THE HEALTH OF CANADIAN WOMEN IN THE WORKFORCE:
A Comparison Between Homemaker Women, Workforce Women and Workforce Men Based on the 1979 Canada Health Survey

by:<br>FRANCES M. CARUTH<br>B.Sc., University of Toronto, 1980<br>A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF<br>THE REQUIREMENTS FOR THE DEGREE OF<br>MASTER OF SCIENCE<br>in<br>THE FACULTY OF GRADUATE STUDIES<br>(Health Services Planning \& Administration)<br>We accept this thesis as conforming to the required standard.

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Department of


The University of British Columbia
1956 Main Mall
Vancouver, Canada
VET 1Y3
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## ABSTRACT

In the past twenty-five years there has been a marked increase in the number of women in the paid labour force, especially among women with young children. Time studies have shown that when a woman has a young family plus a position in the paid labour force, she works a very long day and has little time for recreational or leisure pursuits.

This thesis therefore poses the following questions:

1. Do women who participate in the paid labour force report poorer health status than their counterparts who are homemakers?
2. Do women who participate in the paid labour force exhibit lifestyle patterns significantly different from their homemaker counterparts?
3. Do women in the paid labour force exhibit health care utilization patterns significantly different from their homemaker counterparts?
and 4. Do women's lifestyles, reported health status and health care utilization patterns differ from those of their male counterparts in the paid labour force?

Data from the 1978-79 Canada Health Survey (C.H.S.), which had asked a wide cross-section of Canadians about their lifestyle, health status and use of the health care system, were used to explore these questions. A model was then developed for this study which linked health risk behaviours, health status and health care related behaviours, and which used the variables available in the C.H.S. data base.

Multiple Classification Analyses were carried out to determine the best predictors of women's health risk behaviours, health status and health care related behaviours. The three study groups were then standardized using the top two predictors and the rates of the various states and behaviours were compared.

First, in the prediction of women's health risk behaviours, the demographic variables included in the model were not effective as only 3-4\% of the variance in the scores could be explained. Secondly, in the prediction of health status scores, the composite health risk scores developed for each subject plus the demographic variables were able to explain $4-11 \%$ of the variation. Thirdly, in the prediction of women's health care related behaviours the composite health risk scores, the health status scores and the demographic variables were together able to explain 14 - $27 \%$ of the variance.

When the standardized rates for high health risk behaviours were compared, there were significant differences between the three groups but no group was consistently better or worse than any other. The men's group however, consistently reported better health and less use of the health care system. The women's groups reported similar health states but women in the paid labour force reported a higher use of medications and fewer days in hospital.

The C.H.S. was designed to address issues which affect the whole population. The questions therefore, were not always sufficiently specific to describe the special circumstances of women, especially for example in
their childbearing and nurturing years. The rapidly changing social and economic circumstances of women and their families, as women enter the paid labour force, plus the need for more information on their health risk behaviours - what these behaviours are, and what predisposes women to engage in them - point to the need for more research focused specifically on this section of the population.
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## INTRODUCTION

There is growing evidence to support the idea that the way we lead our lives will have a subsequent impact upon our health. "Investigators are finding that the social environment and certain common behaviours such as physical activity, use of alcohol and tobacco as well as eating and sleeping habits are related to the major diseases of our time" (Berkman and Breslow, 1983).

During the past 80 years in Canada, the change from a predominantly rural to an urban and industrialized society has led to the development of new social and work patterns for many people; improved public health measures, social assistance programmes and advances in medicine have led to a significant change in the demographic profile of our society. In parallel with these changes, society appears to have created a new set of health problems - diseases associated with prosperous urban living, environmental pollution and a longer life.

At the start of this century, most women worked only around the home, performing the tasks generally described as homemaking. In 1911, only 14\% of all Canadian females over the age of 10 years participated in the paid labour force compared with $79 \%$ of all men ${ }^{1}$. This separation of the male-female work environments continued through the first half of this century, with fluctuations during war time and with only a gradual increase in the overall number of women in the paid labour force.

