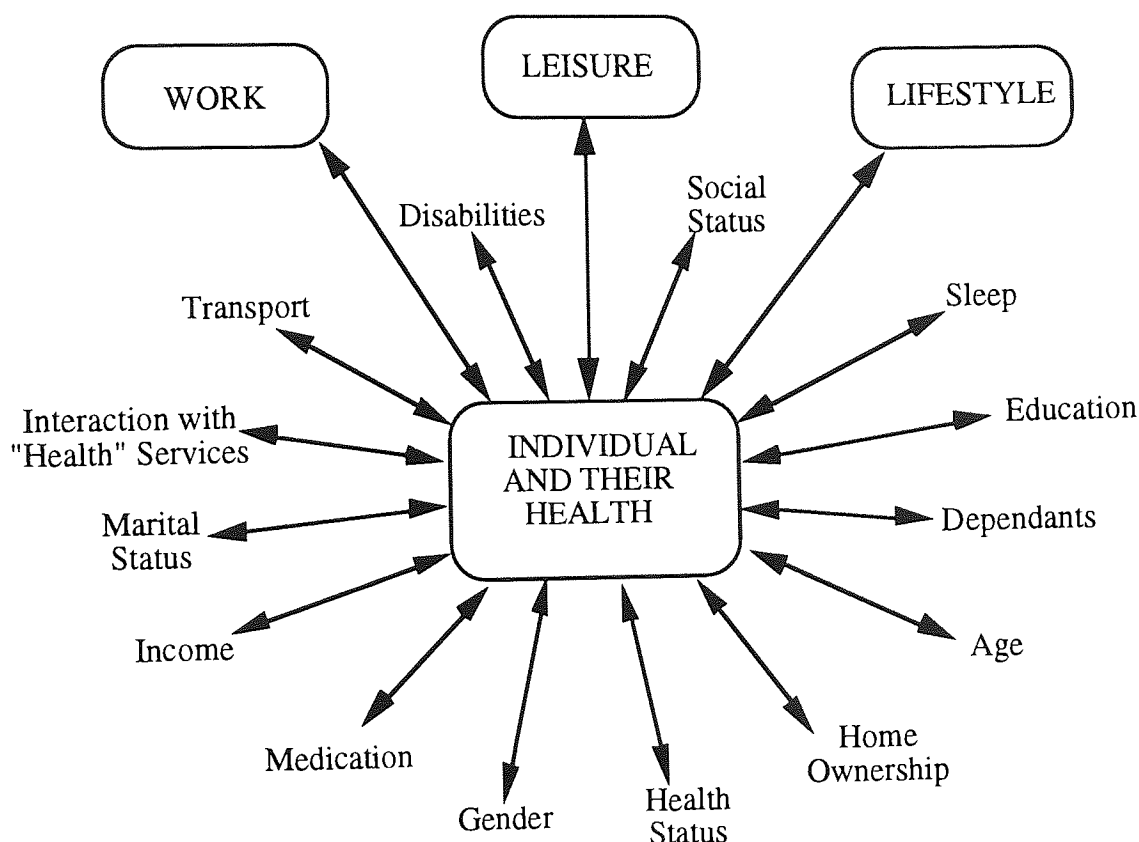
Table 44 (continued)

ORGANISATIONS

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Total
Ability	-	-	1	-	-	-	1	1	-	-	-	-	-	-	3 (2%)
1. Work	7	1	2	9	3	-	1	2	2	1	2	4	5	-	39 (32%)
2. Play	2	-	2	2	-	-	1	-	1	2	3	2	5	-	20 (16%)
3. Function/perform	5	4	2	1	6	4	-	-	5	4	3	4	6	2	46 (37%)
4. Care for family	1	2	-	1	-	-	-	1	1	2	-	1	1	1	11 (9%)
5. Responsibility	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1 (1%)
6. Recovery	1	-	-	-	1	1	-	-	-	-	-	-	-	-	3 (2%)
Total	16	7	7	14	10	5	3	4	9	9	8	11	17	3	123 (99%)
Physical Well-Being	18	15	6	9	19	17	22	17	5	11	7	7	10	2	165 (53%)
1. Exercise	4	4	2	1	3	4	2	1	3	2	1	2	4	2	35 (11%)
2. Diet	4	4	2	1	3	3	2	1	1	5	-	2	4	2	34 (11%)
3. Relaxation	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1 (0.3%)
4. Looking good	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1 (0.3%)
5. Mechanical/ability/measure	1	2	-	-	-	1	1	1	-	3	-	-	2	-	11 (4%)
6. Energy/vitality/action	-	2	-	-	1	2	-	-	1	2	-	-	-	-	8 (3%)
7. Life-style	2	1	2	1	1	1	5	-	1	1	-	1	1	-	17 (6%)
8. Feeling fit	2	5	2	2	2	5	-	1	5	5	2	1	5	-	37 (12%)
Total	32	33	14	15	29	33	32	21	16	29	10	13	26	6	309 (100%)
Psychological Well-Being	11	10	5	6	16	10	14	11	5	9	4	7	4	-	112 (84%)
1. Positive attitude	-	-	-	-	-	2	1	-	-	1	-	-	-	1	5 (4%)
2. Ability to cope	1	-	1	1	-	2	-	-	-	-	-	-	3	-	8 (6%)
3. Peace of mind	1	1	-	-	-	1	-	-	-	-	1	-	-	-	4 (3%)
4. Superstition	-	1	-	-	-	-	-	2	-	-	1	-	-	1	5 (4%)
Total	13	12	6	7	16	15	15	13	5	10	6	7	7	2	134
Spiritual Well-Being	1	-	-	-	1	2	3	-	1	-	-	-	-	-	8 (11%)
1. Enjoying life	1	3	2	2	2	3	1	2	-	-	-	1	5	-	22 (29%)
2. fulfilled life / potential	1	-	-	2	1	1	-	-	-	1	-	-	-	-	6 (8%)
3. Quality of life	1	2	-	-	1	-	-	-	-	-	1	-	2	-	7 (9%)
4. Happiness	-	2	-	-	1	1	1	1	1	1	2	-	5	-	15 (20%)
5. Zest for life	-	-	1	-	1	-	1	1	-	-	-	-	-	-	4 (5%)
6. Contentment / at ease	1	-	-	-	1	1	1	1	1	1	1	1	3	1	13 (17%)
Total	5	7	3	4	8	8	7	5	3	3	4	2	15	1	75
Social Well-Being	-	-	-	-	2	1	1	-	-	-	-	-	-	-	4

Models of Health

Figure 2. Individual and Their Health

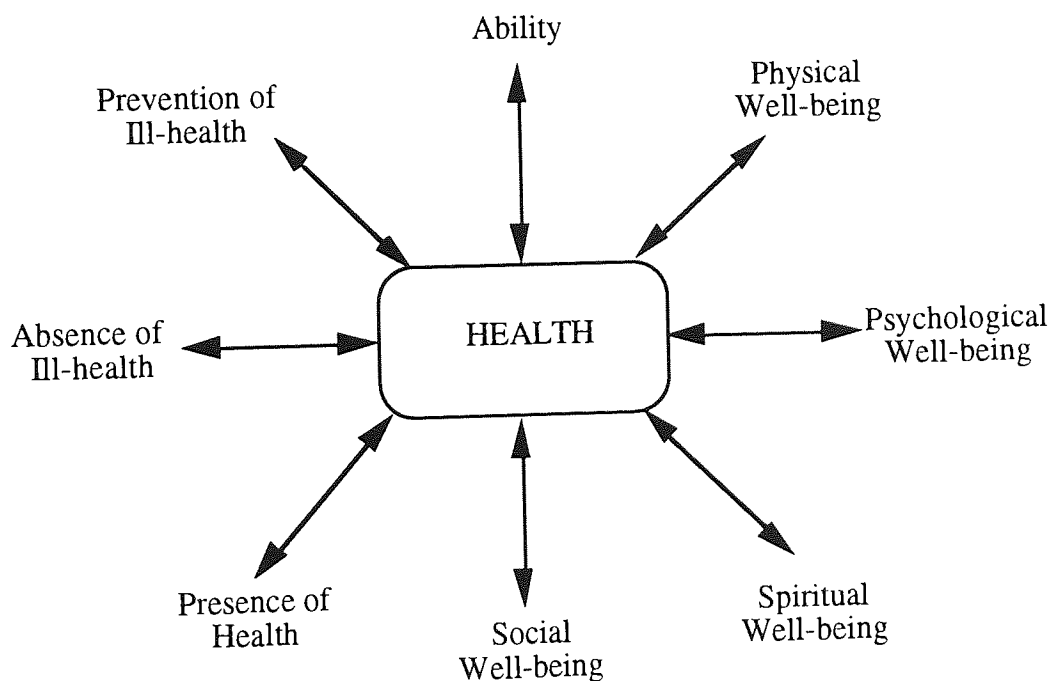


If the quantitative measures of health are looked at (Figure 2), then the pattern or model that emerges is that of a mechanistic, structured model, a model that would not be inconsistent with a medical approach to health. The elements included in the model are the known and current measurements of ill-health with additional features such as work and leisure effects. The latter two effects are often not included in the medical model. There is, however, an emerging interest in exercise within the medical model. Not the same attention is being given to the effects of work.

In this survey 92% of the people said they felt healthy; on many of the measures they scored a higher or more positive response than would be expected in the population generally. From this it could be inferred that people at work are healthier than the general population.

If the comments that people made are looked at, there is still, in many cases, a use of language which related to the medical model, i.e. smoking, drinking, exercise, diet. There was also the use of other language which showed that some people saw health as wider than the medical or systemic model (Figure 3). For them, health included a sense of responsibility, a responsibility to prevent ill-health; a presence of health which they could articulate, an absence of ill-health or disease which they knew made them healthy. For others health was seen as physiological, physical function, physical imaging, physical responses.

Figure 3. Perceptions of Health



For others health is of the mind, of the soul, it is a feeling which they know, have felt, can describe. This second area of personal perceptions is the area which needs to be further explored. Some of the people in this survey who described themselves as healthy had medical or disease labels, some of them felt stressed, others had sleeping difficulties. Some described unhappiness, concern for their health, or personal behaviour which they knew was 'bad for their health'. Other people described their joy in living, their contentment, their happiness, their healthiness. The differences between the two groups were not necessarily due to having a disease or medical

condition. It was other factors, personal to an individual and within their own framework of positive or negative, good or bad, healthy or diseased, which people used to describe their perceptions of health.

This is the area where more work needs to be done, to identify the personal frameworks of individuals to see if there are commonalities. Do people in different organisational positions think differently about health; are they conditioned in relation to their expectations, the demands they expect to be placed on them, the rewards they expect to receive. It may be that people in this survey responded with the answers they felt were expected; it could be that in personal and private conversation a different, more personal model of health would emerge.

Effects of Work on Health: Do people who work feel their health has ever been affected for good or bad by their work? (Research Question 2)

Job Done

The range of jobs that people do were grouped together and analysed using the CODOT system (see Appendix 7). In this analysis only the major categories of jobs have been identified, although it would be possible to give quite detailed information on jobs using a decimal coding system. The main responses to work done are shown in table 44.

Table 44: Work Done by CODOT Number and Gender

	Work done	Male n=290	Female n=165	No gender	Total
1	Managerial	11 (4%)	0	0	11 (2%)
2	Professional occupations supporting management & administration	19 (7%)	7 (4%)	0	26 (6%)
3	Profs. related to education, welfare and health	18 (6%)	50 (30%)	1	69 (15%)
4	Literary, artistic & sports	3 (1%)	1 (1%)	0	4 (1%)
5	Prof. related to science, engineering, technology	29 (10%)	9 (5%)	1	39 (8%)
6	Management (excluding general management)	46 (16%)	7 (4%)	0	53 (12%)
7	Clerical	11 (4%)	46 (28%)	0	57 (12%)
8	Selling	1 (0.3%)	2 (1%)	0	3 (1%)
9	Security, Protective service	28 (10%)	2 (1%)	0	30 (6%)
10	Catering, cleaning, hair-dressing, personal services	7 (2%)	12 (7%)	0	19 (4%)
12	Materials processing, (excluding metals)	6 (2%)	2 (1%)	0	8 (2%)
13	Making, repairing, (excluding metals & electric)	15 (5%)	6 (4%)	0	21 (5%)
14	Processing, making & repairing--metals & electrical	83 (29%)	15 (9%)	2	100 (22%)
15	Painting, repetitive assembling, products inspection, packaging	2 (1%)	3 (2%)	0	5 (1%)
17	Transportation	2 (1%)	2 (1%)	0	4 (1%)
18	Miscellaneous	6 (2%)	1 (1%)	0	7 (2%)
19	No response	3 (1%)	0	0	3 (1%)
	Total	290 (100%)	165 (100%)	4	459 (100%)

Nearly a quarter of the sample, 100 people (22%), did a job in CODOT major group 14. This job relates to processing, making, repairing and related activities in the area of metal and electrical work. This is not surprising for the West Midlands which has a long history of metal forming. The next highest group is group 3, professions related to education, welfare and health, with 69 people (15%). This would also be expected with three organisations in the sample having the potential to classify people into this group, organisations 5, 6, and 8. Groups 11 and 16, which would include agriculture and construction, are not represented at all in the jobs that people were doing at the time of this survey. At one time an organisation may have employed their own construction maintenance staff, and indeed one would have expected at least one or two such people to be included in the sample. However, they may have been in the group which did not return the questionnaire, or organisations no longer employ such staff, preferring to employ contractors to do this work as and when necessary. In the same vein, at one time organisations may have employed a gardener, to look after the organisations grounds. Organisations may now be using contract gardeners to do this sort of work.

Women were to a large extent employed in group 3, professions related to education, welfare and health, 50 (30%) and category 7, clerical, 46 people (28%). It could be argued that these are traditionally female employment areas. It is difficult when reading the general literature on social status of women to find out what their occupation is, so much of the classification is done on the husbands occupation (Cartwright, 1983).

Men in this sample are employed in the traditional area of category 14, processing, making and repairing metals and electrical, with 83 men (29%) being employed. The next largest is category 6, management, excluding general management, with 46 men (16%) active in this occupational group.

Tenure

Almost one third of the sample, 148 (32%), have been in their present job for five years or less, with the percentage being much higher for women (46%) than for men (25%). The sample is positively skewed towards the lower end of the scale with three quarters of the sample being included in the 20 years or less category. Only 12% of the female population in this sample have been in their job for between 21 to 40 years. With men this is a third of the population, i.e. 30% (see table 45).

Table 45: Tenure by Gender

Tenure	Male	Female	Total
0-1 years	17 (6%)	16 (10%)	33 (7%)
2-5 years	56 (19%)	59 (36%)	115 (25%)
6-10 years	42 (14%)	25 (15%)	67 (15%)
11-15 years	43 (15%)	21 (13%)	64 (14%)
16-20 years	44 (15%)	22 (13%)	66 (15%)
21-25 years	27 (9%)	14 (8%)	41 (9%)
26-30 years	29 (10%)	5 (3%)	34 (7%)
31-35 years	14 (5%)	2 (1%)	16 (4%)
36-40 years	10 (3%)	1 (0.6%)	11 (2%)
41+ years	8 (3%)	0	8 (2%)
No response			4 (1%)
Totals	290	165	459 (100%)

The length of time people remain in one job now has changed dramatically; until the 1970's a person could expect to find a job on leaving school and still be working for that employer at retirement age. Women in this sample do seem to have a different tenure pattern to men; this is probably a reflection of women in the labour market. Women's work roles are often seen as the one which can be disrupted to have children, care for sick members of the family, to move to different parts of the country to accommodate husbands or partners work. For the tenure years 6 - 25 years, there is a fairly even pattern between men and women; however from 26 years onwards, women constitute a smaller proportion of the working population as described in this sample.

Other Jobs

In this sample 239 people (52%) had done other jobs in their current organisation (see table 46). A total of 166 men (36%) had done other jobs, the highest CODOT category being 14, with 59 men (13%) in this group. The next highest category was 9, security and protective service, with 18 men (4%) who had done other jobs in their organisation in this group. The most frequently done other job in a current organisation for this group of 71 women (15%) was category 7, clerical, with 22 women (5%) included. The next highest category was 3, professions related to education, welfare and health, with 13 women (3%) in this group.

When the sexes are taken together the highest category was 14, with 70 people (15%) included; category 7 was next with 34 people (7%) included. The remainder of distributions is shown in table 46.

Table 46: Other Jobs Done

CODOT	M	F	No response gender	Total
1				
2	7 (2%)	3 (1%)	-	10 (2%)
3	5 (1%)	13 (3%)	-	18 (4%)
4	3 (1%)	1 (0.2%)	-	4 (1%)
5	14 (3%)	2 (0.4%)	-	16 (3%)
6	17 (4%)	2 (0.4%)	-	19 (4%)
7	12 (3%)	22 (5%)	-	34 (7%)
8	3 (1%)	0	-	3 (1%)
9	19 (4%)	2 (0.4%)	-	21 (5%)
10	2 (0.4%)	1 (0.2%)	-	3 (1%)
11	-	-	-	-
12	4 (1%)	1 (0.2%)	-	5 (1%)
13	18 (4%)	9 (2%)	-	27 (6%)
14	59 (13%)	10 (2%)	1 (0.2%)	70 (15%)
15	1 (0.2%)	3 (1%)	1 (0.2%)	5 (1%)
16	-	-	-	-
17	2 (0.4%)	0	-	2 (0.4%)
18	-	2 (0.4%)	-	2 (0.4%)
19	124 (27%)	94 (20%)	2 (0.4%)	220 (48%)
Total	290 (63%)	165 (36%)	4 (1%)	459 (100%)

The flexible nature of work and the changes that have come about through developments in technology mean that more people will in the future do 'other jobs'.

Other jobs could of course be the basis of organisational progression or promotion. People in category 3 could be the same person being: a student nurse, a staff nurse and a sister; other jobs in the same category, but progressing. Some people may have done other jobs because their job no longer existed, and they picked up similar work in the organisation.

Other Organisations

A high proportion of people, 312 (68%), had worked in other organisations. In this area of work all groups are covered including agriculture and construction. The highest group was 14 with 72 (16%) having done this type of work before. The next highest category was group 7, clerical, with 63 (14%); followed by category 3, professional, education, welfare and health; and category 5, professional scientific being equal with 33 people (7%) who had done jobs in other organisations. This distribution is shown at table 47.

Table 47: Jobs Done in Other Organisations

CODOT	M	F	No response gender	Total
1	2 (0.4%)	-	1 (0.2%)	3
2	4 (1%)	1 (0.2%)	-	5 (1%)
3	12 (3%)	20 (4%)	1 (0.2%)	33 (7%)
4	5 (1%)	-	-	5 (1%)
5	29 (6%)	4 (1%)	-	33 (7%)
6	6 (1%)	-	-	6 (1%)
7	22 (5%)	41 (9%)	-	63 (14%)
8	9 (2%)	6 (1%)	-	15 (3%)
9	14 (3%)	-	-	14 (3%)
10	4 (1%)	13 (3%)	1 (0.2%)	18 (4%)
11	1 (0.2%)	-	-	1 (0.2%)
12	7 (2%)	2 (0.4%)	-	9 (2%)
13	7 (2%)	1 (0.2%)	-	8 (2%)
14	62 (14%)	9 (2%)	1 (0.2%)	72 (16%)
15	4 (1%)	2 (0.4%)	-	6 (1%)
16	7 (2%)	-	-	7 (2%)
17	2 (0.4%)	1 (0.2%)	-	3 (1%)
18	6 (1%)	5 (1%)	-	11 (2%)
19	87 (19%)	60 (13%)	-	147 (32%)
Total	290 (63%)	165 (36%)	4 (1%)	459 (100%)

This section reflects the flexibility of work in the current climate; it could also be a reflection of people doing a job on leaving school and then making changes as opportunities occurred. Some occupational groups will change from organisation to organisation to gain experience, increase their knowledge or to stay in the job market.

There is no way of knowing which, if any, of these people who changed organisations moved from personal choice. Some occupations are known to be short-lived, or not likely to encompass a person's whole working life, i.e. policemen can retire at 45 years of age. Other occupations are by their nature precarious, i.e. an actor or entertainer. The recession in the West Midlands region will mean that people will have to move from and to other organisations. The concept outlined by Handy (1989) in his discussion of new careers:

"as management becomes more professional, with more professional-type qualifications, the executives will begin to think of their careers as professional careers, as a sequence of jobs which may or may not be in the same organisation." (p. 125)

Hours Worked

In this sample 42 people (9% of the total sample) worked part-time. Part-time is defined as less than full time, i.e. 37 hours per week. Six men (2%) worked part-time and 36 women (22%) worked part-time.

The next highest group in both sexes was 37-40 hours per week. In total this was 181 (39% of the population), with 100 (34%) of the male sample, and 81 (49%) of the female sample. The next group was 41-50 hours per week. In this category, 137 people (30%) said they worked these hours, that is 115 men (40%) and 22 women (13%). The final group of 51+ hours per week was worked by 54 people, 12% of the responding population, this being made up of 44 men (15%) and 10 women (3%). Forty-one people (9%) did not respond to this question.

Table 48: Hours Worked by Gender

Hours	Men	Women	Total
Part time	6 (2%)	36 (22%)	42 (9%)
37-40 hours	100 (34%)	81 (49%)	181 (39%)
41-50 hours	115 (40%)	22 (13%)	137 (30%)
51+ hours	44 (15%)	10 (3%)	54 (12%)
No response	25 (9%)	16 (10%)	41 (9%)
No gender			4 (1%)
Total	290	165	459 (100%)

The average working hours per week in the UK are 37 1/2. Some people, especially married women, work part-time in the workplace in addition to a full time job in the home. Some men, who are single or a single parent, have a similar role to married women or women who are single parents.