[^0]Since the 1950's there has been a sharp increase in the proportion of women participating in the paid labour force. In 1979, the proportion was $46.8 \%$ and it has been predicted by some to reach $70 \%$ by the end of this century (Swan, 1981).

This accelerated and seemingly permanent change in work patterns, particularly for married women, must also have considerable impact on women's social and home lives, and consequently on the lives of their families, if only for reasons of time. Women's participation in the paid labour force therefore, presents the potential for marked changes in the lifestyles as well as the social, work and home environments of large sections of society.

To society and to the family, there are both rewards and costs associated with these changes. Men have to learn to live and work in a more egalitarian society where women have more economic independence and expect an equal part in decision making. Men may also have to deal with work place or social expectations based on the traditional patriarchal model while simultaneously having to recognize an obligation to help with housekeeping and childraising activities (Ramie, 1983).

Men and women have to learn new ways of caring for a family (should they decide to have one) while both parents work.

For women entering the workforce there are more and different conflicts. Many women seek employment out of economic necessity; some do it to enhance the family's standard of living; some seek economic independence and the
sense of self-esteem that comes with some forms of paid employment. Whatever their reasons, most women will still assume primary responsibility for the homemaking and childrearing.

Can women assume these multiple responsibilities without jeonardizing their health? Women in the paid labour force with young children at home will work an 80 hour week (Ramie, 1983); there will be little recreational and personal time. Will there be negative consequences to the mental or physical health of these women?

From a personal perspective, I am intensely interested in the answers to such questions. Through three generations of women, I have seen my schoolteacher grandmother, who lived an active 95 years, work only in the home after her marriage at the age of 21 ; my schoolteacher mother, who stopped work when she married at the age of 28 , return to part-time teaching for another 20 years before finally retiring at 65; and myself married at 25 , work continuously both in and out of the home, since leaving university except for brief periods when the children were born and when we moved to new cities. My lifestyle, particularly the lack of recreational and personal time, is in sharp contrast to that of my mother's and grandmother's. Am I jeopardizing the possibility of a long and healthy life by working such long hours being wife, mother, employee and graduate student?

Much has been written about the bases of mortality and morbidity differences between the sexes - women having higher levels of morbidity but having a seven year greater life expectancy at birth. Women aged 20 and 40
in 1981 were expected to outlive men of the same age by seven and six years respectively (Statistics Canada, 1984). If one accepts that there are biological bases for these differences - for example that women have a constitutionally greater resistance to both infection and degenerative disease (Nathanson, 1975) then changes in women's lifestyles may not lead to marked changes in morbidity or mortality patterns. However, if one considers the cultural and behavioural explanations of women's higher levels of morbidity (Waldron, 1983(a)) coupled with the evidence of the potential impact of environmental factors on health (Lalonde, 1974; Milsum, 1984) then there would seem to be a very reasonable basis for asking the question, "Will women's increasing participation in the paid labour force have an impact on their morbidity and mortality patterns, and will that in turn affect their use of health care services?"

The Canada Health Survey (C.H.S.) in 1978-79 sought information on the lifestyles and health of Canadians as well as their use of the health care system. Unfortunately, what was designed as an ongoing study of the health of the Canadian population survived only 10 months due to government restraint. During that time, however, 31,000 people participated in at least part of the survey and those data are available to the public.

Although the C.H.S. was not designed to answer the specific questions posed by this thesis, it provided an existing data base against which many hypotheses could be tested. Information gleaned in this way, plus the associated literature review was assessed for this study as being an appropriate way of becoming familiar with the issues and setting a basis for any future study which might involve new data collection.

The questions posed in this thesis therefore are based on and limited by the model used in the Canada Health Survey. Chapter Two provides an overview of the issues surrounding the health of women and their participation in the labour force. Chapter Three outlines the scope of the Canada Health Survey and Chapter Four provides details of the variables as they relate to the model. Chapter Five explains the analyses used and Chapter Six reports the results as well as commenting on their relationship to other known data. The final Chapter attempts to bring the results of this study into sharper focus and address some of the issues raised but not necessarily addressed by this study.

Ultimately it is hoped that this thesis, if only through my own increased knowledge, can contribute to the awareness of employers, health planners, researchers and women themselves; that others will go on to more successfully describe relationships between women's lifestyles and their health.

## BACKGROUND

### 2.1 LIFESTYLE AND HEALTH

In 1974 the preface to "A New Perspective on the Health of Canadians" (Lalonde, 1974) stated that 'ominous counter-forces have been at work to undo progress in raising the health status of Canadians. These counter-forces ... include environmental pollution, city living, habits of indolence, the abuse of alcohol, tobacco and drugs and eating patterns ...'.

In addressing the issues related to optimizing the health of Canadians, this report identified four sets of elements which could affect the health of the individual Canadian:-
human biology - those aspects of health which are developed within the basic biological and organic makeup of the individual;
environment - those factors related to health which are external to the human body and over which the individual has little or no control;
lifestyle - the aggregation of behavioural decisions by individuals which affect their health and over which they more or less have control;
health care organization - the quantity, quality, arrangement, nature and relationships of people and resources for the provision of health care services to which the individual has access.

In examining the influence on our health of factors over which we as individuals and as a society have some control, the Lalonde Report quotes McKeown whose conclusions, after tracing the level of health in England and Wales back to the 18 th century were:

[^1]and

[^2]Further evidence of the impact of lifestyle on health can be drawn from the Canadian mortality data. The 1984 Canadian mortality data (Statistics Canada, 1984) shows accidents, (motor vehicle and other) to be the leading cause of death for men aged 25-44 years and for women 25-34 years. For women 35 - 44 years, the leading cause of death is neoplasia, followed by accidents. For the most part, these accidental deaths can be attributed to human factors such as carelessness, impaired driving and despair. They represent self-imposed risk, namely lifestyle decisions by the individual.

For many years heart disease or cardio-vascular disease has been among the top three causes of death in men and women aged 25-44 years (Statistics Canada, 1984; Milsum, 1984). Smoking, obesity, stress, lack of exercise and a high fat diet are all known to contribute significantly to these diseases. Again there is a high element of self-imposed risk. Table 2.1 shows the list of self-imposed risks identified in "A New Perspective on the Health of Canadians" (Lalonde, 1974).

A more detailed assessment of the relative contributions of lifestyle, environment, human biology and health care organizations to some of the leading causes of death for the population of Georgia was developed by Dever in 1976 (Dever, 1976). (See Table 2.2.) Dever developed the percentage allocations of responsibility for mortality by averaging the opinions of a panel of health experts.

TABLE 2.1 LIFESTYLE RISKS TO HEALTH

| RISK BEHAVIOURS | POSSIBLE CONSEQUENCES |
| :---: | :---: |
| Excess Alcohol Consumption | Cirrhosis of the liver, malnutrition, encephalopathy, obesity, increased risk of motor vehicle accidents |
| Cigarette Smoking | Chronic bronchitis, emphysema, cancer of the lung, aggravation of coronary artery disease |
| Abuse of Pharmaceuticals | drug dependence, drug reaction |
| Use of Psychotrophic Drugs | social withdrawal, acute anxiety attacks could lead to suicide, homicide, malnutrition and accidents |
| Poor Diet | obesity, atherosclerosis, coronaryartery disease, dental caries, malnutrition |
| Lack of Exercise | aggravation of coronary-artery disease, obesity, poor physical fitness |
| Lack of Recreation \& Relief From Pressures | stress related diseases such as hypertension, coronary-artery disease and peptic ulcers |
| Careless Driving \& Failure to Wear Seat Belt | accidents possibly leading to injury or even death |
| Promiscuity \& Carelessness | leading to syphilis and gonorrhea* |

* In 1974 AIDS was unknown in Canada.

Source: M. Lalonde. A New Perspective on the Health of Canadians. Ottawa: Information Canada, 1974.