In this sample, 12% of people worked hours in excess of those being proposed as a standard for the European Community in the Social Charter, i.e. 48 hours per week. Men seemed to be working the longer hours, with women more concentrated into the part-time and standard working week. Many employees rely on overtime to increase their wage. Not all people who work excessive hours expect to get paid for that work. Some people would take time in lieu, for others it would be seen as part of the job to be done and included in the total remuneration package.

Economic activity is an important issue in a community, how people earn their money, the work pattern. For the region as a whole the following pattern emerges.

1. West Midlands County (WMC)

In the WMC in the age group 16 - 64, in the 1991 census there were 802,392 men; this was 86.5% of the total male population. Of these men, 60.7% were employed full-time; 1.8% were employed part-time; self-employed status was attributed to 9.5%; 1.3% were on a government scheme and 13% were unemployed. Students accounted for 5.3% and a further 13.5% were economically inactive.

The total number of women who were economically assessed between 16 - 59 years of age was 738,433; this is 67.5% of the total female population. For women, 35.4% were employed full-time, 20.8% part-time; only 2.6% were self-employed; 1.1% were on government schemes and 6% were unemployed. Female students numbered 5.7% and 34.2% of women in this age range were economically inactive.

2. Staffordshire County

In Staffordshire there are 338,516 men between the ages of 16 - 64 years; this represents 87.4% of the total male population. 63.9% are employed full-time; 1.8% part-time; 12.3% are self-employed; 1.4% are on government schemes and 8% are unemployed. Students accounted for 4.6% with 12.6% being economically inactive.

Women in Staffordshire between the ages of 16 - 59 years numbered 306,650; this is 68.9% of the total female population. There are 36.4% in full-time employment and 23.7% in part-time employment, with 3.8% being self-employed; 1% are on government schemes, 4% are unemployed, 5.3% are students and 31.1% are economically inactive.

3. Shropshire County

The male population in Shropshire aged between 16 - 64 years is 130,672; this is 87.8% of the total male population in the county. 60.8% of men are in full-time employment with 1.9% in part-time employment; 16.5% of men in this age range are self-employed, 1.4% are on government schemes, 4.9% are students and 12.2% are economically inactive. The unemployed totalled 7.2%.

There are 119,373 women between the ages of 16 - 59 years; this represents 67.5% of the total female population for the county. Of the number of women in this age range, 33.8% work full-time; 24% are working part-time; 4.9% are self-employed; 1% are on government schemes; 5.8% are students; 32.5% are economically inactive, and 3.8% are unemployed.

4. Warwickshire County

Warwickshire had 157,834 men between the ages of 16 - 64 years; this is 88.5% of the total population. Of the people in this age group, 65.2% were employed full-time, 2.1% part-time and 13.3% are self-employed. Unemployment in this county is 6.9% for men, 1% were on government schemes, 5.5% were students and 11.5% were economically inactive.

Women in the age group 16 - 59 years totalled 143,626; this was 70.4% of all females. 36.8% are employed full-time, 24.4% part-time and 4.7% are self-employed. There are 3.8% of women who are unemployed, 6.4% are students and 29.6% are economically inactive.

5. Hereford and Worcester County

In this county there are 216,020 men between the ages of 16-64 years; this represents 88.8% of the counties male population. 62% of men are in full time employment, 21.2% work part-time and 16.7% are self-employed. Unemployed account for 7.1%, 0.9% of men are on government schemes and 5.2% are students. There are 11.2% of men who are economically inactive.

Women in this county between the ages of 16 - 59 years number 197,904. This is 69.9% of all women in the county. Of this 69.9%, 35.7% are employed full-time, 24.9% are working part-time, 5% are self-employed, 0.7% are on government schemes, 3.7% are unemployed, 6% are students and 30.1% are economically inactive.

6. West Midlands Regional Health Authority Area

Within this regional health authority area there are 1,645,434 men between the ages of 16 - 64 years; this represents 87.3% of the male population. 62% are employed full-time, 1.9% part-time and 11.9% are self-employed. There are 1.3% of men on

government schemes, 10.2% unemployed and 12.7% are economically inactive. There are 5.1% students.

There are 1,505,986 women aged 15 - 59 years, which is 67.5% of all women in the region. There are 35.6% in full-time employment, 22.5% employed part-time and 3.5% self-employed. In this age group 1% of women are on government schemes, 4.9% are unemployed, 32.5% are economically inactive and 5.7% are students (OPCS, 1992).

For men, the highest number of people in this age group of 16-64 years was in Hereford and Worcester; for women between 16-59 years the highest number was Warwickshire. Unemployment was highest for men and women in the West Midlands county. Women across all the counties were much higher in the part-time categories and lower in the full-time employment and self-employment categories.

People travel from all the other counties to work in the West Midlands County, this being central to the region. Some of the employment patterns described in the surrounding counties may be as a result of jobs disappearing in the central county as well as in a local county. Also the West Midlands County was the hub of the metal forming activities for the region with smaller organisations feeding the main manufacturers at the centre; that is, until the recession. This is why it is important to look at the region as a whole and not at counties in isolation.

The women in this sample would seem to be following the regional trend with 22% working part-time, the regional trend being 22.5%. The same trend would be true of men in both the sample and the region. This is half the figure found in a study by Robinson and Wallace (1984) of 21 employing organisations. They found that across these organisations 42% of all women were working part-time compared to men of whom 6% were working part-time. These authors found that in industrial, banking, hospital and local government organisations studied, three-quarters of the lowest

occupational categories were filled by part-time women workers; this it was felt gave lower chances of promotion, overtime or shift payment.

Shifts

132 people (29%) worked shifts; their distribution through the organisations is shown at table 49. The most common work shift pattern was shift rotation, 105 (23% of the sample). Overall response to working shifts shows major differences between the sexes, with 107 men (37%) working shifts compared to 24 (15%) of the female sample.

Table 49: Shift Working by Organisations

Organisation	Worked shifts	% of Organisational Response	
1	35 (26%)	n=41	83%
2	17 (13%)	n=45	38%
3	17 (13%)	n=20	85%
4	29 (22%)	n=36	81%
5	14 (11%)	n=36	39%
6	0	n=34	0
7	0	n=37	0
8	4 (3%)	n=32	13%
9	3 (2%)	n=28	11%
10	1 (0.7%)	n=40	3%
11	0	n=25	0
12	4 (3%)	n=21	19%
13	8 (6%)	n=50	16%
14	0	n=13	0
No survey no.		1	0
Total	132 (100%)	459	29%

Organisations 6, 7, 11 and 14 do not require shift working. Organisations 1, 2, 3, 4, and 5 have a regular shift working pattern, and organisations 8, 9, 10, 12 and 13 have a somewhat reduced demand as demonstrated in this sample. The organisations with the highest number of shift workers are organisation 1, the emergency service, with 35 (26%) and organisation 4, the car component manufacturer, with 29 employees (22%) working shifts.

Table 50: Perceptions of the Effects of Work on Health by People Who Work Shifts

Work/Health Perception	Good 1 (n=58)	Fair 2 (n=94)	No effect 3 (n=126)	Poor 4 (n=124)	Bad 5 (n=31)	No resp.	Total
Number who worked shifts (%)*	14 (24%)	35 (37%)	35 (28%)	31 (25%)	8 (26%)	9	132

* % of both sexes who responded to effects of work on health

The people who worked shifts and scored 2 or fair to the question on effects of work on health numbered 35, this constituted 37% of all the people in the sample who scored 2 or fair to this question. The remaining categories of good (1), no effect (3), Poor (4) and bad (5) all contained around a quarter of the group who responded to the question on health effects of work and had also worked shifts.

When comparing these perceptions of health on work with the views held by people who work shifts on the effects of life-style on health the following pattern emerges:

Table 51: Perceptions of Health by People Who Work Shifts: Work and Life-style

	1	2	3	4	5	Total
Health effects on work	14 (11%)	35 (28%)	35 (28%)	31 (25%)	8 (7%)	123
Health effects on life-style	48 (40%)	43 (36%)	19 (16%)	8 (7%)	2 (2%)	120

People held more positive views about the effects of life-style on health than the effects of work on health, remembering that both these populations work shifts.

People in this survey who worked shifts felt that the effects of work had in the main been either positive or neutral with 64% of the 132 recording good, fair, or no effects scores to the question; 39 (30%) recorded poor or bad effects. There is no way of knowing if the work effects would include thoughts on shift working (see table 52).

Null Hypothesis: There is no statistically significant association between people who felt healthy and people who worked shifts.

Table 52: Feelings of Health and Shift Working

	Worked shifts	Did not work shifts	Total
Healthy	129	294	423
Not healthy	3	30	33
Total	132	324	456

$$X^2 = 6.8; \text{d.f.} = 1; p < 0.01$$

A chi squared of 6.8 with 1 degree of freedom has a probability of less than 0.01, and the null hypothesis is not accepted. This strongly suggests there is a statistically significant association between feelings of health and people who work shifts. The likelihood of a X^2 as big as 6.8 occurring by chance is less than 1/100. The small number contained in one of the cells in this test means the results should be viewed with caution. There is a difference between people who felt healthy and who worked shifts. If people who work shifts feel healthy, it could be due to various factors; i.e. people who are not healthy could not work shifts or have a legitimate reason for not working shifts, or people who are not healthy have been excluded from working shifts.

Shift workers gave the following responses to the effects of shift working on sleep patterns:

Table 53: Sleep Responses by Shift Workers

Sleep Response	Shift workers (n=132)
Sleep well	86 (65%)
Difficulty getting to sleep	17 (13%)
Disturbed sleep	30 (23%)
Difficulty in waking up	3 (2%)
Waking early.	16 (12%)

The distribution between the five categories for effects of work on health are shown at table 54, with 46 people (52%) being in the 'poor' or 'bad' categories.

Table 54: Effects of Work on Health by Disability

Work Effects	Good 1	Fair 2	No effect 3	Poor 4	Bad 5	Total
Disability	8 (9%)	21 (23%)	13 (15%)	29 (33%)	17 (19%)	88

When this group of people are looked at for their working patterns, 22 men (8%) and five women (3%) worked shifts, a total of 27 people (6%).

Table 55: Disability Amongst Shift Workers by Organisation and Organisational Position and Gender (f = female, m = male)

Organisation	Sn. Manager	Md. Manager	Operative	Total
1	0	1 (f)	4 (m)	5
2	0	0	6 (m)	6
3	0	2 (m)	2 (m)	4
4	0	3 (m)	3 (m)	6
5	1 (f)	0	1 (f)	2
8	0	0	2 (f)	2
13	0	0	2 (m)	2
Total	1	6	20	27

Organisations 1, 2, 3, 4, 5, 8 and 13 had people in their sample who had disabilities, handicap or long standing illness who also worked shifts.

Shift working is a difficult area to research; individuals respond to shift working in very idiosyncratic ways. It is difficult to make firm generalisations about the effects of shift working on individuals, the best that can be done is a 'tendency towards' certain conditions.

Work Activities

Fifty eight people (13%) felt their health had been affected for good by the work they did; 94 people (21%) felt their health had been affected fairly by the work that they did; 126 (28%) felt there had been no effect; 124 (27%) felt the effect had been poor and 31 (7%) felt the effect had been bad (see table 56). Twenty-six people (6%) did not respond to this question.

Table 56: Effects of Work on Health

	Good (1)	Fair (2)	No effect (3)	Poor (4)	Bad (5)	No resp.	Total
Yes	58 (13%)	94 (20%)	126 (27%)	124 (27%)	31 (7%)	26 (6%)	459

When looking at the different aspects of the scale, a third of the sample (152) felt that work had been positive in relationship to their health, scoring good or fair, (34%).

This figure did not change dramatically when divided for the sexes (males 33% and females 34%).

For the 'no effect' category the overall figure of 126 (27%) for both sexes was recorded, and again there were no significant differences when broken down into the sexes (males 27% and females 28%).

In the 'poor' effect category an overall response rate of 124 (27%) was recorded for both sexes. This did not vary greatly when divided for the sexes (males 28%, females 25%). In the 'bad' category there was a general response of 31 (7%) for both sexes and again no significant difference was found when divided for the sexes (male 6% and female 7%) (See table 57). However if the two negative comment groups, 4 and 5, are taken together, they total 155 (34%), the same percentage as for the positive group.

Table 57: Effects of Health and Work by Gender.

1 (Good)		2 (Fair)		3 (None)		4 (Poor)		5 (Bad)		Total
M	F	M	F	M	F	M	F	M	F	n=459
35	23	61	33	80	46	82	42	19	12	433
12%	14%	21%	20%	27%	28%	28%	25%	6%	7%	94%
58 (13%)		94 (21%)		126 (28%)		124 (27%)		31 (7%)		433

Table 58: 'No comment' by Org. Position and Perception of Work on Health

	1 (n=58)	2 (n=94)	3 (n=126)	4 (n=124)	5 (n=31)	Total (n=459)
Senior managers n=50	0	3	9	1	0	13 (26%)
Middle managers n=88	1	3	13	0	0	17 (19%)
Operative n=316	13	12	56	4	0	85 (27%)
Totals	14 (24%)	18 (19%)	78 (62%)	5 (4%)	0	116 (27%)

Marginally the highest no comment figure is given in the operatives group with 85 operatives (27%) giving no comment. The next highest group was senior managers, 13 (26%), and 17 middle managers (19%) gave no comment. These are the people who did not support their numerical score with a comment.

Table 59: Effect of Work on Health by Organisation

Org.	(1) Good	(2) Fair	(3) No effect	(4) Poor	(5) Bad	No resp.	Total
1	2 (5%)	11 (27%)	8 (20%)	16 (39%)	3 (7%)	1 (2%)	41
2	7 (16%)	8 (18%)	14 (31%)	12 (27%)	1 (2%)	3 (7%)	45
3	4 (20%)	2 (10%)	8 (40%)	5 (25%)	0	1 (5%)	20
4	3 (8%)	9 (25%)	13 (36%)	3 (8%)	0	8 (22%)	36
5	9 (25%)	7 (19%)	5 (14%)	10 (28%)	4 (11%)	1 (3%)	36
6	4 (12%)	4 (12%)	4 (12%)	16 (47%)	4 (12%)	2 (6%)	34
7	4 (11%)	4 (11%)	14 (38%)	10 (27%)	5 (14%)	0	37
8	3 (9%)	9 (28%)	8 (25%)	8 (25%)	3 (9%)	1 (3%)	32
9	3 (11%)	7 (18%)	8 (29%)	5 (18%)	4 (14%)	1 (4%)	28
10	4 (10%)	10 (25%)	13 (33%)	8 (20%)	4 (10%)	1 (3%)	40
11	4 (16%)	2 (8%)	8 (32%)	10 (40%)	1 (4%)	0	25
12	3 (14%)	5 (24%)	8 (38%)	2 (10%)	0	3 (14%)	21
13	5 (10%)	11 (22%)	11 (22%)	19 (38%)	2 (4%)	2 (4%)	60
14	3 (23%)	4 (31%)	4 (31%)	0	0	2 (15%)	13
No no.	0	0	0	0	0	0	1
Total	58 (13%)	93 (20%)	126 (27%)	124 (27%)	31 (7%)	26 (6%)	459 (100%)

Perceptions of the effects of work on health varied between organisations. The highest percentage in the 'bad' category was 14% in organisations 7 and 9. The highest percentage in the 'poor' category was 47% in organisation 6. The highest percentage in the 'no effect' category was 40% in organisation 3. The highest percentage in the 'fair' category was 31% in organisation 14, and the highest in the 'good' category was 25% in organisation 5.

The comments that people made to support their perception of the effects of work on health are as follows:

Positive comments associated with 'good' scores were:

"If I've done my job properly, it makes me feel good, and I feel good most of the time." (0260)

"I love my work, and it provides me with fulfilment." (0661)

In the group who recorded 'fair' to this question, some of the comments made were less positive than would be expected from the numerical score, e.g.:

"Worry and travelling, especially driving at speed" (1104)

"Enjoyable job, some drawbacks with over commitment to research interests and consequent stress" (0845)

"Sometimes in my job it can become stressful and worrying" (0960)

These people seem to see fair as meaning 'only fair'. Other people in this group made more positive comments:

"It is hard work, but I enjoy it and if I am away from it for more than a week, I tend to become despondent." (0865)

"Enjoy my employment, and never regretted enrolling into my occupation." (0102)

In the group of people who felt that work had had 'no effect' on their health, there were a large number of 'no comments'; however, comments that were made included:

"Physical aspects are good for you, but shifts and smoke inhalation are bad for you." (0136)

"Despite having worked in a foundry during my early working life, I seem to have been fortunate enough to have escaped the respiratory complaints which used to prevail in this industry. Subsequent employment has been in relatively non-hazardous environments." (0259)

"Health not really affected although the last 9 years at work has personally been depressing as I do not really enjoy my present job. I find it difficult to get out of my present job situation." (1341)

"Shift work and piece work are not ideal working conditions but they don't seem to have any effect on me." (0334)

In this group the responses seem to be both positive and negative. There does seem to be an understanding of the effects of work on health and how that affects individuals.

Of the people who scored 4 or 'poor' to this question, the following comments were recorded:

"I am stressed and unhappy, unfulfilled and angered by the leadership of the management." (0632)

"Not being able to move from your seat, 10 mins. break in morning, 20 mins. for lunch and 10 mins.. of an afternoon is insufficient for an 8 hour day." (0520)

"Eyesight impaired by constant close work" (1043)

"Progressive deafness over 40 years in noise." (0213)

"Hearing loss, due to noise levels. Back ache due to bending and lifting." (0252)

"Ladder climbing, installation, work pressure brings on angina pains in my chest." (1170)

Out of this group of 124 people, 50 people included 'stress' or 'pressure' in their answer. This was 28 men (34%) whose comments included:

"Stress levels can be high." (0713)

"Smoke inhalation and intense short periods of stress." (0132)

and 22 women (52%). Women's comments included:

"Too much stress, too many demands." (0814)

"At various times/jobs, self perception/stress/confidence in future are all job related, and reflect current stability of and satisfaction with job." (0832)

"On the whole my job is satisfying, however, there is a certain amount of stress, the usual effect is weight loss (good or bad?)." (1365)

People have a mixed perception of health in relation to work, some aspects are purely physical, others perceived more as psychological.

In the group who felt that work had had a 'bad' effect on their health, the following comments were recorded:

"A lot of mental stress working for present employer, due to it setting people on then making them redundant." (0953)

"Due to the emergency nature of my work sometimes adequate precautions against injury, long or short term, emotional and physical, can not be taken." (0163)

"Excessive strain from short staffing and further study, raised blood pressure has been a symptom of stress." (0524)

Other people quoted specific physical effects: tenosynovitis, previous injuries, backache, eye strain, reduced hearing; all these conditions related to occupation in the opinion of the respondents.

Work and its Effects on Health

From the comments people made on the effect of work on health, wide ranging views can be identified:

"I love my work and it provides me with fulfilment." (0661)

"You must enjoy the position you hold in any employment, this way you get no worries or stress." (0365)

"I enjoy my work place and people I am with so therefore I feel alright." (1443)

These are positive comments from people who scored 1 or 'good' to the effects of work on health. A second group would be expected to make 'positive' comments, that is, those people who scored 2 or 'fair' in relation to the effect of work on health. The written comments did not all follow that supposition. The following are comments made to support a 2 score:

"My role is very stressful at times, this stress is bound to have an effect, in saying that, I enjoy my job." (0532)

"Like what I do but sometimes a lot of pressure. Pressure has affected my adversely on occasions." (1357)

"The rushing around and being polite all the time, even when customers is nasty gets you down." (1420)

"Fair, because on my job I do a lot of lifting, so I start aching." (0247)

People seem to be interpreting 'fair' as a negative of 'good'. 'Good', people know, but it seems that people have difficulty with fair on a scale from good to bad.

The comments made by people in relation to their perception of work on health are utilised within this text to highlight employees views. Equally interesting are the people who made no comment. Twenty five people (5%) gave no numerical score to this question, although two of these people gave comments:

"Extreme pressure, yet satisfying" (0709)

"I am not interested in work activities, because once my day has finished, I am glad to get home." (0926)

The first comment comes from a 43 year old man who is a middle manager in organisation 7, and the second comes from a 30 year old woman who is an operative in organisation 9. The remaining 24 people made no comment (see table 59).

Null Hypothesis: There is no statistically significant association between peoples' perception of their health and their perceptions of the effect of work on their health.

Table 60: Effects of Work on Health and Feeling Healthy

	Good effect	Fair effect	No effect	Poor effect	Bad effect	Total
Healthy	55	88	122	113	29	407
Not healthy	3	7	4	11	3	28
Totals	58	95	126	124	32	435

$$X^2 = 4.2; \text{ d.f.} = 4; p < 0.4$$

A X^2 of 4.2 with 4 degrees of freedom has a probability of less than 0.4, and the null hypothesis is not rejected. This suggests that the association between people's perception or feelings of healthiness and their perceptions of the effects of work on health are due to the effect of chance. Again, small numbers in some of these cells means that the results should be interpreted with caution.

Felt Ill in Last Twelve Months

A total of 449 people (98%) responded to this question, and of this number, 278 (62%) had felt ill during the last twelve months. This was made up of 166 men (37%) and 109 women (24%), with three people of 'no gender' being in this group. When looked at for their responses to the effects of work on health the following categories emerge.

Table 61: Effects of Work on Health and Feeling Ill

1 (n=58)	2 (n=94)	3 (n=126)	4 (n=124)	5 (n=124)	Total
31 (53%)	58 (61%)	63 (50%)	95 (77%)	24 (19%)	271

In the five categories, the highest response was in '4', the group who felt that the effects of work had had a poor effect on their health. A total of 95 of this group

(77%) had felt ill during the past twelve months (see table 61). In all groups at least 50% of the people had felt ill in the past twelve months.