TABLE 2.2 ALLOCATION OF MORTALITY RESPONSIBILITY TO FOUR HEALTH AREAS

| PERCENTAGE DISTRIBUTION OF DEATHS* | C CAUSE OF DEATH | PERCENTAGE ALLOCATION OF RESPONSIBILITY FOR MORTALITY |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | LIFESTYLE | $\begin{aligned} & \text { ENVIRON- HUMAN } \\ & \text { MENT } \quad \text { BIOLOGY } \\ & \hline \end{aligned}$ |  | HEALTH CARE ORGANIZATION |
|  |  |  |  |  |  |
| 34.0 | Diseases of the heart | 54 | 9 | 28 | 12 |
| 14.9 | Cancer | 37 | 24 | 29 | 10 |
| 13.4 | Cerebrovascular disease | 50 | 22 | 21 | 7 |
| 4.2 | Motor-vehicle accidents | 69 | 18 | 1 | 12 |
| 3.8 | Accidents, all others | 51 | 31 | 4 | 14 |
| 3.8 | Influenza \& pneumonia | 23 | 20 | 39 | 18 |
| 2.7 | Diseases of the respiratory system | 40 | 24 | 24 | 13 |
| 2.6 | Diseases of arteries, veins, \& capillaries | 49 | 8 | 26 | 18 |
| 2.2 | Homicides | 66 | 30 | 5 | 0 |
| 100.0 | Average for all causes | 43 | 19 | 27 | 11 |

Note: Due to rounding, allocations may not add up to 100 percent. *in 1973; only top nine causes presented.
Source: J.H. Milsum. Health Stress and Illness: A Systems Approach. New York: Praeger, 1984.

As Milsum (1984) comments, it emerges from this data that in nine conditions leading to $94 \%$ of all deaths, "lifestyle is allocated the greatest responsibility for each cause except influenza and pneumonia"; for all nine causes of death, lifestyle was allocated $43 \%$ of the total responsibility.

Many other writers have linked lifestyle to health including Badura (1984), Cooper and Melhuish (1984) and Berkman and Syme (1979). Other lifestyle factors, not shown in Table 2.1 which have demonstrated a correlation with health outcomes include stress as a result of major changes in social and work environments (Holmes and Rahe, 1967), use of oral contraceptives (Gibbs, 1979), hours of sleep (Hammond, 1964) and social support (Berkman and Syme, 1979).

One very important aspect of the research done on lifestyle risks for health includes the combined effect of risk factors. In 1974 Stamler and Epstein reported on the individual and cumulative effects of high cholesterol, high blood pressure and cigarette smoking on coronary heart disease. The cutting points for declaring the risk factors 'present' were cholesterol > $250 \mathrm{mg} / \mathrm{dl}$, diastolic blood pressure $>90 \mathrm{~mm} / \mathrm{Hg}$ and any use of cigarettes at the time of the study. The writers acknowledged that the setting of clinical markers for cholesterol and blood pressure distorts the reality that the risk factors and the associated risks are on a continuum, but defended the approach for its practical application in the clinical setting. Table 2.3 shows the multiplicative effect of increasing numbers of risk factors on the risk of heart disease.

TABLE 2.3 RELATIVE RISKS FOR ALL CHD DEATHS WITH THREE RISK FACTORS CIGARETTE SMOKING, HYPERCHOLESTEROLEMIA, AND HYPERTENSION

| Number of <br> High-Risk Variables | Prevalence | Ten-Year Age-Adjusted <br> Death Rates per <br> 1,000 Men | Relative Risk |
| :---: | :---: | :---: | :---: |
| 0 | .17 | 13 | 1.0 |
| 1 | .45 | 23 | 1.8 |
| 2 | .30 | 44 | 3.4 |
| 3 | .08 | 82 | 6.3 |

Note: Data are for U.S. white males, age 30 to 59 at entry, and age-adjusted. Source: J. Stamler and F.H. Epstein, "Coronary Heart Disease: Risk Factors as Guides to Preventive Action," Preventive Medicine 1 (1972): 27-48. cited in: J.H. Milsum. Health, Stress and Illness: A Systems Approach. New York: Praeger, 1984.