Table 62: Health Average by Gender by Feeling Ill in Last Twelve Months

Above Average		Average		Below Average		Total (n=459)
M	F	M	F	M	F	
45 (16%)	35 (13%)	116 (42%)	68 (25%)	5 (2%)	6 (2%)	
80 (17%)		184 (40%)		11 (2%)		275 (60%)

A total of 275 people (60%) who responded to the health average question had felt ill during the last 12 months. The highest proportion was in the group who felt their health was 'average' with 40% (184 people) feeling ill; this was the highest response for both men (116 - 42%) and women (68 - 25%) (see table 62).

Taken Time Off Work

The data would suggest that the majority of reasons that people take time off work for ill health are self limiting, things like colds, sickness and diarrhoea, general aches and pains. People can self certify for sickness absence up to seven working days (Kloss, 1989), they do not have to see a doctor to sanction their illness episode under that time. Self certification came into being in 1982 with the Statutory Sick Pay (Medical Evidence) Regulations 1985 (HMSO, 1985B). This was partly a reflection and acknowledgement that the majority of illness is self limiting, and not usually requiring the endorsement of a GP that the person is ill. Also, there is so little a doctor can do for the majority of people with colds and flu, that the best advice is to stay in bed, keep warm and drink plenty of fluids. There is no need for medical intervention. If events progress beyond that time without improvement, then it is possible and probable that there needs to be some sort of medical intervention. In many cases this will be a prescription for medication to relieve symptoms.

Research carried out at a Head Post Office in Wolverhampton indicated that :

"there was no statistically significant change in the frequency and severity of sickness absence, comparing two years before self certification and three years after self certification." (Lim, 1985).

The employer is responsible for providing a financial safety net for employees who are off sick for ill health, whether the condition is occupational related or not. The first three days are not covered by this arrangement unless there is a contractual arrangement, but payment of some level for a period of up to twenty eight weeks is part of this arrangement (Kloss 1989). The legislation covering this action is the Social Security and Housing Benefits Act 1982 (DHSS, 1982), and the Social Security Act 1985 (DHSS, 1985).

In the past absenteeism has been a major problem to employers, people could use the notion of sickness to absent themselves from work because that was seen socially as an acceptable thing to do. It was also a difficult area for a manager to challenge when the event was endorsed by a medical certificate issued by a GP. In the past that may have been the reason that some companies employed a doctor, to look over people who said they had been ill, and to challenge the medical decision of a peer. The changes in legislation affected this situation, and made it legitimate for a manager to question absences from work whatever the cause (Taylor & Pocock, 1981). When some large organisations began to monitor employees sickness absence, there was a major reduction in sickness. An example of this is the considerable amount of work done by Peter Taylor who was the Medical Officer at the Post Office, which resulted in some instances of quiet dramatic reductions in absence, and therefore increased productivity.

When looking at this group of people who felt ill during the last 12 months for the amount of time they took off because of feeling ill, the following emerged. (The time off was calculated on the basis of working days, that is five working days per week.) Eighty-six people (31%) who responded to the question of feeling ill had not taken time off for ill health during the past 12 months; 120 (43%) had taken one week or less off work, with much smaller percentages being taken in the other categories (see table 63).

Table 63: Felt Ill and Had Time Off Work

Days	0	1-5	6-10	11-15	16-20	21-60	61+
People n=278	86 (31%)	120 (43%)	31 (11%)	11 (4%)	8 (3%)	11 (4%)	11 (4%)

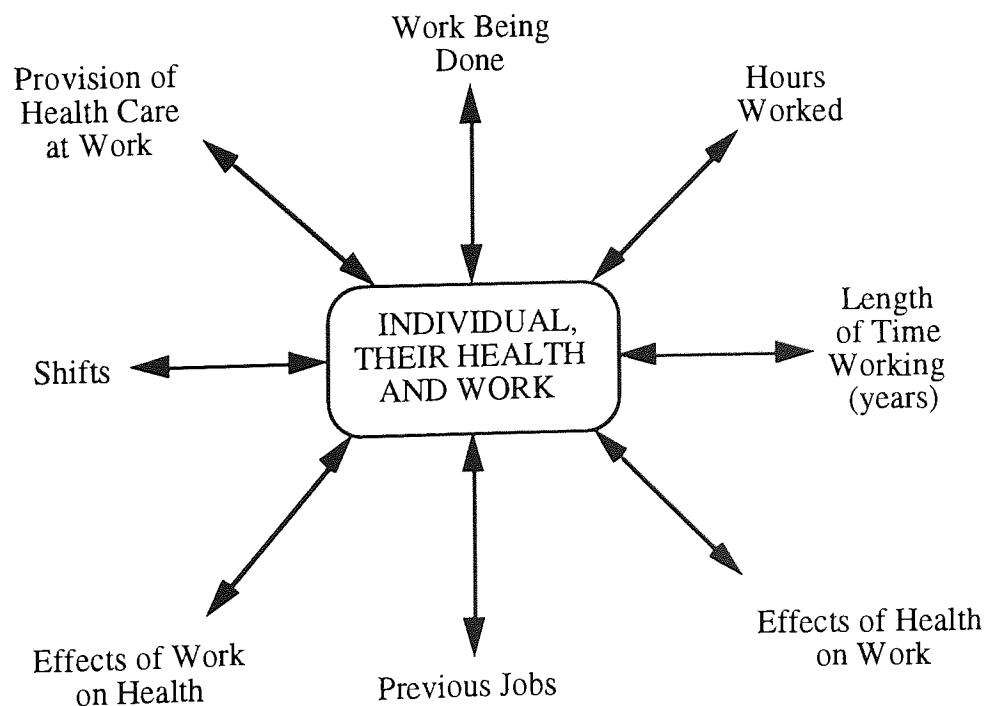
Only a small number of people had carried on working when they felt ill, 31% of the total who had felt ill.

Table 64: Feeling Ill and Time Off Work by Age Groups

Age	16-24	25-34	35-44	45-55	55-64	No resp.	Total
Felt ill	36 (13%)	67 (24%)	90 (32%)	58 (21%)	24 (9%)	3 (1%)	278 (100%)
Time off work	28 (77%)	51 (76%)	62 (69%)	38 (66%)	13 (54%)	3 (100%)	192 (69%)

It is interesting that in this sample the number of people who took time off work for feeling ill reduced with age rather than increased.

Figure 4. Individual, Their Health and Work



Leisure Activities (Research Question 3)

Do people who work feel their health has ever been affected for good or bad by their leisure activities?

Perceptions of the Effects of Leisure on Health

People held positive views on the effects of leisure on their health.

Table 65: Perceptions of Effects of Leisure on Health

1 (Good)	2 (Fair)	3 (None)	4 (Poor)	5 (Bad)	Total
211 (46%)	93 (20%)	97 (21%)	16 (3%)	10 (2%)	427 (93%)

Leisure activities are seen as having a very beneficial effect on health, or at least having only a small detrimental effect on the group as a whole; this is because of injury during exercise or conditions attributable to exercise.

Null hypothesis: There is no statistically significant association between peoples' perception of their health state and their perception of the effects of leisure on health.

Table 66: Effects of Leisure on Health by Feeling Healthy

	Good effect	Fair effect	No effect	Poor effect	Bad effect	Total
Healthy	203	88	89	14	7	401
Not healthy	9	6	8	2	3	28
Totals	212	94	97	16	10	429

$$X^2 = 12.2; \text{ d.f.} = 4; p = 0.015$$

A X^2 of 12.2 with 4 degrees of freedom has a probability of $p = 0.015$, and the null hypothesis is rejected. This strongly suggests that there is a statistically significant association between people's feelings of healthiness and their perception of the effects of leisure on their health; that people have a perception that leisure activities have a positive effect on health. Small numbers in some of the cells suggest the need for caution in interpretation. There has been a serious attempt by the Government, through the media, to encourage people to take more exercise for their health's sake. There is a strong association in people's minds between leisure/exercise and health, and many people have used this idea to explain their health and their understanding of health.

The exercise most regularly taken by both sexes was walking, 301 people (66%) indicated that this was an activity of their leisure time; 132 (29%) went swimming; 144 (31%) took other exercise, including such activities as golf and cycling. Gym work was popular with 71 people (15%) and running was popular with 68 (15%) of this population. Football and aerobics had definite gender bias at 39 (8%) and 39 (8%) of the sample, with most men doing football and most women doing aerobics. A relatively small proportion of this sample, 56 people (12%), said they took no exercise at all (see table 67).

Table 67: Type of Exercise (could be more than one response)

Exercise	Male (n=290)	Female (n=165)	Totals (n=459)
Walking	194 (42%)	107 (23%)	301 (66%)
Swimming	76 (17%)	56 (12%)	132 (29%)
Gymwork	52 (11%)	19 (4%)	71 (15%)
Aerobics	8 (2%)	31 (7%)	39 (8%)
Football	39 (9%)	0	39 (8%)
Running	54 (12%)	14 (3%)	68 (15%)
Other Exercise	105 (23%)	39 (9%)	144 (31%)
No Exercise	34 (7%)	22 (5%)	56 (12%)
No. of Responses	562	288	

Time Spent on Exercise

The amount of time spent on exercise by individuals is shown in table 68. The highest numbers were in the groups of people who said they took exercise twice a week, at 84 people (18%). Only 61 people (13%) took exercise on a daily basis. Eighty three people (18%) said they did not take exercise on a regular basis.

It is thought for exercise to be really beneficial it needs to occur three times a week and be brisk enough to produce sweating or hard breathing. Women are thought to be less fit and active than men, and it is thought that women's role with children restrict activities such as brisk walking (Gloag, 1992). In this group only 227 people (49%) took exercise on three days or more; this was 77 women (47%) and 150 men (52%). Sixty six (15%) took exercise three times a week. A lesser number of people took

exercise four times a week, 47 people (10%); 27 people (6%) five times a week; and only six people (1%) on six days of the week.

Table 68: Time Spent on Exercise

Days	Male (n=290)	Female (n=165)	Total
None	53 (18%)	30 (18%)	83 (18%)
1 day	32 (11%)	29 (18%)	61 (13%)
2 days	55 (19%)	29 (18%)	84 (18%)
3 days	50 (17%)	16 (10%)	66 (15%)
4 days	31 (11%)	16 (10%)	47 (10%)
5 days	20 (7%)	7 (4%)	27 (6%)
6 days	3 (1%)	3 (2%)	6 (1%)
7 days	46 (16%)	35 (21%)	81 (18%)
No response			4 (1%)
Totals	290	165	459 (100%)

Leisure and Disability

Eighty-six people (19%) who took exercise had a disability, handicap or long-standing illness. The distribution and the reason for disabilities is shown in table 69. The higher ICD group is 13, 'Disorders of the musculoskeletal system and connective tissue,' with 23 people (5%) having conditions in this group. All three males who felt their leisure activities had had a bad effect on their health were in this category. The conditions identified included: spinal curvature, ligament damage, rheumatic pains, arthritis, golfer's elbow, spondilitis and slipped disc.

The next highest category was ICD 8, 'Diseases of the respiratory system', with 17 people (4%) identifying this group as the reason for their disability. The conditions included were: hay fever, chest problems and asthma. Thirteen men identified conditions in this ICD group and all of them were in the positive or neutral categories for the effects of leisure on health.

The next most common ICD groups were 6 and 7, with both groups recording 11 (2%). The ICD categories are 6, 'Disorders of the nervous system and sense organs;' and 7, 'Diseases of the circulation system'. The conditions listed included glaucoma,

visual defects, epilepsy and deafness for group 6; and raised blood pressure, angina, and someone who had had a pacemaker fitted for group 7.

ICD group 9, 'Diseases of the digestive system', accounted for 10 people (11%). The conditions listed included ulcer, hernia, obesity, chronic adenoma and ulcerative colitis.

Table 69: Effects of Leisure on Health by Disability by Number of People Who Took Exercise

ICD	1		2		3		4		5		Total
	M	F	M	F	M	F	M	F	M	F	
Neoplasms (2)	1	0	0	0	0	0	0	0	0	0	1 (1%)
Endocrine (3)	1	1	0	0	1	0	1	0	0	0	4 (5%)
Nervous system (6)	5	1	1	0	4	0	0	0	0	0	11 (13%)
Circulation (7)	2	2	2	0	3	1	1	0	0	0	11 (13%)
Respiratory (8)	7	1	2	3	4	0	0	0	0	0	17 (20%)
Digestive sys. (9)	0	0	4	2	3	1	0	0	0	0	10 (12%)
Genitourinary (10)	0	1	0	2	1	0	0	0	0	0	4 (5%)
Skin (12)	1	1	0	0	0	0	0	0	0	0	2 (2%)
Musculoskeletal (13)	5	5	2	2	2	3	0	1	3	0	23 (27%)
Injury/Poisons (17)	1	0	0	0	0	1	0	0	0	0	2 (2%)
Fracture/Dislocation (800)	0	0	0	0	0	0	1	0	0	0	1 (1%)
Totals	23	12	11	9	18	6	3	1	3	0	86 (100%)

Comments Made by People to Support Their Perceptions of the Effects of Leisure on Health

In this sample most people interpreted leisure activities to mean exercise. Others mentioned art classes, relaxing, reading, gardening and fishing. In the category 'good', which would be '1', 142 men (49%) and 69 women (42%) expressed the following feelings about the effects of leisure on their health:

"Swimming 2 or 3 times weekly, relaxing and increase's suppleness" (0668)

"Leisure activities allow me to unwind and enjoy my social contacts" (0532)

"Enjoyable refreshing, a change from work, physical as opposed to mental stress from work" (0630)

"Regular visits to the gym help in reducing weight and increasing strength." (1321)

In category 2, which was 'fair', 93 (20%) responded, 53 men (18%) and 40 women (24%). The comments they made included:

"Sporting activities in my younger days have given me a good health base through my middle years." (0145)

"Outdoor activities including walking and bird watching." (0608)

"I spend a great deal of leisure time as an officer in the sea cadets corps." (1338)

In the middle group of 'no effect' a total of 97 people (21%) responded, 56 men (19%) and 41 women (25%). The comments they made to support their numerical score included:

"Because I carry on the same with or without leisure activities." (1427)

"I don't do any strenuous exercise, e.g. jogging, leisure wise." (0328)

"I have never had an injury in any sport I have played." (1051)

"My leisure activities are limited, so I think whatever I do it's going to have no effect." (0960)

In the group who felt the effects of leisure had had a 'poor' effect on their health, the total number was 16 (3%), 13 men (4%) and 3 women (2%). The comments they made to support their numerical score included:

"Inactive in recent years." (1108)

"Most of these tend to be sedentary pursuits, lack of exercise." (0865)

"Poor - sports injuries, but generally good in keeping me fit and active." (0646)

"Osteo arthritis from bone fractures from playing sports." (0554)

In group 5, the group that indicated leisure activities had had a 'bad' effect, there was a total of 10 responses (2%). These were all males, no females responded to this question. The comments the men used to support their scores included the following:

"As an angler, the weather had a lot to do with my sport, the use of caristadine dyes with maggots which was banned when found to be carcinogenic." (1125)

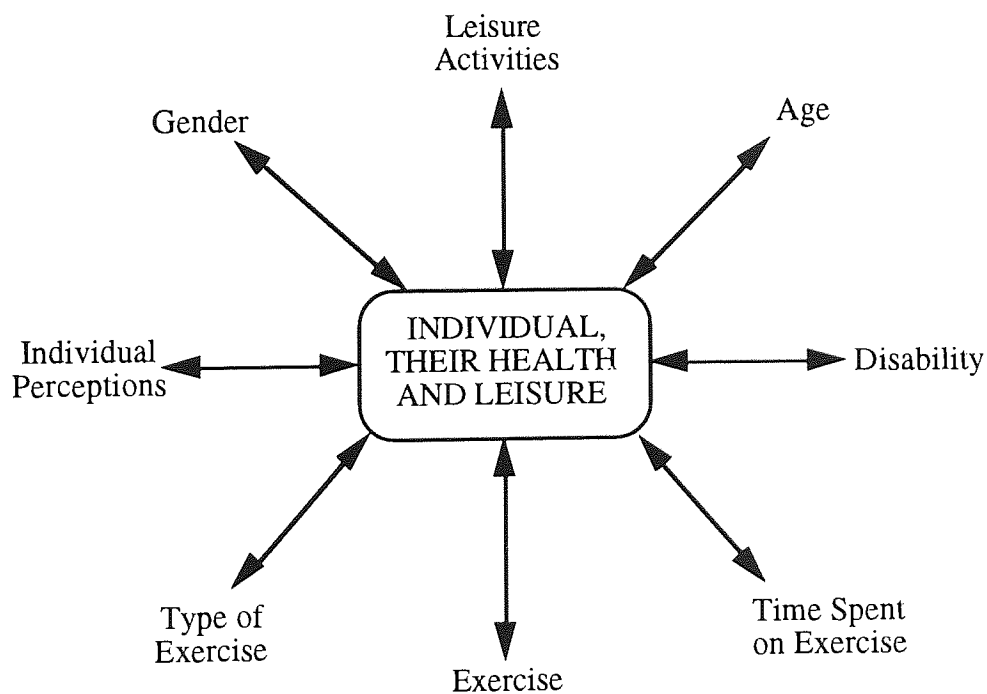
"Leisure time mostly spent in the pub." (1036)

"Fluid on knee caused by badminton." (0250)

Of the organisations included in this sample, organisation 3, the tyre manufacturer, still has its large sports fields and social club, not on the company premises but close to them. Organisation 8, the university, has a full range of sports, exercise and leisure activities available to all employees. Organisation 13, the computer manufacturer, has made arrangements for employees to become members of a leisure club on a reduced cost basis.

It would appear that based on the findings in the HOTN report (HMSO, 1992) this sample of employed people is far 'healthier' than the population as a whole.

Figure 5. Individual, Their Health and Leisure



Life-style Activities

Do people who work feel their health has ever been affected for good or bad by their life-style? (Research Question 4)

Both sexes responded positively to the effects of life-style on health, the overall responses are shown at table 70. When looking at the quantitative data, the assumption could be made that at least 381 (83% of the sample) would be making positive comments about their health, that is groups 'good', 'fair' and 'no effect'.

Table 70: Effects of Life-style on Health

	(1) Good	(2) Fair	(3) No effect	(4) Poor	(5) Bad	No resp.	Total
Yes	145 (32%)	144 (32%)	92 (20%)	40 (9%)	6 (1%)	32 (7%)	459

Table 71: Effects of Life-style on Health by Gender

	Men (n=290)	Women (n=165)	Total (n=459)
Good	86 (30%)	59 (36%)	145 (32%)
Fair	90 (31%)	54 (33%)	144 (32%)
No effect	65 (22%)	27 (16%)	92 (20%)
Poor	28 (10%)	12 (7%)	40 (9%)
Bad	3 (1%)	3 (2%)	6 (1%)
No response	18 (6%)	10 (6%)	28 (6%)
No gender	-	-	4 (1%)

Perceptions on the effects of life-style on health are fairly evenly distributed through the range for both sexes. However, it would appear from table 71 that women have a slightly more positive view of the effects of life-style on health than men at the 'good' and 'fair' end of the range.

Null Hypothesis: There is no statistically significant association between peoples perception of their health state and their perception of the effects of lifestyle on health.

Table 72: Effects of Life-style on Health by Feelings of Health

	Good effect	Fair effect	No effect	Poor effect	Bad effect	Total
Healthy	142	136	85	33	4	400
Not healthy	5	9	7	6	2	29
Totals	147	145	92	39	6	429

$$X^2 = 14.1; \text{ d.f.} = 4; p < 0.01$$

A X^2 of 14.1 with 4 degrees of freedom has a probability of less than 1/100, and the null hypothesis is rejected. This strongly suggests that there is a statistically significant association between peoples feelings of healthiness and their perception of the effects of life-style on health; healthier people have more positive perceptions of the effect of life-style on their health. The likelihood of a X^2 as big as 14.1 occurring by chance is less than 1/100. The small numbers in some of the cells suggest the need for caution in interpretation.

Health Perception by Age

The largest group by age in this sample in relation to this question was the 35-44 years group, with 132 people (29%). All the responses were towards the positive end of the scale. The most popular response in this age range was 'fair' or '2' with 47 responses (36%) in this category. A similar pattern was seen in the 16-24 year old group. There was a slightly different pattern in the 25-34 year group with the second choice being 'no effect' rather than 'good'. In the 45-54 and 55-64 years groups, at least 40% of people felt that life-style had had a 'good' effect on their health.

Table 73: Effects of Lifestyle on Health by Age

Age	1 Good	2 Fair	3 No effect	4 Poor	5 Bad	% of total population
16-24yrs	10 (23%)	17 (40%)	7 (16%)	8 (19%)	1 (2%)	43 (9%)
25-34yrs	18 (20%)	39 (42%)	22 (24%)	12 (13%)	1 (1%)	92 (20%)
35-44yrs	45 (34%)	47 (36%)	28 (21%)	10 (8%)	2 (2%)	132 (29%)
45-54yrs	51 (47%)	25 (23%)	23 (21%)	8 (7%)	2 (2%)	109 (24%)
55/64yrs	20 (42%)	14 (29%)	12 (25%)	2 (4%)	0	48 (10%)
No resp.	-	-	-	-	-	35 (8%)
Totals	145 (32%)	144 (32%)	92 (20%)	40 (9%)	6 (1%)	459 (100%)

Comments in the 'good' group were positive, i.e.:

"I enjoy life and have no disabilities, I consider this good." (0136)

"Because I try to make it so, good marriage, some good friends." (0209)

"Because I am happy with my partner." (0420)

"I feel very secure with my personal life, and my work is very important to me, but not as important as my husband and family." (0532)

When looking at the responses of people who scored 'fair' to this question, which was on the positive side of 'no effect', some of the written responses were not as positive as could probably be expected.

"I find some situations very stressful, mainly at work."(0628)

"My life is fairly hectic." (1239)

"I am fairly active, but could do more, work has a detrimental impact." (1304)

"Working shifts pays good money, but I think does not suit the human frame. Good standard of living but at what cost? Disturbs relationships within the home." (1357)

"Insufficient time for continual fitness programme." (0108)

It would appear that some people interpret fair as 'only fair' in their comments, being prepared to score 2 on a numerical scale, and when expressing themselves take a more negative view.

Table 74: Effects of Life-style on Health by Organisational Position

	Good	Fair	No effect	Poor	Bad	Totals
Senior managers	20 (42%)	14 (29%)	8 (17%)	5 (10%)	1 (2%)	48 (10%)
Middle managers	23 (28%)	26 (32%)	22 (27%)	9 (11%)	1 (1%)	81 (18%)
Operatives	102 (34%)	104 (35%)	62 (21%)	26 (9%)	4 (1%)	298 (65%)
No resp.	0	0	0	0	0	32 (7%)
Totals	145	144	92	40	6	459 (100%)

Organisational position does not seem to make a considerable difference to perceptions of the effects of life-style on health. The highest percentage is in the senior managers group (42%), with both middle managers and operatives seeing the effects as 'fair' rather than 'good'.

Senior Managers

In the group of senior managers, 20 (42% of the sample) felt the effects of life-style on their health had been good; 42 (88%) felt that the effects of lifestyle had been good,

fair or had had no effect, i.e., '1', '2', and '3'. Six people (12%) felt that life-style had had a negative effect on their health. (see table 74).

Positive comments (1, 2 and 3) included:

"Happy and content in general" (0105)

"Luck! Fairly intelligent and well off" (0502)

"Leisure in general offsets work" (1303)

"I know of no link with the life I lead and health problems" (1202)

Negative comments (4 and 5):

"Not enough relaxation" (0202)

"Stressful" (0504)

"Domestic problems and associated pressures" (0905)

From these comments it is not clear if the problem is work or domestic in nature, or a combination of both.

Middle managers

The highest response in this group was 26 people (32%) in group 2, 'fair'. All together, groups 1, 2 and 3 totalled 71 (88%) of the middle managers responses, with ten people (12%) feeling their health had been affected negatively by their life-style (groups 4 and 5).

Positive comments (1, 2 and 3):

"good home, family, job, attitude, feel rest" (0107)

"have always been careful to ensure that my way of life is healthy and not excessive." (0510)

"continued good health" (0913)

"Live well due to income" (0314)

"Try to take exercise whenever possible" (0511)

"Try to keep a balance and switch off" (1314)

Negative comments (4 and 5):

"Very little leisure time due to hours worked" (0115)

"I used to drink a lot which doesn't help weight and general health."
(0310)

"Too much stress and too many demands" (0814)

"Hectic life" (1009)

"Not properly balanced between work and play" (1108)

"Lack of time creates dissatisfaction and decreased resistance to
illness." (1311)

Operatives

Operatives mirror the pattern of middle managers with the highest level of people seeing their health as 'fair' in relation to lifestyle; 104 people (35%) responded to this category. The joint positive groups of 1, 2 & 3, totalled 268 (90%), above senior managers and middle managers. The negative groups of 4 and 5 totalled 30 (10%), lower than both the other groups.

Positive comments included (1, 2 and 3):

"I lead a good life, therefore nothing is detrimental to my health"
(1369)

"I do not tend to do anything excessive" (1238)

"I live a fairly quiet life with moderation in all things" (0257)

"Balanced diet, enough exercise" (1338)

"Need time for more leisure activities, demands of family great due to
small children" (0657)

Negative comments (4 and 5):

"Because I have been a one parent family, with three children, for 16
years and feel that this has had an effect on me" (0951)

"Too lazy" (1359)

"Stress" (1166)

"Too sedentary, poor eating habits" (0845)

"Too hectic/busy with limited time for relaxation" (0646)

Senior managers had a marginally larger response to this question as a whole and were most positive in their perceptions of the effects of lifestyle on health, but they also had the highest level of negative thoughts about this issue. The small number of people who chose 'no effect' would lead to this group being seen as having more awareness of life-style issues, or perhaps more control over life-style events, or perhaps those who could not cope have been weeded out already with only the strong surviving.

Table 75: Effects of Lifestyle on Health by Income

Income	Good	Fair	No effect	Poor	Bad	No Resp.	Total
£150	9 (45%)	5	3	3	0		20
£150-250	21	28 (35%)	15	16	1		81
£250-350	22	34 (39%)	27	3	2		88
£350-450	28 (41%)	21	16	4	0		69
£450 +	43 (41%)	32	21	9	1		106
Don't know	8	12 (41%)	6	2	1	3	32
No Resp.	13	10	4	3	1	8	39
Total	144	142	92	40	6	11	435 (100%)

In all income groups, the highest responses were in the positive end of the health categories. The people who earned least had the highest percentage in the 'good' category.

Effects of Lifestyle on Health Amongst Shift Workers

One hundred ten people who thought positively, or thought that life-style had had no effect on their health, about the effect of life-style on health also worked shifts, this figure being approximately a quarter of the sample (see table 51).

Some of the comments made which related to shift work included the following, from a positive perspective:

"Shifts allows me to pursue fitness programmes. My job provides funds for most things I require." (1363)"

"Working shifts pays good money, but I think does not suit the human frame. Good standard of living but at what cost? Disturbs relationships within the home." (1357)

The only comment associated with shift work in the more negatively scored group, was:

"Shift work" (0350)

People did not seem to clearly associate shift work as a factor affecting their life-style; these were the only comments in life-style in which shift work was mentioned. Many people made comments about availability of time, but that may relate to hours worked or other demands rather than shift working. Shifts can be viewed positively in that the person working shifts is free to do and see things when most of the population is at work.

Smoking

Smoking Habits of People at Work

The smoking habits of people in this survey are shown in tables 76 and 77. Seventy people (15%) smoked; this was made up of six (1%) senior managers; 14 (3%) middle managers and 50 (11%) operatives. Occasional smokers were a small proportion of the sample, 37 (8%), with middle managers being the smallest number with four (11%). Ex-smokers constituted 30% of the sample (137), with 15 (3%) senior managers, 31 (7%) middle managers and 91 (20%) operatives. The largest group was the people who had never smoked; these numbered 212 (46%), made up of 23 (5%) senior managers, 40 (9%) middle managers and 139 (30%) operatives.

The 70 people (15%) who smoked can be compared to 32% of the general population (HMSO, 1991) and 29% in a sample from South Birmingham Health Authority in the West Midlands (Luck, 1987). This number of people who smoke is approximately half that of the national average of people who smoke regularly. It may well be that some of the workplaces do have smoking policies, which restrict smoking in the workplace. Ex-smokers are people who have responded to the messages put out in health promotion programmes or from health professionals and made conscious decisions

about their health. Even more interesting is the 176 (38% of the sample) who have never smoked; 86 of these (19%) are male, and 90 (20%) are female, a fairly even split.

When asked if they were aware of the health effects of smoking, 82% of the sample said that they were; 41% said that this understanding had affected their smoking habits. The majority of people who made comments on the effects of smoking on health were able to give some correct disease association, for example: 'lung cancer', 'heart disease'.

Comments made by respondents in relation to smoking included (from people who felt their health was 'good'):

"Non-smoker, light drinker, 2 small children keep me active" (0101)

"Little drinking and no smoking must affect my health." (0315)

"Non-smoking, good domestic situation, good diet" (0669)

Of the people who felt their health was 'fair'. the following comments were made:

"No smoking, no excessive alcohol, plenty of sport, love of family and home" (0346)

"Being able to retreat into a non-smoking environment" (0520)

Only two people in group 3, 'no effect', made comment on smoking in relation to their perception of the health.

Very few people in group 4, 'poor effects', listed smoking in relation to their perception of their health. Comments made include:

"Smoker, unsocial hours etc." (0112)

"Drink and smoke too much, too many late nights watching television" (0759)

and no one in the final category of 'bad' made comments relating to smoking.

Null Hypotheses: There is no statistical significant association between gender and smoking habits.

Table 76: Smoking Habits by Gender

	Smoker	Occasional Smoker	Ex-smoker	Never Smoked	Total
Male	51	28	97	112	288
Female	19	9	40	97	165
Total	70	37	137	209	453

$X^2 = 17.0$; d.f. = 3; $p = 0.001$

A X^2 of 17.0 with 3 degrees of freedom has a probability of 0.001, and the null hypothesis is not accepted. This strongly suggests that there is a statistically significant association between gender and smoking habits. The likelihood of a X^2 as big as 17 occurring by chance is less than 1/1000. Residual analyses were performed on the data, with females/never smoked being statistically significant at the .05 level.

Organisational Position and Smoking Habits

Table 77: Smoking Habits by Organisation and Organisational Position

	Smoker	Occasional smoker	Ex-smoker	Never smoked	Total (n=459)
Org. 1 (n=41)					
Senior manager	2	0	1	1	4
Middle manager	2	1	0	7	10
Operatives	5	4	8	10	27
	9 (22%)	5 (12%)	9 (22%)	18 (44%)	41 (9%)
Org. 2 (n=45)					
Senior manager	0	1	2	1	4
Middle manager	0	0	4	3	7
Operatives	9	2	12	11	34
	9 (20%)	3 (7%)	18 (40%)	15 (33%)	45 (10%)
Org. 3 (n=20)					
Senior manager	1	0	0	1	2
Middle manager	1	2	1	3	7
Operatives	3	1	2	4	11
	5 (25%)	3 (15%)	3 (15%)	8 (40%)	20 (4%)
Org. 4 (n=36)					
Senior manager	0	2	0	0	2
Middle manager	2	0	5	3	10
Operatives	7	2	5	9	23
	9 (25%)	4 (11%)	10 (28%)	12 (33%)	36 (8%)
Org. 5 (n=36)					
Senior manager	0	0	1	4	5
Middle manager	2	0	3	2	7
Operatives	4	1	7	12	24
	6 (17%)	1 (3%)	11 (31%)	18 (50%)	36 (8%)

Table 77 (continued)

	Smoker	Occasional smoker	Ex-smoker	Never smoked	Total (n=459)
Org. 6 (n=34)					
Senior manager	0	0	0	3	3
Middle manager	2	0	2	1	5
Operatives	0	3	8	15	26
	2 (6%)	3 (9%)	10 (29%)	19 (56%)	34 (7%)
Org. 7 (n=37)					
Senior manager	1	0	3	1	5
Middle manager	1	0	2	4	7
Operatives	1	2	8	14	25
	3 (8%)	2 (5%)	13 (35%)	19 (51%)	37 (8%)
Org. 8 (n=32)					
Senior manager	0	1	1	2	4
Middle manager	2	0	2	1	5
Operatives	1	4	5	13	23
	3 (9%)	5 (16%)	8 (25%)	16 (50%)	32 (7%)
Org. 9 (n=28)					
Senior manager	0	0	0	4	4
Middle manager	0	0	1	3	4
Operatives	5	1	5	9	20
	5 (18%)	1 (4%)	18 (21%)	16 (57%)	28 (6%)
Org 10 (n=40)					
Senior manager	2	0	2	1	5
Middle manager	1	1	1	3	6
Operatives	7	2	8	12	29
	10 (25%)	3 (8%)	11 (28%)	16 (40%)	40 (9%)
Org 11 (n=25)					
Senior manager	0	1	2	0	3
Middle manager	1	0	3	3	7
Operatives	3	1	5	6	15
	4 (16%)	2 (8%)	10 (40%)	6 (36%)	25 (5%)
Org 12 (n=21)					
Senior manager	0	1	1	2	4
Middle manager	0	0	3	2	5
Operatives	2		6	4	12
	2 (10%)	1 (5%)	10 (48%)	8 (38%)	21 (5%)
Org 13 (n=50)					
Senior manager	0	0	2	2	4
Middle manager	0	0	4	4	8
Operatives	2	4	10	22	38
	2 (4%)	4 (8%)	16 (32%)	28 (56%)	50 (11%)
Org 14 (n=13)					
Senior manager	0	0	0	1	1
Middle manager	0	0	0	0	0
Operatives	1	0	2	9	12
	1 (8%)	0	2 (15%)	10 (77%)	13 (3%)
Totals	70 (15%)	37 (8%)	137 (30%)	212 (46%)	458 (100%)

In only four of the organisations do senior managers smoke: organisations 1, 3, 7 and 10 (see table 77). In nine of the organisations middle managers smoked: organisations

1, 3, 4, 5, 6, 7, 8, 10 and 11. In the case of the operatives, there was only one organisation where operatives did not smoke, this was organisation 6, the Local Education Authority.

Drinking

Drinking Habits of People at Work

The drinking habits of people in this survey are shown in tables 78 and 79. The number of people who took alcohol daily was 62 (14% of the sample). This was made up of 11 senior managers (2%), 14 middle managers (3%) and 37 operatives (8%). People who took alcohol weekly numbered 158 (34%). This was made up of 17 senior managers (4%), 22 middle managers (5%) and 119 operatives (26%). The largest group was the people who took alcohol occasionally; there were 20 senior managers (4%), 44 middle managers (10%) and 144 operatives (31%). Some people said they never took alcohol; these were 28 people made up of two senior managers (0.4%), nine middle managers (2%) and 17 operatives (4%).

Of the people who scored '1' to question 26, the comments they made in relation to drinking included:

"Don't smoke or drink, regular exercise, plenty of sleep, not much stress"
(0641)

"I don't smoke and only drink a little and I keep fairly active." (0836)

The people who felt that their health was fair made the following comments which included reference to drinking:

"Moderate drinker, non-smoker" (0132)

"Eat reasonably well, drink in moderation, take exercise" (1236)

"Try not to eat/drink too much, try to relax and not be stressed by things."
(1355)

Of the people who felt that their life-style had no effect on their health, the following comments were made:

"No excessive drinking" (0213)

"Overall no effect, but eat very healthy food, drink alcohol a little too much and am active" (0723)

"Sensible diet, moderate alcohol consumption. Don't smoke, regular hours." (1206)

The people who felt that their life-style was affecting their health poorly, gave the following explanations:

"Drinking too much during recent separation" (0138)

"I tend to go on night clubbing too often after I have done my bar job." (0263) (second job)

"I eat the wrong foods and drink too much in order to relieve pressures." (0632)

Of the group who felt their health was 'bad' because of their life-style, only one person made comment on drinking:

"Leisure time mostly spent in pub" (1036)

The majority of people in the group felt they had an understanding of the health effects of drinking excessive alcohol (77%), and 42% felt their drinking had been affected by this understanding. From the comments made by individuals to support their understanding of health effects, it would be difficult to support any real overall understanding; it was not evident from the comments.

Null hypothesis: There is no statistically significant association between gender and drink habits.

Table 78: Drinking Habits and Gender

	Daily	Weekly	Occas'n'ly	Never	Total
Male	53	103	113	19	288
Female	12	56	92	5	165
No resp.	-	-	-	-	6
Total	65	159	205	24	459

$$X^2 = 18; \text{ d.f.} = 3; p < 0.001$$

A X^2 of 18 with 3 degrees of freedom has a probability of 0.001, and the null hypothesis is not accepted. This strongly suggests that there is a statistically significant association between gender and drinking habits. The likelihood of a X^2 as big as 18 occurring by chance is less than 1/000.

Table 79: Drinking Habits by Organisation and Organisational Position

	Daily	Weekly	Occasional	Never	Total (n=459)
Org. 1 (n=41)					
Senior managers	0	2	2	0	4
Middle managers	1	2	7	0	10
Operatives	5	7	14	1	27
	6 (15%)	11 (27%)	23 (56%)	1 (2%)	41 (9%)
Org. 2 (n=45)					
Senior managers	0	3	1	0	4
Middle managers	1	3	3	0	7
Operatives	2	19	11	2	34
	3 (7%)	25 (56%)	15 (33%)	2 (4%)	45 (10%)
Org. 3 (n=20)					
Senior managers	1	1	0	0	2
Middle managers	1	2	4	0	7
Operatives	1	5	4	0	11
	3 (15%)	8 (40%)	8 (40%)	0 (0%)	20 (4%)
Org. 4 (n=36)					
Senior managers	1	1	0	0	2
Middle managers	0	3	3	3	10
Operatives	3	7	10	4	24
	4 (11%)	11 (31%)	13 (36%)	7 (19%)	36 (8%)
Org. 5 (n=36)					
Senior managers	1	1	3	0	5
Middle managers	1	2	4	0	7
Operatives	2	9	11	2	24
	4 (11%)	12 (33%)	18 (50%)	2 (6%)	36 (8%)
Org. 6 (n=34)					
Senior managers	0	0	2	1	3
Middle managers	2	2	1	0	5
Operatives	4	9	13	0	26
	6 (18%)	11 (32%)	16 (47%)	1 (3%)	34 (7%)
Org. 7 (n=37)					
Senior managers	3	1	1	0	5
Middle managers	3	1	3	0	7
Operatives	2	13	10	0	25
	8 (22%)	15 (41%)	14 (38%)	0	37 (8%)

Table 79 (continued)

	Daily	Weekly	Occasional	Never	Total (n=459)
Org. 8 (n=32)					
Senior managers	0	1	3	0	4
Middle managers	2	1	2	0	5
Operatives	4	10	9	0	23
	6 (19%)	12 (38%)	14 (44%)	0	32 (7%)
Org. 9 (n=28)					
Senior managers	0	3	1	0	4
Middle managers	0	0	3	1	4
Operatives	3	7	9	1	20
	3 (11%)	10 (36%)	13 (46%)	2 (7%)	28 (6%)
Org 10 (n=40)					
Senior managers	2	1	2	0	5
Middle managers	0	3	2	1	6
Operatives	2	8	16	3	29
	4 (10%)	12 (30%)	20 (50%)	4 (10%)	40 (9%)
Org 11 (n=25)					
Senior managers	2	0	1	0	3
Middle managers	2	0	5	0	7
Operatives	3	3	7	2	15
	7 (28%)	3 (12%)	13 (52%)	2 (8%)	25 (5%)
Org 12 (n=21)					
Senior managers	1	1	2	0	4
Middle managers	1	3	1	0	5
Operatives	0	4	6	2	12
	2 (10%)	8 (38%)	9 (41%)	2 (10%)	21 (5%)
Org 13 (n=50)					
Senior managers	0	2	1	1	4
Middle managers	0	0	4	4	8
Operatives	6	15	17	0	38
	6 (12%)	17 (34%)	22 (44%)	5 (10%)	50 (11%)
Org 14 (n=13)					
Senior managers	0	0	1	0	1
Middle managers	0	0	0	0	0
Operatives	0	3	9	0	12
	0	3 (23%)	10 (77%)	0	13 (3%)
No Resp.	-	-	-	-	3
TOTALS	62 (14%)	158 (34%)	208 (45%)	28 (6%)	459 (100%)

Organisational Position and Daily Drinking of Alcohol

Senior managers in seven of the organisations drank alcohol daily: organisations 3, 4, 5, 7, 10, 11 and 12. In nine of the organisations middle managers drank alcohol daily: organisations 1, 2, 3, 5, 6, 7, 8, 11 and 12. None of the senior managers in organisations 1, 2, 6, 8, 9, 13 or 14 took alcohol daily, and none of the middle managers in organisations 4, 9, 10 and 13 took alcohol daily. There were only two

organisations where operatives did not take alcohol daily; 12 and 14; operatives in twelve of the organisations drank alcohol daily: organisations 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 and 13. The overall totals are not great as only 62 people (14%) drank alcohol daily; however the totals were: senior managers, 11 (17%); middle managers, 14 (11%); and operatives, 37 (5%). This means that as a group a higher proportion of senior managers drank alcohol daily than either middle managers or operatives. There is no way of knowing the type of alcohol drunk nor the number of units consumed.

Exercise, Smoking and Drinking

Smoking

People who recorded positively in the exercise category could have recorded more than one category in terms of exercise taken. It is therefore difficult to give an exact number for people in this sample who took exercise. When the data was analysed for peoples' smoking habits in relation to exercise, the following results occurred:

Table 80: People Who Took Exercise by Smoking Habits

Smoked tobacco	55 (14%)
Occasionally smoked tobacco	34 (9%)
Ex-smoker	124 (31%)
Never smoked	187 (47%)
Total	400 (100%)

Smoking is not compatible with exercise, producing shortness of breath and reduced performance in exercise which requires physical stamina. Fourteen percent of this sample is relatively small, but it does reflect a group of people who are active in some area of exercise and still smoking--a group who could be targeted for health promotion.

Drinking

Going for a drink after an exercise session has been a long-standing tradition in some sports. From this sample the following results occurred:

Table 81: People Who Took Exercise by Drinking Habits

Daily alcohol	54 (14%)
Weekly alcohol	148 (37%)
Occasional alcohol	177 (44%)
No alcohol	21 (5%)
Total	400 (100%)

Smoking and Drinking

A small number of people, 12 (3%), took exercise, smoked and drank alcohol daily.

When divided into exercise categories the following results emerged:

Table 82: Exercise Taken by People Who Smoked and Took Alcohol Daily

Exercise	No.
Walking	7
Swimming	3
Gymwork	3
Aerobics	3
Football	1
Running	1
Other exercise	5
Total	23

Remembering that people could have responded to more than one sports category, this is a very small proportion of the sample. It does highlight the incongruity of alcohol and tobacco sponsorship of sports activities. This advertising is probably more directed at the observers than the participants.

Calnan (1988) in a paper examining the relationships between health beliefs and health related behaviour in a sample of 5932 people from two districts, found the strongest relationship was between smoking and drinking. However, people who had high levels of exercise were more likely to drink alcohol, and less likely to smoke tobacco. It would appear from this sample of people at work, that the same pattern is emerging.