Belloc and Breslow (1972) showed that seven health habits were positively correlated with physical health. These factors were dichotomized at the levels shown (See Table 2.4) and because (a) the relative risks were in approximately the same range and (b) the factors were not highly inter-related, an accumulation of the number of these seven health habits reported could be used to form a health practice score ranging from zero to
seven. Using nine and a half years of data, Breslow and Enstrom (1980) plotted average health habit scores against age adjusted mortality rates as shown in Figure 2.1. Mortality rates increased approximately two fold for women and four fold for men. As scores moved from seven health habits to three or less the mortality rates generally held across age groups, income levels and different health states.

TABLE 2.4 SEVEN HEALTH HABITS

```
1. Smoking - None
2. Alcohol - No more than l-2 Drinks at a time
3. Physical
    Activity - Frequence
4. Weight - Men (-10) - (+20) of optimum
    Women less than (+10) of optimum
    5. Sleep - 7-8 hours per night
6. Eating Habit - Breakfast regularly
7. Eating Habit - Very limited snacking
```

Source: Based on the work of Belloc \& Breslow (1972), cited in: J.H. Milsum. Health Stress and Illness: A Systems Approach. New York: Praeger, 1984.

FIGURE 2.1 AGE - ADJUSTED MORTALITY RATES BY HEALTH HABIT SCORE


* For first nine and a half ( $91 / 2$ ) years of the study.

Source: Data from L. Breslow and J.E. Enstrom, "Persistence of Health Habits and Their Relationship to Mortality," Preventive Medicine 9 (1980): 469-83. Cited in: J.H. Milsum. Health, Stress and Illness: A Systems Approach. New York: Praeger, 1984.

Supported by the research cited here and many other studies, Health Hazard Appraisal systems have been developed. These systems provide individuals with an estimate of their risk exposure as well as (and more importantly) information on the behaviours required to achieve or maintain an acceptable level of health risk. Table 2.5 shows the variables used in the Health Hazard Appraisal system currently sponsored by the Department of National Health and Welfare through the University of British Columbial . This system has been used widely in Canada and in the U.S.A. using a similar underlying configuration.

The practical reality of lifestyle generated risk is that the offending behaviours are often associated with particular living or working circumstances that are not easily and simply changed. For example, smoking and drinking may be used as stress relievers and therefore the whole issue of stress management would be involved in behaviour changes. If one's spouse, work mates or social companions lead to a sedentary existence involving drinking and smoking, then again changes will require more than a change in a single facet of behaviour. As the work by Meissner et al. (1975) showed in Women and Work, when a woman has a family and a full-time position in the paid labour force, increasing leisure time and active leisure time which are essential for physical and mental well-being would probably require a behavioural change by her partner so that there was greater sharing of homemaker/childcare activities.