Diet

There was not a specific question on diet in the questionnaire, the whole issue being considered too complex. In responding to the question on life-style, people did include diet as a feature of their perceptions of health.

Table 83: Life-style Category by Mention of Diet

Life style scale	1	2	3	4	5
Diet mention	22 (15%)	12 (8%)	7 (8%)	7 (18%)	0

Forty eight people (11%) made comment on diet; these comments covered a range of perceptions. Those people who scored 'good' to the life-style question gave the following supporting comments:

"Eat healthily, enjoy my leisure time, no financial worries" (0125)

"Because I enjoy what I do and eat properly" (0536)

"I am a non-smoker and non-drinker and avoid unhealthy junk food." (0605)

"Reasonable amount of sleep, fresh air, exercise, reasonably good diet" (1018)

Of the people who scored 'fair' to this question, the comments included the following:

"Could be improved by better diet and more regular exercise" (0556)

"As I spoil my diet and health by drinking, not excessively, but a bit" (0842)

"I live in the country, I walk a lot and eat normally." (1028)

"Try not to eat/drink too much, try to relax and not be stressed by things" (1355)

Of the people who scored 'no effect', the following comments were made:

"Careful what I eat" (0407)

"Balance of fair and poor effects, eat well, some physical exercise, but try to do too much, some stress" (0506)

"Food and exercise are taken in moderation" (0970)

Of the people who felt their health was poor because of their life-style, the following comments were made:

"Probably eat too much junk food" (0546)

"I don't really get enough exercise and my diet is not as healthy as it could be." (0728)

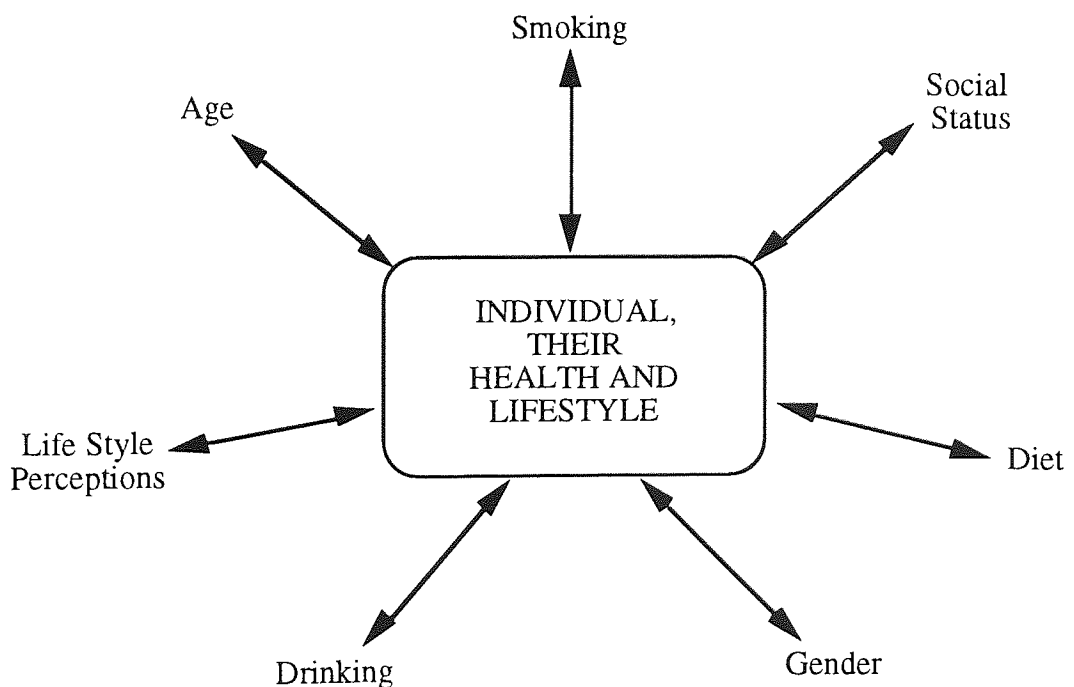
"Too sedentary, poor eating habits" (0845)

"Living alone sometimes leads to poor eating habits" (1212)

These comments are interesting in that people are using their ideas about their diet to justify or explain their health state. The overall proportion, 11%, is quite small when it is considered how much effort has been put into educating people to take a healthy diet and the wealth of information available to support healthy eating. Diet is not seen by many people as the single factor affecting health, but, in the majority of instances, as part and parcel of a wider approach. There is considerable evidence that diet is a major contributor to heart disease and stroke. The problems of obesity could lead to diabetes and gallstones (HMSO, 1991).

Luck and Clapman (1987), in a survey carried out in SBHA, found that women had a more healthy diet than men. The conclusion was also drawn that, in the main, women manage the diet of the household but they are providing a less healthy diet for men in the households. This may be a case where leading a horse to water does not ensure that it will drink!

Figure 6. Individual, Their Health and Lifestyle



Summary

This chapter has reviewed and discussed the findings from the data collected from people who were at work in 14 different organisations in the West Midlands Regional Health Authority. People in the main consider themselves to be healthy; they have a perception that life-style and leisure activities have been more beneficial to their health than the effects of work on health.

Where possible the data has been compared with existing data. Future work could include analysis of the relationships between variables, and possibly interviews with people in the survey who have expressed an interest in the area of research.

There is new knowledge in this research which has not been available previously. It related to people who are at work, but who are also members of their local community, and have not been surveyed as a separate group previously. It provides an opportunity to look at this group of people in relation to their health needs. More importantly it provides an indication of opportunities for purchasing for health gain amongst this group of people, who have different needs from other sectors of the community, but which are no less important.

This chapter has also indicated what people at work think about health. They hold views which in some instances will challenge the assumptions held by health professionals on what 'lay' perceptions of health are. This information could provide a way forward for health professionals in identifying a strategy for preventing ill-health, promoting health and managing ill-health conditions.

The following chapter is a summary of general findings in the form of conclusions and recommendations for future work. There is a review of methodological issues and some analysis of policy in relation to this particular aspect of health and potential health care.

Chapter 5

SUMMARY, RECOMMENDATIONS AND CONCLUSION

Introduction

This study was undertaken to collect information on health issues from a group of people who were at work. The key questions asked were:

1. Do people who work feel they are healthy?
2. Do people who work feel their health has ever been affected for good or bad by the work that they do?
3. Do people who work feel their health has ever been affected for good or bad by their leisure activities ?
4. Do people who work feel their health has ever been affected for good or bad by their life-style?

These questions were addressed to a 'well' population, people who were at work, employed in fourteen different organisations in the West Midlands Regional Health Authority.

Summary of Findings

1. Ninety two percent of this sample felt that they were healthy.
2. When asked to compare themselves to someone of a similar age, 92% of this sample felt that their health was above average or average. People used health behaviours to explain their health: exercise, diet, smoking and drinking.
3. Forty five percent of this sample were experiencing disturbance in their sleep patterns. Stress was a word that was used to explain why people were experiencing these sleep disturbances.
4. Sixty three percent of this sample were worried about things other than their health, these were: employment (24%), money (24%) and family (24%). They could have been worried about their health along with these other items.

5. Thirty four percent had visited their occupational health service in the past twelve months, the most common reasons for visiting were health supervision and treatment services. It is likely that health supervision is occupational specific, although it may not be, but treatment services are a duplication of GP and NHS arrangements provided by an employer.

6. People held more positive views on the effects of life-style and leisure activities than work in relation to the effect these aspects of living had had on their health.

7. When asked to interpret the meaning of the word health, 36% of the people used physical well-being as a shorthand for their understanding of health. This would appear to mean that people still have a medical or mechanistic view of health, which related very much to their ability to perform or function.

New Knowledge

This is the first survey concentrating wholly on people who work in relation to their perceptions of their health. Previous surveys of people in the community have included people who work, but they have not been easily identified from within the survey group as a whole. The information provided in such surveys is mixed, so the information on people who work is diluted by people who are too young or too old to work, also those who work in the home and the unemployed. The Health of the Nation targets mean that the health of specific groups needs to be identified if future targeting is to be successful.

An example of this is the information which has been highlighted on how people use existing 'health' actions to describe their own health; smoking and drinking habits, exercise and diet. This health behaviour pattern needs to be further explored by people responsible for implementing the Health of the Nation to ensure that duplication of effort is not taking place, and that where health messages at one level are being

conveyed and accepted by groups in the community, the next stage is implemented, i.e. more specifically targeted action to address activity in the work place.

Perception of Health

It is clear that people who work, in the main, see themselves as healthy. This is a useful start point for health educators and health promoters. Other health professionals will hopefully understand this perception and will use it in their dealings with people who work when they interact with the health industry for whatever reason.

Career Pathways

The emerging message to society is that people do not now have a job for life. People need to prepare themselves for a flexible career in which they respond to the needs of the organisation in which they work, and also increase their opportunity to gain future employment as the nature of work in society changes. Over half the people in this sample (52%) have done other jobs in their current organisation, and well over half (68%) had worked in other organisations. It would have added value to this particular debate if questions had been asked on redundancy and early retirement to see if people easily returned to the job market following these major life events.

Methodological Considerations

Review of Methodology

Information was collected from organisations using a postal questionnaire; a pilot study was conducted in the development of the questionnaire. In the main study each organisation received 70 questionnaires; five to senior managers, ten to middle managers and 55 to operatives. The exception was organisation 14, which received only 40 questionnaires. The questionnaires were then collected by the occupational health staff and returned, in sealed envelopes, to the researcher for analysis.

Population

It would be necessary for the future to have an indication of where there is the provision of occupational health services. This information could be gathered through the health assessment gathering activities of the District Health Authority (DHA). The workplace would be an ideal place to target health gain activities. There is a need for DHAs to extend their understanding of their localities and the activities which are carried out in those localities if they are to purchase for health gain in their communities. This will require rigorous and robust collection of information. It would be helpful for DHAs to know which organisations in their localities have OHS to provide workplace health care for employees. Such a data base could be used interactively with other Government agencies such as the Employment Medical Advisory Service of the HSE. This would allow for studies relating to people at work to be more representative and applicable across groups.

Whilst it is important to realise that the total population available was not known, and in an ideal world it would have been available, the method of selection used was the 'best' that could be achieved at the time.

Sample

The sample chosen was opportunistic, and a more robust sample could be identified. This would have to be in collaboration with either Government departments, or perhaps trade organisations. The Health and Safety Executive should now have data on a range of organisations in the West Midlands Regional Health Authority. The data will be collected by two different area teams, one in Birmingham covering the West Midlands County, and another based in Stoke-on-Trent covering 'the Marches', i.e. Staffordshire, Shropshire, plus Hereford and Worcestershire. This data base could form the basis from which to select organisations, and was used by Bamford (1985B) to select organisations in Walsall for a first-aid study. At that time it was not possible to identify organisations which had or did not have an occupational health service.

More rigorous attention needs to be given to actually identifying a sample within an organisation, perhaps with the researcher being actively involved in the selection in the different workplaces. This may create difficulties in terms of organisations being willing to be involved in research, but would be important in getting reliable research from well populations. Confidentiality will always be seen as an issue by organisations as well as by researchers and participants in research. Many organisations are experiencing 'difficult times' due to the recession and advancing technology. There are issues of total workforce populations which have to be addressed, and the increasing difficult problem of 'skill-mix' within a work force.

In order to have a more structured approach to selection in the future it would be useful to focus on one organisation, to have that organisation more actively involved in the research, in the random selection of participants, and to be actively involved in the follow-up and 'chasing' of respondents. This would mean one organisation would be looked at in greater depth. The work could also be spread across a smaller number of organisations to allow for comparisons to be made, adding variables which would reflect the different types of work done by people.

Method

This study is unique in the area of study undertaken, i.e. well people at work. Future work could involve an analysis of a single organisation, with greater in-depth work with people to explore their understanding and experience of health and wellness. There are opportunities to replicate this study, adding to the existing knowledge by including other sectors of industry, other occupations. Future work could also test the understanding of people at work in relation to their health, particularly where employees do not have access to an occupational health service.

There is also an opportunity to develop a longitudinal study of people who are at work, this could be done by involving people at work in the keeping of diaries. This method would allow for collection of information over time rather than the snapshot of

time which was the basis of analysis in this present survey. The keeping of a diary would also allow for the collection of all information that impinges on that individuals life, and events that were occurring in relation to his family, home life, leisure activities and wider circle of friends and acquaintances.

This research identified a ground swell of information against which other researchers could test hypotheses. The method chosen allowed for this activity to take place. The questionnaire reached many people who made choices about whether or not to be involved. This choice element can be the only way of dealing with a well population. There could also be issues of the distribution method of the questionnaires. In the pilot study, the person distributing the questionnaires was on the same site as the people being surveyed. The same circumstances would apply in organisations 2, 3, 4, 8, 9, 11, 13 and 14. Yet only organisations 13, 2 and nearly organisation 1 reached the upper limits of Oppenheimer's (1966) 40-60% response rate, and organisation 1 is a multi-sited organisation. There is a possibility that employee distribution and relationships with occupational health professionals could introduce a bias into questionnaire work which needs to be taken into account by researchers.

With the method chosen there is still the risk that people will write down what they think the reader wants to see, but the distancing of the individual from the person who will be receiving the information is a useful technique. The use of diaries suggested earlier, could be one way of resolving this issue, in that people over time forget that the information will be read by another person, and write the detail which would allow more detailed analysis to take place. The keeping of diaries in itself requires an ability to write, not all people will feel comfortable with this method of collecting data.

People who responded in this survey did not seem to have major difficulties either with the measuring tool or in understanding the language of the questionnaire. The measurement tool has produced a wealth of information on the health perceptions of

people in the workplace; how they feel about life and work, how they think of themselves in relation to their environment, and their expectations of life, work and leisure.

It was decided to use questionnaires in this research; other commentators feel that the use of questionnaires in research does not allow for a richness of data to be collected (Reid & Boore, 1987). The case histories of people at work (see Appendix 13) would refute this claim. Whilst acknowledging that questionnaires can be restrictive if designed in a restrictive way, a questionnaire which allows for respondents to make contributions can add to the knowledge base in ways other than directly quantitative responses. Mr. X did give 'good' responses to the questions, and used the opportunity to share information about himself, his health and how he felt his health had been affected by work. This is a point illustrated by Field and Morse (1985); by the use of words, different meanings can be conveyed and collected, e.g.

- "a) Health is: _____
- b) Health, to me, is: _____" (p. 74)

This allows information to be personalised to the individual responding. This was the method used in this study, and it did provide richer data. The researcher decided to use a mix of open and closed questions in order to allow for people to express their feelings and concerns as well as to give factual information.

An interesting issue that has arisen from the design of the questionnaire is how people have interpreted certain questions; for example: 'Comparing yourself to others of a similar age, do you feel your health is above average, average, or below average.'

When people were given a three-point score to choose from, 'average' was interpreted in both a positive and negative manner, i.e. 'I am average because...' (positive) and 'I am only average because...' (negative). This issue of interpretation is important, and needs to be understood not only by researchers but also by health professionals in their interaction with patients and clients.

The use of closed and open questions has been useful in that if the open element of the question had not been included, a major perspective of an individual's belief would have been lost. An example would be where people have given a score of 2 or 'fair' to a closed question, but then followed it with a comment which, in its language was anything but positive. If every question had been closed, there would have been a loss of much data in this study; it was a deliberate research strategy to use this form of design. In this survey it is interesting that whilst the majority of people used 'public accounts' to explain and describe their feelings about their health, a few gave 'private accounts', that is more graphic explanations of their perceptions of health (Cornwall 1984). Whilst this is not to the level that could be expected in true qualitative research, it is interesting that such information can be collected in a quantitative research approach.

This study has sought to add to the knowledge and understanding of the health of the employed population by being part of the "detailed and accurate description of the Population" (Hunt, et. al., 1986). It is important to describe populations taking into account their structure, activity, environment, health effects and behaviour, if programmes are to be designed to ensure their avoidance of ill health and continued contribution to the nation's health.

Use of CODOT as a Comparator

It was anticipated that the use of CODOT as a coding system for occupational groups would have allowed for general application and comparison. In the event this was not possible. The CODOT system was used by the Department of Employment, however OPCS used a different system, Classification of Occupations. Work is now completed in merging the two systems to produce a new system called Standard Occupational Classification. The new system has reduced the 3,800 CODOT occupations into 374 unit groups. The emphasis is still on the job done rather than the person within the job, i.e. if the person is self-employed or a supervisor (Thomas & Elias, 1989).

CODOT is still in use (1993), but there are difficulties in linking those classifications with publications by the OPCS. The information on CODOT is not readily available for comparison; the comment made by Department of Employment personnel was that the sensitive and confidential nature of the material meant that it could not be made available to individuals unless a fee was involved. This has meant that comparisons between this sample and the general population have not been made, and that the data will need to be re-coded at some future date if meaningful comparisons are to be made.

Level of Research

This study was both level 1 and level 2 research, according to the classifications used by Brink and Wood (1989). The main aim of this research was to add to the debate at this level. It sought to describe a population of people who work and to look at the association between a range of variables which could be used as descriptors of health in a population. There is a need to expand and test work at these two levels of research before it is sensible to move to level 3 research, which would be experimental research as described by Brink and Wood (1989). At the stage of reviewing the methodology it became clear that there had not been sufficient work done, so a conscious decision was made to concentrate on level 1 and 2 research.

Policy Implications

This survey was targeted at large firms which had an occupational health service. Where this service is provided, at whatever level, employees have access to health and safety professionals. Even if these people do not know the answer to problems, they have networks and systems which can be useful to them in providing answers. A much greater problem occurs in small businesses which do not have health and safety systems nor personnel. A recent study by the HSE suggests that organisations in the manufacturing sector who employ less than 50 people are 20% more at risk than employees in medium to large establishments, and 40% more at risk than employees in very large organisations (HSC, 1991). The HSC is putting more emphasis on the management of health and safety and a more systematic approach to work. In small

firmly this systematic and management centred approach is not focused onto the business that the organisation does, let alone health and safety. Perhaps it is unrealistic to expect small businesses to have the knowledge and expertise to carry out this important activity. Both the general practitioner and the NHS have to deal with the end products of failures to maintain the health and safety of people at work. They may not at the present time fully recognise the cause and effect relationship because of their own lack of awareness, education and training in this specialised area of care.

The recent summary of the Strategy for Health (HMSO, 1992) identified five key areas "in which substantial improvement in health can be achieved". If, as Virginia Bottomley, the Secretary of State says in her introduction, there is a commitment in the white paper to the pursuit of 'health' in its widest sense, then there is a need to review present arrangements for safeguarding health in workplace populations. These people are part and parcel of the community in which they work and live. Many of the jobs they do contribute significantly to the ill health effects listed in the key targets in the strategy for health. To ask general practitioners to influence the incidence of coronary heart disease or stroke, when the majority of people only go to their doctor for ill-health feelings seems to be placing an unequal burden on GPs. Even if GPs could reduce the number of deaths by these conditions, the remaining question is one of quality of life. There should be a primary care focus which takes education on health matters into schools and continues that education in the workplace and the community. The dividing of these activities into separate action for general industry and action for the health industry is not productive; it divides responsibility and in many instances means that individuals do not receive care from any sector until they themselves have decided they are unwell - this could be too late.

Phillips (1990) when looking at different views of health, made quite clear the inter-relatedness of health. Examples are given in this article about relationships, and AIDS and alcoholism are used as illustrations of how it is very rarely the person who has the 'condition' but also family, relatives, friends, people in the community and as far as

this text is concerned, people at work. This is why health at work cannot be separated from health in society.

These divisions are one of the main reasons for failure in areas of health care. In the early 1980's some Health Education Units employed people with a specific brief to target health education in the workplace. This was not seen as a success and when resources became scarce, the activity was stopped. Although the original concept was 'good', the execution was faulty. People at work are interested in health issues, and do pick up messages on health behaviour. They also have special and particular health education and health promotion needs in relation to their workplace. These needs should be known and understood by the people who are offering them health information. The examples given in this study of the way people use diet, exercise, smoking and drinking as a means of describing their health is an indication of their ability to pick up general health messages and take them with them into the workplace.

Workplace Health as Part of Primary Health Care

The people in this sample describe themselves as healthy; few of them have any long-standing disability, illness or handicap. In the main they have a reasonable standard of living with a large proportion owning their own homes and having access to transport. They are aware of health affecting behaviours and many of them have tried to adopt positive health life styles. The difficulty they will encounter is when they interact with the health service in that the health professionals they interact with will have little or no understanding of what these people do for a living.

If occupational health were seen as part of primary care, this lack of understanding could be reduced. The WHO (1985A) group saw primary health care as "a set of activities, a level of care, a strategy and a philosophy" (p. 8). As a philosophy, it was felt that primary health care was based on "social justice and equity, self-responsibility, international solidarity and acceptance of a broad concept of primary health care" (p. 8).

The concept of social justice and equity are issues which have concerned this researcher for some years; the social justice and equity of some people having access to a 'good' occupational health service, some having access to a limited or 'poor' service, and some people at work not having access to any service at all above the statutory requirement of a first aider (HSE, 1981A), irrespective of the risks to which they were exposed. This arrangement questions the values of a society which sees damage caused by work as an acceptable aspect of working.

The national arrangements for caring for the health of people at work are voluntary (House of Lords, 1983), although the suggestion was made in this report that primary health care workers could become more actively involved with occupational health. The WHO report (1986B) identifies that the working population requires health care which is both preventive and curative. In the UK there are models of occupational health services which are totally preventive (LEA), totally curative (none in this sample) and others which are a mix of both (these would be the rest of this sample).

The way to move forward in terms of incorporating the health care of people at work into primary care is to utilise the recent NHS reforms. These reforms (The NHS and Community Care Act, 1990) divide the work basis of the NHS into purchasers of health care and providers of health care. The purchasers, the 'old' District Health Authorities, have responsibility for assessing the health needs of their local community and contracting with what was in effect their 'old' units, now providers, either Trusts or Directly Managed Units, to provide that care. The overall aim is to increase health gain through seeking efficient and effective means of improving the health of their community.

Another element in the purchaser / provider scenario was the establishment of GP fund holders (GPFH). This allows GPs who have a patient list of a certain number to apply to become a fund holder, and gives the GPFH the power to directly purchase health care for people on their list within certain prescribed limits. This, in effect,

made some GPs both purchasers and providers. These are the key players in the new NHS; the purchasers, the providers and the GPFH.

Purchasers

Purchasers at District level need to take a more realistic and extended view when making health assessments of their local community. In the past, assessment of health need has been geared very much to traditional areas of assessment such as public health reports. As has been explained elsewhere public health reports do not address occupational health issues. The Public Health Report referred to on page 29 covers the county of Herefordshire. In Hereford itself, there is an organisation which has 'problems' with repetitive strain injury. This is a condition which is not uncommon in the workplace; it is trauma produced as a result of repetitive action, and usually affects a joint. In the past it has had a number of titles to describe it: housemaid's knee; tennis elbow; writers cramp; beat knee, elbow or hand. The joint becomes inflamed, hot, painful and swollen. In many instances the acute phase is treated with rest, attempts to reduce swelling and control pain. Repetitive strain injury is considered to be a phenomenon of the technological age in that it now seems to affect far more people and is associated with advancing technology, whether that is 'improved' processing systems or visual display units.

The problems in Hereford were/are as a result of improved processing methods in a food processing plant. Problems arose for individuals because of the increased incidence, and the fact that the condition became quite disabling; and although there are no gender demarcations in this condition, the process workforce is predominantly female. When people can no longer work as a result of an occupational condition, benefit can be paid, and their employer can be sued for negligence. However, the effects and costs on the community then come into play. If a woman in the home has difficulty in carrying out the traditional work role or activities, there is an additional burden which must be picked up by someone else. With repetitive strain injury of the wrist it is:

- difficult to carry weights (shopping)
- difficult to do any twisting actions (washing)
- difficult to hold weights (carry children)
- difficult to do hand/wrist movements (sewing, knitting)
- difficult to push with any force (vacuuming, pushing prams)

This must be a burden on the community as well as the individual and their families and must be seen as a primary care issue.

This means that the purchasers of health gain need to include this in their health gain package. They should be speaking to the organisation causing the problem to ensure they are addressing the problems; they will need to liaise with GPs who often make the initial diagnosis, and in this capacity are a provider, to ensure that the immediate primary care is appropriate. They will need to discuss with acute units or trusts, their ability to meet the secondary care issues which may involve surgery, physiotherapy and immediate rehabilitation. They may then need to go to GPs and/or community units or trusts to ensure that ongoing rehabilitation and care is being provided.

The main focus of a large purchasing authority is health gain. This is to be realised through a contracting process, which requires monitoring and evaluation. Health gain in a community can only be achieved if all activities which are conducted in that community are taken into consideration, not just the traditional areas of health care.

Providers

Providers of health care will also need to be aware of local needs and demands in providing the necessary infra-structure to provide care. Traditional delivery of care patterns will need to be re-visited and a more responsive and dynamic approach taken. Changes in the 'market place' will mean that specialisms will develop as a direct consequence of need being identified in a community.

In some areas the needs of a community for a specific service will be small, for example, forensic psychiatry. In these instances special care units will develop which will serve a much wider area than one purchaser of health care.

Providers of health care will have to work to specific quality standards and in partnership with other providers, e.g. acute health care trusts with community health care trusts and GPs and GPFH. All these health care providers will need to work more closely with other services such as local authorities, the private sector and voluntary organisations.

Health in the Workplace

It would appear from the answers given by respondents in this research that people in the workplace have already taken on board the messages contained in the Health of the Nation, Health in the Workplace project; that diet, exercise, smoking and the drinking of alcohol are important factors in maintaining health. People may use this information positively or negatively, but they seem to understand that these issues are real in terms of their state of health. People seem to be demonstrating both a knowledge and belief that life style can affect their health. Kemm (1991) describes two kinds of knowledge, "know that" and "know how":

"'Know that' knowledge covers the ways in which lifestyle affects health and the reasons for this. 'Know how' knowledge covers practical ways in which lifestyle can be modified to improve health."
(p. 21)

In the light of this, it would seem sensible to extend and develop the Health in the Workplace activity beyond these simple but important health messages and to target the issues which are central to the Health of the Nation, i.e. coronary heart disease and stroke.

People in this survey demonstrated an emerging understanding of these initial concerns; they also highlighted that they knew when they were feeling 'stressed' or 'dysfunctional'. It would seem sensible to acknowledge this area of work and to

address mental health, with the workplace being a target population for this activity. To be targeting healthy living issues such as smoking, diet, drinking and exercise before promoting positive mental health (HEA/NHSME, 1992) does seem to be a lost opportunity. The Health at Work in the NHS, Framework for Action (HEA/NHSME, 1992) lists the actions to be taken in such a programme:

- "1. Raise awareness of Health at work in the NHS, and provide information about healthy living to all staff;
2. Ensure that your NHS workplace has a comprehensive smoking policy....Stop all sales of tobacco on NHS premises, except to long-stay patients who are smokers;
3. Provide and promote healthy choices of food for staff and clients;
4. Promote sensible drinking and provide support for problem drinkers;
5. Introduce physical activity programmes, and enable staff to be more active during leisure time;
6. Promote positive mental health. Identify and reduce sources of stress within the organisation. Develop a system of early identification and support of those employees experiencing problems;
7. Encourage positive attitudes to sex and sexuality, and promote the concept of safer sex in the context of disease control and reproduction. Develop appropriate policies on HIV/AIDS which ensure that employees can seek information, consultation, treatment, care and support with confidence;
8. Provide opportunities for all staff to have health checks and attend screening and appropriate follow-up;
9. Explore the changes that can be made within the work situation, so that products and practices are environmentally sound and beneficial to health;
10. Review health, hygiene and safety practices in light of current health and safety legislation and directives;
11. Develop management practices and monitoring systems across the organisation to support positive health practices;
12. Design a training strategy to support health initiatives and reinforce health-promoting behaviours. (HEA/NHSME, 1992, sheet 4)

The NHS came late to the conclusion that it had a responsibility for the health of its staff, and it was not until the early 1970's that occupational health services for the NHS began to develop. Prior to this the emphasis was on screening of student

nurses, with little attention being given to other staff or the working environment. One of the problems of developing occupational health services in the NHS was the large number of 'health' professionals who assumed that because they worked in the NHS, they knew all about workplace health; they did not. This attitude, particularly amongst doctors and nurses, prevented the conceptual shift needed in an organisation for the development of pro-active occupational health services.

Whilst acknowledging that there may be equal emphasis placed on the activities for a healthy workplace in the NHS, listing activities in the way they are listed does mean that people who make decisions may leave more difficult activities further down the list until later.

It is interesting that target six, 'Promote positive mental health' is identified as an activity in 1992. The West Midlands is the leading regional health authority for mental health issues, and in 1992/93 the Department of Health is requiring the WMRHA to reduce its staffing levels from approximately 800 to 200 within a calendar year or less; this could have an effect on the mental health of employees, a major contradiction.

Recommendations

The time is now right for the development of occupational health services into the primary care activities being developed in the NHS. This could be achieved by:

1. The NHS assuming responsibility for workplace health by having the HSC as a division of the NHSME and the HSE working as a similar body to the District Auditor in the NHS. The District Auditor monitors financial spending, the audit of workplace practices, and the evaluation of value for money. The HSE could make a more direct audit of workplace activity in relation to the end products of poor practice, that is failure of safety, accidental injury, occupational disease, and death from workplace activities. This could be linked into the planning strategies of the purchases and providers in a locality, which would support the concept of health gain.

2. Require providers of care to identify and manage health and safety issues within their workplace as part of their business plan. As resources become even more restricted, it is important that providers care for their workforce with even more energy than they have in the past. In organisations which are labour intensive, it is essential that the human resource is husbanded and cared for. This would also set an example for other employers in a locality, in terms of good practice. It could form the basis of outreach services for smaller organisations within a locality to buy into a providers service for occupational health provision for its employees.

3. Purchasers should be setting contracts which deal with health and safety issues in a meaningful and pragmatic way, contracts which must be seen as 'real', attracting financial penalties and rewards. An employer who persistently damages people at work should be having meetings with purchasers of health care to reach an understanding that such behaviour is not acceptable. If the behaviour persists, then perhaps that employer should pay for the damage to be resolved rather than the NHS.

4. Development money needs to be available to support the identification of the health needs of people at work in order for purchasers to be able to contract meaningfully for the health needs of people who work. Purchasers are still purchasing along traditional lines, they think in terms of acute and chronic episodes of ill health. They need to start thinking about the need to purchase health gain for well people.

5. Experimental schemes could be developed in primary care settings to provide health care to the working population. The development of health centres and GPFH centres are an ideal opportunity for such schemes to be piloted in a locality. This allows for services to be offered to smaller business, and to be tailored to that organisations needs. This means that health professionals in these centres need to be knowledgeable and experienced in the area of occupational health and safety, and have the necessary networks and links to allow for maximum care to be given to the population they serve.

6. Health professionals in the NHS, GP and GPFH will need to take a very different view of prevention of ill health and the promotion of health than they have in the past. These concepts must become central to work that they do, in addition to the work they do in the management of ill health and disease.

7. All institutions, especially the health institutions, should be moving towards making it very easy for people to make healthy choices. In dietary terms this could be the provision of a range of foods, standard boiled and baked potatoes together with "healthy chips"; if people will still want to eat chips, they should be produced in a way that will minimise fat intake. Similarly, when alcohol is sold, there should also be available alcohol free or reduced alcohol beers and wines as well as other non-alcoholic drinks. If people are given a range of healthy choices, they will make more sensible health choices. Health professionals in a locality should be discussing these issues with employers to ensure there is an understanding of what an employer can do to contribute to the health of the nation. It hardly needs to be said that the school is a workplace for teachers and students alike and these considerations should have a prime focus there.

Future Work

Workplaces Without Occupational Health Services

This survey has collected information about people who work in organisations where there is an occupational health service. It is important that similar information is collected about people who work in organisations where there is no occupational health services to test the health perceptions of these people to see if there are any fundamental differences between the populations.

There will undoubtedly be some differences in the two populations; this is because of the use that has been made of OHS in the distribution and collection process in this, the first survey. Also it is likely that firms without OHS will be smaller; this may mean there will have to be adjustments to the sampling methods used in this study.

Small Organisations

Irrespective of the provision of OHS, it would be useful to conduct a similar survey into a group of small organisations to see if there are any fundamental differences in health perceptions between people in small firms and people in larger organisations.

Increased Volume

Another interesting thing to do would be to continue the work of this survey by increasing the volume of people included. This would mean circulating more questionnaires to organisations. There would, of course, be time differences to take into account. This would allow for a wider section of the population to be considered, and allow for greater statistical inferences to be drawn.

Further Analysis

There is a continuing data analysis of this existing cohort which will occupy this researcher for some considerable time to come; there is an opportunity to explore even further relationships between variables. Just as people bring their existing health to work, so their work can affect their health. The effects of work on health are documented throughout this paper, and are a major focus for the WHO in their work on Health For All 2000 (WHO, 1985B). Asvall (1991), the Regional Director for Europe for the WHO, addressed the "Challenge for Health at Work" within the Health For All 2000 framework. Asvall felt that:

"the time had come to stop seeing health at work as being different from health in general. A broader vision of workplace health policy must be employed that will aspire to bring major partners (Occupational health specialists, employers, employees, and both government and non-governmental decision makers) to work closer together and focus not only on the specific problems of the worksite, but also to become a key force to help change societies from the grass-root level for a healthier population." (Asvall, 1991, p. 53)

Other Methods of Data Collection

Other methods could be used to collect information, the diary method has already been discussed. Another method could be to have indepth interviews with people who

work, to take a much more grounded theory approach to collecting information, views and feelings from people at work.

The Future

There are various pathways that could develop in the future. The UK could continue as it has in the past, with minimum intervention from the State into the provision of occupational health care. If this is what happens, we can expect a certain proportion of the population to be damaged by their work, and become a burden on society.

If there was to be an integration of occupational health in Primary care within the new NHS, there would be considerable opportunities for the health of the nation as a whole in that a more integrated approach could be taken in relation to the care that is provided for society, and individuals could have their health considered along a continuum, from birth to school to work to retirement; an entire package.

There will of course be problems in the workplace that cannot be dealt with by the members of the primary health care teams of the future; this is where the expertise of organisations such as the HSE come to the fore. They are the experts, the 'consultants'. They could become the prime focus for change, working with health professionals, building up their knowledge base, and offering support, advice and example to a wider proportion of the community than they have had the opportunity to do in the past.

All these factors may be dealt with by the UK being a member the European Community. It would be a sad reflection on the leaders of this country if we had to wait for such action to take place before these issues could be addressed. There is a wonderful opportunity with the newly organised NHS, to lay the guidelines for a new approach to health care which is required for the UK in the 21st Century; an approach which has its foundations in partnership, shared responsibility, and services which prevent ill-health, promote good health and manage ill-health and disease by addressing the health of well populations, many of whom are at work.

REFERENCES

- ALMA-ATA. (1978). Primary health care. WHO, Geneva.
- Andreoni, D. (1986). The cost of occupational accidents and disease. I. L. O., Geneva.
- Anonymous. (1979). Health hazards for women working in chemicals and pharmaceuticals. Industrial Relations Services. Health & Safety Information, Bulletin No. 46 (Oct.), 1-11.
- Anonymous. (1989). Junior doctors and sleep loss. Inst. of Occupational Health, University of Birmingham, Bulletin No. 8, p. 1.
- Appleby, J. & Adams, B. (1991). Health care data briefing: The health costs of alcohol. The Health Service Journal, January 10, p. 15.
- Artus, K. (1983). Private communication.
- Ashton, D. (1989). The Corporate Health Care Revolution. Routledge & Kegan Paul, London.
- Ashton, J. & Seymour, H. (1988). The New Public Health. Oxford University Press, London.
- Asvall, J.E. (1991). Health for all in Europe: Challenges for health at work. Journal of Social and Occupational Medicine, 41, 53-54.
- Atherley, G.R.C., et. al. (1976). An approach to the financial evaluation of occupational health services. Journal of Social and Occupational Medicine, 26, 21-30.
- Bamber, L. (1973). The OH balance sheet. Occupational Health, Jan., 18-19.
- Bamford, M. (1985A). First aid and fruit farming. Occupational Health, 37(4), 162-7.
- Bamford, M. (1985B). First aiders role in a West Midlands district. Unpublished report. HSE.
- Bamford, M. (1987A). A survey of OH nurses in the West Midlands. Occupational Health, 39(11), 346-347.
- Bamford, M. (1987B). Workplace incidents and A & E records. Occupational Health, June, 182-184.
- Banerjee, A. (1990). Effectiveness of eye protection in the metal working industry. British Medical Journal, 301, 29 Sept., 645-646.
- Barker, D.J.P. (1993). The foetal and infant origins of inequalities in health in Britain. Journal of Public Health Medicine, 13(2), 64-68.
- Berg, O. (1975). Health and quality of life. Acta Sociologica, 8(1), 3-22.
- Berrios, G.E. & Shapiro, C.M. (1993). I don't get enough sleep, doctor. British Medical Journal, 306 (27th March), 843-846.

- Bickner, R.E. (1970). Measurement & indices of health. In conference series, Outcomes conference I-II. Methodology of identifying, measuring and evaluating outcomes of health service programs, systems and subsystems. Health Services & Mental Health Administration, 133-145. Rockville, MD. Cited in Goldsmith, S.B. (1972). The status of health status indicators. Health Service Reports, March, 87(3), 212-220.
- Blaxter, M. (1984). The Causes of disease: Women talking. In Black, et. al. (Eds.) Health and Disease, 34-43. Oxford University Press.
- Blaxter, M. (1985). Self-definition of health status and consulting rates in primary care. The Quarterly Journal of Social Affairs, 1(2), 131-171.
- Blaxter, M. (1990). Health and Life-style. Tavistock/Routledge, London.
- Bowling, A. (1990). Health care research: Measuring health status. Nursing Practice, 4(4), 2-8.
- Brink, P.J. & Wood, M.J. (1988). Basic Steps in Planning Nursing Research. Jones and Bartlett Publications.
- Brink, P.J. & Wood, M.J. (Eds.). (1989). Advanced Design in Nursing Research. Sage Publications, London.
- Brown. P. (1988). Punching the body clock. Nursing Times, Nov. 2, 84(44), 26-28.
- Bulletin. (1988). Passive smoking - an occupational health problem? Bulletin, Spring, No. 5. Institute of Occupational Health, Birmingham, England.
- Butler, J.R. & Vaile, M.S.B. (1984). Health and Health Services: An Introduction to Health Care in Britain. Routledge & Kegan Paul, London.
- Calnan, M. (1988). The health locus of control: an empirical test. Health Promotion, 2(4), 323-330. Oxford University Press.
- Cameron, J.D. (1972). The role of industry in the management of accident injury. Injury, 3(4), 261-264.
- Capra, F. (1982). The Turning Point: Science, Society and the Rising Culture. Flamingo, London.
- Cartwright, A. (1983). Health Surveys in Practice and in Potential: A critical review of their scope and methods. King's Fund, London.
- Cartwright, A. & Seale, C. (1990). The Natural History of a Survey. King's Fund, London.
- Cassell, J.E. (1978). The Healer's Art, a New Approach to the Doctor/patient Relationship. Penguin, Harmondsworth.
- Central Statistics Office. (1987). Annual Abstract of Statistics: Industrial Diseases and Fatal Injuries at Work. HMSO, London.
- Central Statistics Office. (1991). Regional Trends 26. HMSO, London.
- Chamberlain, G. (1991). Work in pregnancy. British Medical Journal, 302 (4th May), 1070-1073.

- Chapman, S. & Rubinstein, P. (1987). Smoker's beliefs about smoking and health. The Medical Journal of Australia. 146 (May 4), 113-117.
- Chapman, S. & Woodward, S. (1991). Australian court rules that passive smoking causes lung cancer, asthma attacks and respiratory disease. British Medical Journal, 302 (20th April), 943-5.
- Chasse, M.A. (1991). The experience of women having a hysterectomy. In Morse, J.M. & Johnson, J.L. (Eds.). The Illness Experience, 89-139. Sage Publications, London.
- Clark, J. & Henderson, J. (Eds.). (1983). Community Health. Churchill Livingstone, London.
- Coombes, R.H. (1991). Marital status and personal well-being: A literature review. Family Relationships, 40, 97-102.
- Cornwall, J. (1984). Hard-Earned Lives. Tavistock Publications, London.
- Cowie, B. (1976). The cardiac patients' perception of his health attack. Social Science & Medicine, 10, 87-96. Pergamon Press.
- Currier, C. & Stacey, M. (Eds.). (1986). Concepts of Health, Illness and Disease: A comparative perspective. Berg Publications, Leamington Spa.
- Department of Employment. (1972A). Classifications of Occupations and Directory of Occupational Titles, Vols. 1-3. HMSO, London.
- Department of Employment. (1972B). Safety and Health at Work (Robens Report). Cmnd 5034. HMSO, London.
- Department of Transport. (1986). Road accidents in Great Britain, 1985. Department of Transport, London.
- DHSS. (1979). Notes on the diagnosis of occupational diseases. HMSO, London.
- DHSS. (1982). Social Security and Housing Benefits Act 1982. HMSO, London.
- DHSS. (1985). Social Security Act 1985. HMSO, London.
- DHSS. (1988). On the State of the Public Health for the Year 1987, Annual Report of the CMO of the DHSS. HMSO, London.
- DHSS/Secretaries of State for Social Services, Wales, Northern Ireland, and Scotland. (1986). Primary Health Care: An Agenda for Discussion. HMSO, London.
- Dingwall, R. (1976). Aspects of Illness. Martin Robertson, London.
- Dobson, M. (1989). Occupational Asthma. Nursing Times, Nov. 29, 85(48), 46-48.
- Doll, R. (1985). Occupational Cancer: A hazard for epidemiologists. International Journal of Epidemiology, 14(1), 22-31.
- Doll, R. & Peto, R. (1981). The causes of cancer. Journal of the National Cancer Institute, 66, 1191-1308.
- Donovan, J. (1986). We Don't Buy Sickness, It Just Comes. Gower Publications, England.

- Dubos, R. (1968). Man, Medicine & Environment. Pall Mall Press, London.
- Duckworth, D.H. (1991). Managing psychological trauma in the police service: from the Bradford fire to the Hillsborough crush disaster. Journal of Social and Occupational Medicine, 41, 171-173.
- Edwards, F.C. & McCallum, R.I. (1988). Fitness for Work. Oxford Medical Press, Oxford.
- Ellicott, S. (1990). Fertile women need not apply. The Times, Oct. 31st, p. 18.
- Engel, H.O. and Rycroft, R.J.G. (1988). Dermatology. In Edwards, F.C., McCallum, R.J. & Taylor, P.J. (Eds.). Fitness for Work, 114-125. Oxford Medical Publications.
- Evans, S. (1992). Building a healthier workforce. Occupational Health, 44(4), 109-10.
- Ewels, L. & Simmet, I. (1985). Promoting Health: A Practical Guide to Health Education. John Wiley & Sons.
- Eyles, J. & Donovan, J. (1990). The Social Effects of Health Policy. Gower Publications.
- Fagin, L. & Little, M. (1984). Forsaken Families. Penguin Books Ltd., England.
- Fentem, P.H., Bassey, E.J. & Turnbull, N.B. (1988). The new case for exercise. HEA, London.
- Fenton Lewis, A., et. al. (1982). Health indicators; what are they? An approach to efficacy in health care. Health Trends, 14, 3-8.
- Field, D. (1976). The social definition of illness. In Tuckett, D. (Ed.). An Introduction to Medical Sociology, 334-336. Tavistock Publications Ltd., London.
- Field, P.A. & Morse, J.M. (1985). Nursing Research: The Application of Qualitative Approaches. Chapman & Hall, London.
- Fletcher, A.C. (1986). Reproductive Hazards of Work. E.O.C. and Association of Scientific, Technical and Managerial Staffs, Manchester.
- Folkard, S. (1987). Circadian Rhythms and Hours of Work, in Warr, P. (Ed.). Psychology at Work (3rd. Ed.), Penguin Books, Ltd., London.
- Gaskell, E. (1970). North and South. Penguin Classics, London. (First published 1854-5 in Household Words.)
- Glaser, B.G. & Strauss, A.L. (1967). The discovery of grounded theory: Strategies for qualitative research. Aldine, New York.
- Gloag, D. (1992). Exercise, fitness and health. British Medical Journal, 305, 15 Aug., 377-378.
- Goddard, E. (1991). Drinking in England and Wales in the late 1980's. OPCS, HMSO, London
- Godlee, F. (1992). Transport: a public health issue. British Medical Journal, 304, 48-50.

- Goffman, E. (1963). Cited in Field, D. The social definition of illness. In Tuckett, D. (Ed). (1976). An-Introduction to Medical Sociology. Tavistock Publications, London.
- Goldsmith, S.B. (1972). The status of health service indicators. Health Service Reports, 87(3), 212-220.
- Gott, M. & O'Brien, M. (1990). The Role of the Nurse in Health Promotion. Department of Health, London.
- Handy, C. (1989). The age of unreason. Arrow Books, London.
- Hanney, D.R. (1979). The Symptom Iceburg. Routledge & Kegan Paul, London.
- Haralambos, M. & Heald, R. (1980). Sociology: Themes and Perspectives. University Tutorial Press, Slough.
- Harma, M. (1992). Hard Day's Night for Shift Workers. Work Health Safety. Institute of Occupational Health, Finland.
- Haro, A.S. (1979). Strategies for development of health indices. In Holland, W.W., et. al. (Eds.). Measurement of Levels of Health. WHO Regional Publication, European Series No. 7, 176-28.
- Harrington, J.M. (1978). Shift Work and Health: A Critical review of the literature. HMSO, London.
- Harrington, J.M. (1988). Personal communication. University of Birmingham, England.
- Harrington, J.M. and Schilling, R.S.F. (1981). Work and Health. In Schilling, R.S.F. (Ed.). Occupational Health Practice. Butterworths, London.
- Harrington, J.M. and Seaton, A. (1988). A payroll tax for occupational health research. British Medical Journal, 296, 1618.
- Hart, N. (1985). The Sociology of Health and Medicine. Causeway Books, Lancs.
- Hashemi, K. (1989). Hazards of the fork lift truck. M.D. thesis. University of Birmingham, England.
- Health Education Authority. (undated). Exercise. Why Bother? HEA, London.
- Health Education Authority. (1991). The Smoking Epidemic, Counting the Cost to England. West Midlands Region, Vol. 12. HEA, London.
- Herefordshire Health Authority (1990). Public Health Report. Herefordshire Health Authority, Herefordshire.
- HEA/NHSME, (1992). Health at Work in the NHS. HEA, London.
- Hicks, C.M. (1990). Research and Statistics: A practical introduction for nurses. Prentice Hall, London.
- HSC. (1978). Occupational Health Services: The Way Ahead. HMSO, London.
- HSC. (1986). International Labour Organisation, Convention 161 and Recommendation 171 on Occupational Health Services, A Consultative Document. HSE, HMSO, London.

- HSC. (1990). Annual Report, 1989/90. HMSO, London.
- HSC. (1991). Annual Report, 1990/91. HMSO, London.
- HSE. (1981A). First Aid at Work. HS(R)11, HMSO, London.
- HSE. (1981B). The problem drinker at work. HSE Occasional Paper Series: OPI. HMSO, London.
- HSE. (1985). Health at Work: 1983-85. Employment Medical Advisory Service Report. HMSO, London.
- HSE. (1986A). Agricultural Black Spot. A study of fatal accidents. HMSO, London.
- HSE. (1986B). A guide to the Reporting of Injuries, Diseases, and Dangerous Occurrences Regulations, 1985 (RIDDOR). HMSO, London.
- HSE. (1988). Blackspot Construction: A study of five years fatal accidents in the building and civil engineering industries. HMSO, London.
- HSE. (1992). Your Work and Your Health: What Your Doctor Needs to Know. HSE. IND(G) 116(L) 11/92.
- HSE. (undated). Your Patients and Their Work. HMSO, London.
- HMSO. (1944). The Disabled Persons (Employment) Act 1944. HMSO, London.
- HMSO. (1974). The Health and Safety at Work etc. Act 1974. HMSO, London.
- HMSO. (1976). Prevention and health; everybody's business. HMSO, London.
- HMSO. (1985A). Approved Code of Practice. Control of Lead at Work (revised). HMSO, London.
- HMSO. (1985B). Statutory Sick Pay (Medical Evidence) Regulations 1985. HMSO, London.
- HMSO. (1986). The NHS (Amendment) Act, 1986. HMSO, London.
- HMSO. (1988). Control of Substances Hazardous to Health Regulations 1988. HMSO, London.
- HMSO. (1990). NHS and Community Care Act. HMSO, London.
- HMSO. (1991). The Health of the Nation. HMSO, London.
- HMSO. (1992). The Health of the Nation: A Strategy for health in England. Cmnd 1986. HMSO, London.
- HMSO. (1993). Clean Air Acts 1958; 1968; 1993. HMSO, London.
- Holland, G. (1985). Techniques of health status measurement using a health index. OHE, London, April,
- House of Lords. (1983). Select Committee on Science and Technology: Occupational Health and Hygiene Services, Vol. 1. HMSO, London.
- Howard, G. (1990). Passive Smoking is an industrial injury. Occupational Health, 42(11), 328-9.

- Hunt, J. (1979). Managing People at Work. Pan Books, London.
- Hunt, S.J., McEwen, J., McKenna, S.P. (1986). Measuring Health Status. Croom Helm, Dover.
- Hunter, D. (1959). Health in Industry. Pelican Medical Series, Penguin Books, Ltd., London.
- Hyyppa, M.T. (1991). Promoting good sleep. Health Promotion International, 6(2), 103-110.
- Illich, I. (1976). Limits to Medicine. Penguin Books, Ltd., London.
- Industrial Injuries Advisory Council. (1993A). Bladder and lung cancer in relation to work in aluminium smelting. Cmd. 2104. HMSO, London.
- Industrial Injuries Advisory Council. (1993B). Chronic Bronchitis and emphysema. Cmd. 2091. HMSO, London.
- Jacquinet-Salord, M.C.; Kang, T.; Fouriaud, C; Nicoulet, I. & Bingham, A. (1993). Sleeping tablet consumption, self-reported quality of sleep, and working conditions. Journal of Epidemiology and Community Health, 47, 64-68.
- Janz, N.K. & Becker, M. (1984). The health belief model: a decade later. Health Education Quarterly, 11, 1-47.
- Jardel, J.P. (1986). Preface. In Karvonen, M. & Mikheev, M.I. (Eds.). Epidemiology of Occupational Health. WHO Regional Publication, European Series, No. 20.
- Jeffery, R. (1984). Normal rubbish: deviant patients in casualty departments. In Black, N., et. al. (Eds.). Health & Disease, 249-254. Oxford University Press, Milton Keynes.
- Johnson, J.L. (1991). Learning to live again: The process of adjustment following a heart attack. In Morse, J.M. & Johnson J.L. (Eds.). The Illness Experience, 13-88. Sage Publications, London.
- Johnson, P. (1992). Handle with care. Nursing Times, 88 (42), 28-30.
- Jones, P.A. (1992). Patients perception of health as a measure of outcome. Medical Audit News, 2(4), 57-58.
- Karvonen, M. (1986). Epidemiology in the context of occupational health. In Karvonen, M. & Mikheev, M.I. (Eds.). Epidemiology of Occupational Health. WHO Regional Publication, European Series, No. 20.
- Kemm, J. (1991). Health Education and the problem of knowledge. Health Promotion International, 6(4), 291-296.
- Kenney, J.W. (1992). The consumer's views of health. Journal of Advanced Nursing, 17, 829-834.
- King, L.S. (1954). What is disease? Philosophy of Science, 21, 193-203. Cited in Seedhouse, D. (1986). Health, The Foundation for Achievement. John Wiley & Sons.
- Kloss, D. (1989). Occupational Health Law. BSP. Professional Books, London.

- Laffrey, S. C. (1986). Development of a health conception scale. Research in Nursing and Health, 9(2), 107-111.
- Lee, W.R. & Chisnall, P.M. (1987). Health and safety in small businesses. British Medical Journal, 265 (July 25), 230.
- Legge, T. M. (1934). Industrial Maladies. London.
- Lim, L. (1985). Comparison of Patterns of Sickness Absence Before and After Self Certification Amongst Postmen in a Head Post Office. M. Sc. thesis. Aston University, England.
- Lloyd Davies, T. A. (1957). The Practice of Industrial Medicine. Churchill, London.
- Lloyd, P. (1991). A personal account. Occupational Health, 43(5), 142-143.
- Long, J. (1991). Let the trained take the strain. Health Services Journal, 18th April, 16-17.
- Lorencz, B. (1991). Becoming ordinary: Leaving a Psychiatric Hospital. In Morse, J.M. & Johnson, J.L. (Eds.). The Illness experience, 13-88. Sage Publications, London.
- Luke, M. (1987). Smoking. Report No. 9, South Birmingham Health Authority, England.
- Luke, M. & Clapman, M. (1987). Diet. Report No. 13, South Birmingham Health Authority, England.
- Markku, S., et. al. (1992). Paternal occupational lead exposure and congenital malformations. Journal of Epidemiology and Community Health, 46, 519-522.
- Marmot, M.G.; Shipley, M.J.; Rose, G. (1984). Inequalities in Death - specific explanations of a General Pattern? The Lancet, May 5, 1003-1006.
- Marmot, et. al. (1991). Health inequalities amongst British civil servants: the Whitehall II study. The Lancet, 337(June 8), 1387-1393.
- Medical Research Council. (1985). Responsibility in the use of personal medical information for research: principles and guide to practice. M.R.C.
- Morse, J.M. & Johnson J. L. (1991A). The Illness experience, Dimensions of suffering. Sage Publications, London.
- Morse, J.M. & Johnson J. L. (1991B). Toward a theory of illness: The illness-constellation model. In Morse, J.M. & Johnson, J.L. (Eds.). The Illness experience, 315-342. Sage Publications, London.
- Moser, C.A. (1969). Survey Methods in Social Investigation. Heinemann, London.
- McCloy, E. (1992). Management of post-incident trauma: a fire service perspective. Occupational Medicine, 42, 163-166.
- McDowell, I. & Newell, C. (1987). Measuring Health: A Guide to Rating Scales and Questionnaires. Oxford University Press, Oxford, England.
- McEwen, J. et. al. (1983). The Nottingham health profile: a measure of perceived health. In Measuring the Social Benefits of Medicine. Office of Health Economics, London.

- McKee, V. (1992). Workaholics of the world unite. Life and Times. The Times, 8th May, p. 5. London.
- McMormick, A.; Rosenbaum, M. & Fleming, D. (1990). Socio-economic characteristics of people who consult their general practitioner: 1981/82. Series M.B.5, No. 2. Population Trends, OPCS, Spring, 8-10. HMSO, London.
- NEDO/RIPA. (1991). Women Managers: the untapped resource. National Economic Development Office and Royal Institute of Public Administration, London.
- NHSME. (1992). First Steps for the NHS: Recommendations of the Health of the Nation Focus Groups. HMSO, London.
- Niven, N. (1989). Health Psychology. Churchill Livingstone, London.
- Norris, J. (1991). Mother's involvement in their adolescent daughter's abortions. In Morse, J.M. & Johnson, J.L. (Eds.). The Illness experience, 201-236. Sage Publications, London.
- Office of Health Economics. (1992). Compendium of Health Statistics. 8th edition, Sec. 4, p. 39. O.H.E., London.
- Olsen, O. & Kristensen, T.S. (1991). Impact of work environment on cardiovascular diseases in Denmark. Journal of Epidemiology and Community Health, 43, 4-10.
- Onions, C.T. (Ed.). (1983). The Shorter Oxford English Dictionary. Vols. 1 and 2, 3rd. edition. Guild Publications, London.
- OPCS. (1983). Census 1981. National Report. Great Britain. Part 1. HMSO, London.
- OPCS. (1990). General Household Survey. 1988. HMSO, London.
- OPCS. (1992). County Monitors. OPCS, London.
- Oppenheim, A. N. (1966). Questionnaire design and attitude measurement. Heinemann, London.
- The Oxford Illustrated Dictionary. (1980). p. 250. Book Club Association, London.
- Parson, T. (1951). Illness and the role of the physician: A sociological perspective. American Journal of Orthopsychiatry, 21, 454-60.
- Parson, T. and Fox, R.C. (1968). Illness, therapy and the modern American family. In Bell and Vogel. (1968).
- Phillips, J.R. (1990). The different views of health. Nursing Science Quarterly, 3(Fall), 3.
- Pill, R. & Stott, N.C.H. (1982). Concepts of illness causation and responsibility: Some preliminary data from a sample of working class mothers. Social Science and Medicine, 16, 43-52.
- POHSO. (1986). Co-ordinating Committee for Professional Occupational Health and Safety Organisations. POHSO, University of Reading.
- Polit, D. F. & Hungler, B. P. (1987). Nursing Research: Principles and Methods (3rd edition). J. B. Lippincott Co., Philadelphia.

- Poulton, E.C. (1978). Blue collar stressors. In Cooper, C.L. & Payne, R. (Eds.). Stress at Work. John Wiley & Sons, Chichester.
- Pownall, M. (1990). Shifting ground. Nursing Times, 86(44), 19.
- Radley, A. & Green, R. (1987). Illness as adjustment: a methodology and conceptual framework. Sociology of Health and Illness, 9(2).
- Ramazzini, B. (1964). Diseases of Workers. (Trans. W. C. Wright). Hafner Publishing Co., London.
- Rapoport, P. & Rapoport, A. (1971). Dual-Career Families. Penguin Books, Ltd., London.
- RCGP/OPCS/DHSS. (1986). Morbidity Statistics from General Practice, 3rd national study: 1981/82. Series MB5, No. 1. HMSO, London.
- RCGP/OPCS/DHSS. (1990). Morbidity Statistics from General Practice, 3rd national study: socio-economic analysis, 1981/82. Series MB5, No. 2. HMSO, London.
- Reading, A. (1977). Illness & disease. Medical Clinics of North America, 61(4) (July), 703-710.
- Reid, N.G. & Boore, J.R.P. (1987). Research Methods and Statistics in Health Care. Edward Arnold, London.
- Richman, J. (1987). Medicine and Health. Longman, London.
- Rimminton, J. (1988). Blackspot Construction. HSE, HMSO, London.
- Robertson, O. and Wallace, J. (1984). Growth and utilisation of part-time labour in Great Britain. Employment Gazette, 92:9. Cited in Watson, T.J. (1984). Sociology, Work & Industry. Routledge, London.
- Robinson, K. (1983). What is health? In Clark, J. & Henderson, J. (Eds.). Community Health, 11- 18. Churchill Livingstone, London.
- Roscoe, J. & Haig, N. (1990). Planning shift patterns. Nursing Times, 86(38), 31-33.
- Rotter, J. B. (1954). Social Learning and Clinical Psychology. Prentice-Hall, Englewood Cliffs, NJ. Cited in Niven, N. (1954). Health Psychology. Churchill Livingstone, London.
- Royal College of Physicians, (1991). UK levels of Health - 1st Report. Fac. of Public Health Medicine, RCP.
- Royal Commission on Civil Liberty. (1987). Statistics and Costings. Vol. 2, Cmmd 7054, HMSO, London.
- Rystedt, I. (1985). Work-related eczema in atopics. Contact Dermatitis, 12, 164-71.
- Schilling, R.S.F. (Ed). (1981). Occupational Health Practice. Butterworths, London.
- Scrivenor. (1991). Gender poser. The Times, Tues., 28 May.
- Seedhouse, D. (1986). Health: the foundations for achievement. John Wiley & Sons, Chichester.

- Shephard, R.J. (1983). Employees health and fitness: The state of the art. Preventive Medicine, 12, 644-653.
- Shinton, R. & Sagar, G. (1993). Lifelong exercise and stroke. British Medical Journal, 307 (24th July), 231-234.
- The Shorter Oxford English Dictionary. (1983). Vols. I and II, University Press, Oxford.
- Sigman, A. (1992). The state of corporate health care. Personnel Management, Feb., 42-31.
- Silverman, D. (1970). The Theory of Organisations. Heinemann, London.
- Sims, A. (1992). Marital breakdown and health. British Medical Journal, 304, 457-8.
- Sinclair, T.C. (1972). A Cost-effective Approach to Industrial Safety. Committee on Safety and Health at Work research paper. HMSO, London.
- Smith, A. (1992). Setting a strategy for health, British Medical Journal, 304, 376-8.
- Smith, A. & Jacobson, B. (Eds.). (1988). The Nation's Health. Kings Fund, London.
- Smith, J.A. (1981). The idea of health: a philosophical scale. Advances in Nursing Science, 3(3), 43-50.
- Southgate, G. W. (1965). English Economic History. Dent & Sons, Ltd., London.
- Strasser, J. A. (1989). Qualitative clinical nursing research when a community is the client. In Morse, J.M. (Ed.). Qualitative Nursing Research - A Contemporary Dialogue Aspen Publications, USA.
- Strauss, A. & Corbin, J. (1990). Basics of Qualitative Research. Sage Publications, London.
- Streiner, D.L. & Norman, G.R. (1989). Health Measurement Scales: A practical guide to their development and use. Oxford University Press, Oxford.
- Sweetman, P.M.; Taylor, S.W.C. & Elwood, P.C. (1987). Exposure to carbon disulphide and ischaemic heart disease in a viscose rayon factory. British Journal of Industrial Medicine, 44, 220-227.
- Tasto, D. L., et. al. (1978). Health Consequences of Shift Work. Stanford Research Institute, California.
- Taylor, M. (1969). The machine minder. In Fraser, R. (Ed.). Work 2, 87-107. Penguin Books, Ltd., London.
- Taylor, P.J. & Pocock, S. J. (1981). Sickness absence - Its measurement and control. In Schilling, R.S.F. (Ed.). Occupational Health Practice. Butterworth, London.
- Thackrah, C. T. (1832). The effects of Arts, Trades and Professions and of Civil States and Habits on Health and Longevity, 2nd edition. Longmans, London. Reprinted in Meiklejohn, A. (1957). The Life Work and Times of C. T. Thackrah. E. and S. Livingstone, Edinburgh and London.
- Thomas, R. & Elias, P. (1989). Development of the Standard Occupational Classification. Population Trends, Spring. OPCS. HMSO, London.

- Toffler, A. (1980). The Third Wave. Collins, London.
- Townsend P. (1979). Poverty in the UK. Penguin Books Ltd., London.
- Townsend, P. & Davidson, N. (1982). The Black Report. Penguin Books Ltd., London.
- Townsend, P. & Davidson, N. (1988). The Black Report in Inequalities in Health. Penguin Books, Ltd., London.
- Trade Union Congress. (1981). The Unequal Health of the Nation. TUC, London.
- Trade Union Congress. (1988). Hazards at work, TUC guide to health and safety. TUC, London.
- Tuckett, D. (Ed.). (1976). An Introduction to Medical Sociology. Tavistock Publications Ltd., London.
- Turner, T. (1990). Healthy localities. Nursing Times, April 25, 86(17), 59-61.
- Waldron, H.A. (1977). Health care of people at work: Exposure to oil mist in industry. Journal of Social and Occupational Medicine, 27, 45-49.
- Watson, T J. (1987). Sociology, Work & Industry (2nd. ed.). Routledge, London.
- Webb, T. & Schilling, R. (1988). Health at Work. A report on health promotion in the workplace. Research Report No 22. HEA, London.
- West, M. (1962). A Handbook for Occupational Health Nurses. Edward Arnold, London.
- Whitehead, M. (1988). The Health Divide. Penguin Books Ltd., London.
- Woods, N.F.; Laffrey, S.; Duffy, M.; et al. (1988). Being healthy: Women's images. Advances in Nursing Science, 11(1), 36-46.
- WHO. (1948). Definition of Health. World Health Constitution. WHO.
- WHO. (1975A). Environmental and Health Monitoring in Occupational Health. Technical Report No. 535. WHO, Geneva.
- WHO. (1975B). Revised International Classification of Diseases, Vols. 1 and 2. WHO, Geneva.
- WHO. (1985A). Primary Health Care in Industrialized Countries. WHO Regional Office for Europe, (EURO Reports and Studies no. 95), Copenhagen. Cited in WHO. (1986). Occupational Health as a Component of Primary Health Care. WHO, Copenhagen.
- WHO. (1985B). Targets for Health for All. Targets in support of the European Regional Strategy for health for all. WHO, Copenhagen.
- WHO. (1986A). Epidemiology of Occupational Health. WHO Regional Publication, European Series No. 20, Copenhagen.
- WHO. (1986B). Occupational Health as a Component of Primary Health Care. WHO, Copenhagen.
- Wilkin, D.; Hallam, L.; Leavey, R. & Metcalfe, D. (1987). Anatomy of Urban General Practice. Tavistock Publications, London.

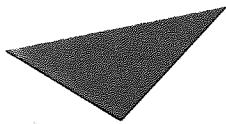
- Williams, R. (1983). Concepts of health: An analysis of lay logic. Sociology, 17(2) (May), 185-205.
- Wilson, S. (1991). The unrelenting nightmare: Husband's experiences during their wife's chemotherapy. In Morse, J.M. & Johnson, J.L. (Eds.). The Illness experience, 237-314. Sage Publications, London.
- WMRHA. (1992). Provisional Mid-1991 Population Estimates. November, 1992, WMRHA.
- WMRHA. (1993). Action for Health: Report of the Regional Director of Public Health, WMRHA.
- Yates, J. (1981). NHS Information - scrap it, change it or use it? Health & Social Services Journal, Sept. 25th., 1175-1176.
- Yin, R K. (1989). Case Study Research: Design and Methods. Sage Publications, London.
- Zola, I. K. (1975). Culture and Symptoms: An analysis of patients' presenting complaints. In Cox, C. & Mead, A. (Eds.). A Sociology of Medical Practice. Collier MacMillan, London.

APPENDICES

Appendix 1

The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1985
(RIDDOR)

Reporting an Injury or a Dangerous Occurrence (Major Injury)



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Appendix 2

The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1985

Reporting a Case of Disease



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Appendix 3

Health of the Nation Targets

Coronary Heart Disease & Stroke

NATIONAL TARGETS

To reduce death rates for both CHD and stroke in people under 65 by at least 40% by the year 2000 (from 58 per 100,000 population in 1990 to no more than 35 per 100,000 for CHD, and from 12.5 per 100,000 population in 1990 to no more than 7.5 per 100,000 for stroke).

To reduce the death rate for CHD in people aged 65 to 74 by at least 30% by the year 2000 (from 899 per 100,000 population in 1990 to no more than 629 per 100,000).

To reduce the death rate for stroke in people aged 65 to 74 by at least 40% by the year 2000 (from 265 per 100,000 population in 1990 to no more than 159 per 100,000).

Cancers

NATIONAL TARGETS

To reduce the death rate for breast cancer in the population invited for screening by at least 25 % by the year 2000 (from 95.1 per 100,000 population in 1990 to no more than 71.3 per 100,000).

To reduce the incidence of invasive cervical cancer by at least 20% by the year 2000 (from 15 per 100,000 population in 1986 to no more than 12 per 100,000).

To halt the year-on-year increase in the incidence of skin cancer by 2005.

To reduce the death rate for lung cancer by at least 30% in men under 75 and 15% in women under 75 by 2010 (from 60 per 100,000 for men and 24.1 per 100,000 for women in 1990 to no more than 42 and 20.5 respectively).

Mental Illness

NATIONAL TARGETS

To improve significantly the health and social functioning of mentally ill people.
To reduce the overall suicide rate by at least 15% by the year 2000 (from 11.1 per 100,000 population in 1990 to no more than 9.4).

To reduce the suicide rate of severely mentally ill people by at least 33% by the year 2000 (from the estimate of 15% in 1990 to no more than 10%).

HIV/AIDS and Sexual Health

NATIONAL TARGETS

To reduce the incidence of gonorrhoea among men and women aged 15-64 by at least 20% by 1995 (from 61 new cases per 100,000 population to no more than 49 new cases per 100,000).

To reduce the percentage of injecting drug users who report sharing injecting equipment in the previous four weeks by at least 50% by 1997, and by at least a further 50% by the year 2000 (from 20% in 1990 to no more than 10% in 1997 and no more than 5% by the year 2000).

To reduce the rate of conceptions amongst the under 16s by at least 50% by the year 2000 (from 9.5 per 1000 girls aged 13-15 in 1989 to no more than 4.8).

Accidents

NATIONAL TARGETS

To reduce the death rate for accidents among children aged under 15 by at least 33% by 2005 (from 6.7 per 100,000 in 1990 to no more than 4.5 per 100,000).

To reduce the death rate for accidents among young people aged 15 to 24 by at least 25% by 2005 (from 23.2 per 100,000 in 1990 to no more than 17.4 per 100,000).

To reduce the death rate for accidents among people aged 65 and over by at least 33% by 2005 (from 56.7 per 100,000 in 1990 to no more than 38.0 per 100,000).

First Steps for the NHS (1992)

Appendix 4
Pilot Questionnaire

Confidential Questionnaire

Survey No. _____

Employees Perceptions of Health

1. Are you? Male () Female () (Please tick a box)
2. What was your age last birthday? _____

Your Organisation and your work

3. How long have you worked at your present organisation? _____

4. What job do you do? _____

5. Have you done other jobs in your organisation? Yes () No ()

6. If yes:	Job title	Length of time
_____	_____	_____
_____	_____	_____
_____	_____	_____

7. Have you worked in other organisations? Yes () No ()

8. If yes:	Job title	Length of time
_____	_____	_____
_____	_____	_____
_____	_____	_____

9. What are the total hours you work, including overtime (on average)?

10. Do you work shifts? Yes () No ()

11. If yes, which shifts? (Please tick a box)

mornings only () afternoons only () days only ()

nights only () weekends only () shift rotations ()

other ()

If other please specify _____

You and your family

12. Are you at the moment: (Please tick a box)
single () married () separated () divorced () widowed ()

13. Is your partner employed? Yes () No ()

14. If yes, what work is this? _____

15. What is the joint income of the household?

- () Less than £150 per week (gross)
- () £150 - £250 per week
- () £250 - £350 per week
- () £350 - £450 per week
- () £450+ per week
- () Do not know

16. What type of education did you have?

- () Left school at or before 16 years
- () Left school at or before 18 years
- () College education
- () Polytechnic education
- () University education
- () Other

17. Do you have any of the following who are dependant on you? Either living in your home or locally?

- () Children
- () Elderly relatives
- () Handicapped relatives
- () None

You and your health

18. Would you describe yourself as a healthy person? Yes () No ()

19. If no, why not? _____

20. Compare yourself to others of your age. Would you say your health is:
above average () average () below average ()

Why do you think this? _____

21. Do you feel that your health has ever been affected by any of the following?

The life you lead Yes () No ()

Your work Yes () No ()

Your leisure activities Yes () No ()

If yes to any of these, why do you think so?

22. When did you last see your doctor?

() 1 - 2 months

() 3 - 12 months

() over 12 months

23. What was the reason for the visit?

24. How many times have you seen your doctor in the last twelve months?

25. Do you have any permanent or long standing illness, disability or infirmity?
Yes () No ()

26. If yes, what are these?

27. Are you taking any medicines now? Yes () No ()

28. If yes, what are they?

() a. on prescription from the doctor

() b. from the chemist

() c. from the surgery at your workplace

() d. something prescribed for someone else in your household

() e. herbal or homeopathic remedies

29. What is the name of the medicine you are taking, or if you do not know the name, what is it for?

30. Do you take exercise in your leisure time?

- Walking
- Swimming
- Gym work
- Aerobics
- Football
- Running
- No exercise
- Other exercise

If other, what is it?

31. How many times a week do you take exercise?

32. Are you worried about your health? Yes () No ()

33. If yes, what is worrying you? _____

34. How do you sleep?

- a. Well
- b. Difficulty getting to sleep
- c. Disturbed sleep
- d. Difficulty waking up
- e. Waking early

If you have ticked **b, c, d** or **e** what do you think causes this?

35. Do you take sleeping tablets? Yes () No ()

36. Do you ever feel worried and anxious about other things besides your health?
Yes () No ()

37. If yes, what are these? _____

38. Do you smoke tobacco? Yes
 No
 Occasionally
 I am an ex-smoker

39. Are you aware of any health effects of smoking? Yes No

40. If yes, what are they? _____

41. Has your understanding of these effects affected how much you smoke?
Yes No

42. Do you drink alcohol? Daily
 Weekly
 Occasionally
 Never

43. Are you aware of any health effects of drinking alcohol? Yes No

44. If yes, what are they? _____

45. Has your understanding of these effects affected how much you drink?
Yes No

46. Have you visited your Occupational Health Department during the last twelve months? Yes No

47. If yes, what was this for? _____

If you answered **NO** to this question the next two questions do not apply.

48. Have you also been to see your General Practitioner for the same reason?
Yes () No ()

49. Is this a new condition / problem? Yes () No ()

If no, when did it start? _____

Thank you for helping me with this survey. All of this information will be confidential, and will only be described as information on anonymous groups, not individuals.

Margaret Bamford

If you have additional comments you wish to add, including for the work of the occupational health service, please use this space.

Appendix 5

Pilot Questionnaire Letter

Dear Sir or Madam,

This questionnaire is part of a study I am doing at the University of Aston in Birmingham. I would be very grateful if you could help me by answering these questions. I am trying to find out how people at work think about their **health**.

Some of the questions need you to tick a box, others to provide dates or additional information. I know this is a long list of questions, but please try to answer them all.

This information will come directly back to me, not to people in your organisation, and will remain confidential. Once you have completed the questionnaire, if you could put it in the envelope attached, seal it, and hand it to your Occupational Health Department, it will then be forwarded to me.

Thank you for helping me with this study, if you need to contact me my address and telephone number is on the top of the letter. I am grateful for your help,

Yours faithfully,

M. Bamford (Mrs.)

Appendix 6

Main Study Questionnaire

Employees Perceptions of Health

Confidential Questionnaire

Survey No. _____

- 1. Are you? Male () Female () (Please tick a box)
- 2. What was your age last birthday? _____

Your Organisation and your work

- 3. How long have you worked at your present organisation? _____
- 4. What job do you do? _____
- 5. Have you done other jobs in your organisation? Yes () No ()

6. If yes:	Job title	Length of time
	_____	_____
	_____	_____
	_____	_____

- 7. Please list your last three jobs:

- 8. Have you worked in other organisations? Yes () No ()

9. If yes:	Job title	10. Length of time
	_____	_____
	_____	_____
	_____	_____

- 11. What are the total hours you work, including overtime?
On average per week _____

- 12. Do you work shifts? Yes () No ()

- 13. If yes, which shifts? (Please tick a box)
mornings only () afternoons only () days only ()
nights only () weekends only () shift rotations ()
other ()

If other please specify _____

You and your family

14. Are you at the moment:

- a. Single, never been married
- b. Married or living as married with partner
- c. Widowed
- d. Divorced or separated from partner

15. Is your partner employed? Yes () No ()

16. What is the joint income of the household?

- Less than £150 per week (gross)
- £150 - £250 per week
- £250 - £350 per week
- £350 - £450 per week
- £450+ per week
- Do not know

17. What type of education did you have?

- Left school at or before 16 years
- Left school at or before 18 years
- College education
- Polytechnic education
- University education
- Other

18. Do you have any of the following who are dependant on you, financially or otherwise, either living in your home or locally?

- Children
- Elderly relatives
- Handicapped relatives
- None

19. Is your home owner-occupied or rented?

- Owner-occupied
- Council-rented
- Private rented
- Other

20. How many cars do you have in your family?

- one car
- two cars
- more than two cars
- I do not have access to a car

You and Your health

21. Would you describe yourself as a healthy person? Yes () No ()

22. If no, why not? _____

23. Compare yourself to others of your age. Would you say your health is:
above average () average () below average ()

Why do you think this?

Do you feel that your health has ever been affected for good or bad by any of the following? Please indicate the effect these activities have had on you.

24. Leisure activities good fair no effect poor bad
 1 2 3 4 5

Why do you think this is so?

25. Work activities good fair no effect poor bad
 1 2 3 4 5

Why do you think this is so?

26. The life you lead good fair no effect poor bad
 1 2 3 4 5

Why do you think this is so?

27. When did you last see your doctor?

- () 1 - 2 months
- () 3 - 12 months
- () over 12 months

28. What was the reason for the visit?

29. How many times have you seen your doctor in the last twelve months?

30. Do you have any permanent or long standing illness, disability or infirmity?

Yes () No ()

31. If yes, what are these?

32. Are you taking any medicines now? Yes () No ()

33. If yes, what are they?

- () a. on prescription from the doctor
- () b. from the chemist
- () c. from the surgery at your workplace
- () d. something prescribed for someone else in your household
- () e. herbal or homeopathic remedies

34. What is the name of the medicine you are taking, or if you do not know the name, what is it for?

35. Do you take exercise in your leisure time?

- () Walking
- () Swimming
- () Gym work
- () Aerobics
- () Football
- () Running
- () No exercise
- () Other exercise

If other, what is it?

36. How many times a week do you take exercise? _____

37. How do you sleep?

- a. Well
- b. Difficulty getting to sleep
- c. Disturbed sleep
- d. Difficulty waking up
- e. Waking early

If you have ticked **b, c, d** or **e** what do you think causes this?

38. Are you worried about your health? Yes () No ()

39. If yes, what is worrying you? _____

40. Do you ever feel worried and anxious about other things besides your health?
Yes () No ()

41. If yes, what are these? Employment
 Money
 Family
 Relationships
 Well-being
 Other

42. Do you smoke tobacco? Yes
 Occasionally
 I am an ex-smoker
 Never Smoked

43. Are you aware of any health effects of smoking? Yes () No ()

44. If yes, what are they? _____

45. Has your understanding of these effects affected how much you smoke?
Yes () No ()

46. Do you drink alcohol? Daily
 Weekly
 Occasionally
 Never

47. Are you aware of any health effects of drinking alcohol? Yes () No ()

48. If yes, what are they? _____

49. Has your understanding of these effects affected how much you drink?
Yes () No ()

50. Have you visited your Occupational Health Department during the last twelve months? Yes () No ()

51. If yes, what was this for? _____

If you answered **NO** to question 50 the next three questions do not apply.

52. Have you also been to see your General Practitioner for the same reason?
Yes () No ()

53. Were you referred to your General Practitioner by the occupational health department? Yes () No ()

54. Is this a new condition / problem? Yes () No ()
If no, when did it start? _____

55. Have you felt ill during the last twelve months? Yes () No ()

56. Have you had any time off work for ill health during the past 12 months?
Yes () No ()

57. If yes, how long were you off work? _____

58. What does the word 'health' mean to you? _____

Thank you for helping me with this survey. All of this information will be confidential, and will only be described as information on anonymous groups, not individuals.

Margaret Bamford

If you have additional comments you wish to add, including suggestions for the work of the occupational health service, please use this space.

It may be necessary to interview some people about this questionnaire, to get some more information. If you would be agreeable to being interviewed, please put your name and address, and if possible a telephone number where you can be contacted, in the space below.

Thank you for your help.

Name _____

Address _____

_____ Post code _____

Telephone number _____

Appendix 7

Classification of Occupations and Directory of Occupational Titles (CODOT)

- 1 (I) Managerial occupations (General Management)
- 2 (II) Professional and related occupations supporting management and administration
- 3 (III) Professional and related occupations in education, welfare and health
- 4 (IV) Literary, artistic and sports occupations
- 5 (V) Professional and related occupations in science, engineering, technology and similar fields
- 6 (VI) Management occupations (Excluding general management)
- 7 (VII) Clerical and related occupations
- 8 (VIII) Selling occupations
- 9 (IX) Security and protective service occupations
- 10 (X) Catering, cleaning, hairdressing and other personal service occupations
- 11 (XI) Farming, fishing and related occupations
- 12 (XII) Materials processing occupations (Excluding metals)
- 13 (XIII) Making and repairing occupations (Excluding metal and electrical)
- 14 (XIV) Processing, making, repairing and related occupations (Metal and electrical)
- 15 (XV) Painting, repetitive assembling, products inspecting, packaging and related occupations
- 16 (XVI) Construction, mining and related occupations
- 17 (XVII) Transport operating, materials moving and storing and related occupations
- 18 (XVIII) Miscellaneous occupations
- 19 (XIX) Used to denote a nil return

Appendix 8

International Classification of Diseases (ICD)

1. Infections and parasitic diseases
2. Neoplasms
3. Endocrine, nutritional and metabolic disease and immunity disorders
4. Diseases of blood and blood forming organs
5. Mental disorders
6. Diseases of the nervous system and sense organs
7. Diseases of the circulatory system
8. Diseases of the respiratory system
9. Diseases of the digestive system
10. Diseases of the genito-urinary system
11. Complications of pregnancy, childbirth and the puerperium
12. Diseases of the skin and subcutaneous tissue
13. Diseases of the musculo-skeletal system and connective tissue
14. Congenital abnormalities
15. Certain conditions of the perinatal period
16. Symptoms, signs and ill defined condition
17. Injury and poisoning

Appendix 9

MIMS Classifications

1. Gastro-intestinal tract
2. Cardio-vascular systems
3. Central nervous systems
4. Pain
5. Musculo-skeletal disorders
6. Hormones
7. Genito-urinary systems
8. Infections and infestations
9. Immunology
10. Nutrition
11. Respiratory systems
12. Ear, nose and Oropharynx
13. Eye
14. Allergic disorders
15. Skin
16. Contraception
17. Neoplastic disorders
18. Poisoning and drug dependency
19. Anaesthetic, muscle relaxants
00. No response

Appendix 10

Main Questionnaire Letter

Dear Sir or Madam,

Employees Perceptions of Health

I am a mature student at Aston University in Birmingham, on a part time course, looking at the health status of an employed population. There has been very little research done in this area, the assumption being that people who are at work are well.

Attached to this letter is a questionnaire which will help me in my studies, that is if you could spare the time to fill it in for me. Some of the questions need you to tick a space, some for you to give your opinion on some aspect of health as you feel it affects you personally. There are no right or wrong answers, and it would be helpful if you could answer all the questions.

The information, which will be collected from people working in a variety of industries in the West Midlands area, will be totally confidential. The information will be shown as groups, not as individuals.

I have asked the Occupational Health Department to help me with the distribution and collection of the questionnaires, so could you please try to answer the questions I have asked, and when you have finished, could you put the questionnaire into the envelope, seal it and return it to the Occupational Health Department, who will then send it on to me. If you have any questions you wish to ask me, my address and telephone number are at the top of the page.

I am grateful for your help with gathering this information, and I assure you I will treat the information you provide in total confidence. Please could you return the questionnaire by....

Yours faithfully,

M. Bamford (Mrs.)

Appendix 11

Reminder Letter

Dear Sir or Madam,

Re: Employees Perception of Health

Recently you received a questionnaire asking you questions about your work, family and your health. As I said in my original letter, the information will be treated confidentially and is part of my research at Aston University. If you have decided not to return the questionnaire, I am sorry for having troubled you again.

If, however, you have lost the form, forgotten to return it, or missed the 'return by' date, I would still like to hear from you. If you still have the form, can I ask you to return it to your Occupational Health Nurse, who will then return it to me. If you have lost the form but would still be prepared to fill one in, either get in touch with me and I will make sure you get one, or speak to your Occupational Health Nurse who will also make sure you get another form.

I am sorry to keep troubling you, but it is important that I get as many forms back as possible, and I would be very grateful if you could spare the time to fill in and return my questionnaire.

Yours faithfully,

M. Bamford (Mrs.)

Appendix 12

Geographical Areas Included in This Sample, Covered by the West Midlands Regional Health Authority

1. West Midlands County (Pop. 1,540,825)

Districts	Male	Female	Total
Birmingham	293,472	274,950	568,422
Coventry	92,104	84,595	176,699
Dudley	100,474	90,344	190,818
Sandwell	91,164	82,628	173,792
Solihull	64,895	60,394	125,289
Walsall	84,059	76,172	160,231
Wolverhampton	76,224	69,350	145,574
Totals	802,392	738,433	1,540,825

2. Staffordshire County (Pop. 645,166)

Districts	Male	Female	Total
Cannock Chase	29,723	27,043	56,766
East Staffordshire	31,335	28,597	59,932
Lichfield	31,625	28,512	60,137
Newcastle-under-Lyme	38,368	34,646	73,014
South Staffordshre	35,948	32,810	68,758
Stafford	38,963	34,899	73,862
Staffordshire Moorlands	31,621	28,154	59,775
Stoke-on-Trent	77,933	70,411	148,344
Tamworth	23,000	21,578	44,578
Totals	338,516	306,650	645,166

3. Shropshire County (Pop. 250,045)

Districts	Male	Female	Total
Bridgenorth	17,129	14,842	31,971
North Shropshire	17,238	15,035	32,273
Oswestry	10,379	9,595	19,974
Shrewsbury & Atcham	28,931	27,007	55,938
South Shropshire	11,941	10,516	22,457
The Wrekin	45,054	42,378	87,432
Totals	130,672	119,373	250,045

4. Warwickshire County (Pop. 301,460)

Districts	Male	Female	Total
North Warwickshire	20,359	18,340	38,699
Nuneaton & Bedworth	38,287	34,917	73,204
Rugby	27,663	24,765	52,428
Stratford-on-Avon	34,046	31,162	65,208
Warwick	37,479	34,442	71,921
Totals	157,834	143,626	301,460

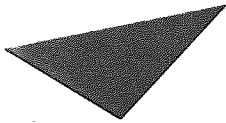
5. Hereford & Worcester (Pop. 413,924)

Districts	Male	Female	Total
Bromsgrove	29,732	27,528	57,260
Hereford	15,598	14,663	30,261
Leominster	12,472	10,830	23,302
Malvern Hills	26,766	24,221	50,987
Redditch	25,146	23,847	48,993
South Herefordshire	16,411	14,620	31,031
Worcester	26,313	24,304	50,617
Wychavon	32,745	29,614	62,359
Wyre Forest	30,837	28,277	59,114
Totals	216,020	197,904	413,924

Appendix 13

Case Studies

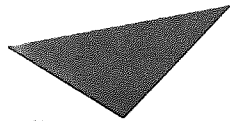
Case Study 1: Mr. X



Aston University

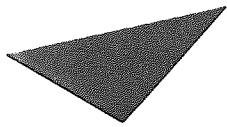
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Case study 2: Mr. Y



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