[^3]```
TABLE 2.5 RISK FACTOR - CAUSE OF DEATH MATRIX FOR HEALTH HAZARD APPRAISAL SYSTEM
```

|  | Cardio-Vascular |  |  |  | Cancers |  |  |  |  | Chronic Bronchitis/ Emphyserna | Pneumonia | M.V.A. | Suicide | Liver <br> Cirthosis |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Heart Atuck | Stroke | Arterial Disense (Orher) | Hypertension | Diabetes | Luns | Breast | Cervical | Intestinal 2 Rectal |  |  |  |  |  |
| (1) Ase | $\mathbf{X}$ | X | $\mathbf{x}$ |  |  | X |  | X |  | X |  |  |  |  |
| Smoking | xo | Xo | xo |  |  | X0 |  |  |  | xo | X0 |  |  |  |
| Alcohol |  |  |  |  |  |  |  |  |  |  | $\mathbf{X O}$ | XO |  | XO |
| Physical-Unfitwes | xo |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Overweight | X0 |  |  | xo | Xo |  |  |  |  |  |  |  |  |  |
| Distance Driven |  |  |  |  |  |  |  |  |  |  |  | X |  |  |
| Seat-Belt Non-Usage |  |  |  |  |  |  |  |  |  |  |  | xo |  |  |
| Disabling Deprexions |  |  |  |  |  |  |  |  |  |  |  |  | X |  |
| (No) Pap Smear |  |  |  |  |  |  |  | XO |  |  |  |  |  |  |
| (No) Breast Self-Exam |  |  |  |  |  |  | XO |  |  |  |  |  |  |  |
| Age Regular Sexual Intercourse |  |  |  |  |  |  |  | X |  |  |  |  |  |  |
| Cholesterol | X | X | X |  |  |  |  |  |  |  |  |  |  |  |
| Hypertension | X0 | xo | X0 | Xo |  |  |  |  |  |  |  |  |  |  |
| Uncontrolled Diaberes | XO | X0 | XO |  | (3) |  |  |  |  |  |  |  |  |  |
| (2) H. Rectal Growth |  |  |  |  |  |  |  |  | x |  |  |  |  |  |
| H. Rectal Bleeding |  |  |  |  |  |  |  |  | x |  |  |  |  |  |
| H. Chronic Bronchitis |  |  |  |  |  |  |  |  |  |  | X |  |  |  |
| (2) F. H. Heart Atteck | X |  |  |  |  |  |  |  |  |  |  |  |  |  |
| F. H. Diabetes |  |  |  |  | X |  |  |  |  |  |  |  |  |  |
| F. H. Breast Cancer |  |  |  |  |  |  | X |  |  |  |  |  |  |  |
| F. H. Suicide |  |  |  |  |  |  |  |  |  |  |  |  | X |  |

$\mathrm{X}=\mathrm{RF}$ applies to this cause of death; $\mathrm{O}=$ reduction of this risk recommended when appropriate. (1) Age is a RF in combination with another RF, eg. smoking. cholesterol; (2) H a History of: FH = Family Hisory of: (3) Presence of this diseace invalidnes any RF estimates for that disense as cause of death.

Source: J.H. Milsum. Health, Stress and Illness: A Systems Approach. New York: Praeger, 1984.

As indicated earlier, researchers cite social and behavioural as well as genetic (biological) reasons for the variations in mortality and morbidity rates between the sexes. Many of the behavioural differences have in the past stemmed from the different work roles that men and women have assumed. For example, women while working in the home are much less prone to accidents than men working in primary industries such as logging and fishing. Even travelling to and from the work place has, in the past, exposed men to a greater risk of accident. Also behavioural differences such as smoking and drinking have in the past reflected the social mores of our society which did not condone these behaviours by women.

However, lifestyles are changing. Men and women's labour force activities are becoming more alike. Fewer men are working in primary industries, more women are moving into the paid labour force and both groups are increasingly moving into the service industries (Naisbitt, 1982). As their occupational environments converge one might expect that some of the behavioural and therefore risk exposure differences between the sexes would be reduced. One of the questions addressed by this thesis is 'When women move into the paid labour force, does their exposure to health risks become more like men's?'

### 2.2 WOMEN AND WORK IN CANADA

## THE HISTORICAL CONTEXT

At the turn of the century, Canada was only just beginning its move toward being an industrialized society. Fifty percent (50\%) of men still worked in agriculture. ${ }^{2}$ The industrial labour force was quite small and although only $11 \%$ of all females over the age of ten were in the paid labour force, they almost all worked in light industry, making up 34\% of the industrial work force.

Industrialization brought urbanization; this in turn moved the paid labour force away from the home and into factories and offices. The majority of women worked at home and were not part of the paid labour force. Those women who did work outside the home (14\% in 1911), generally worked in the factories that had replaced the family based industries such as cloth and clothing manufacturing. The women worked long hours (as much as 60 hours/week) and were paid poorly, the rationale being that the girls were expected to live at home until they married, at which time they were expected to leave the paid labour force (Phillips and Phillips, 1983). Table 2.6 shows the slow increase in the proportion of Canadian women in the paid labour force during the first half of this century and the extent to which they entered or left the work force at times of war and depression. Note the low level of women workers in the early thirties during the depression and the increased levels in 1918 and 1945.

[^4]TABLE 2.6 PERCENTAGE OF WOMEN IN THE PAID LABOUR FORCE 1911-1946

| $1911-14 \%$ | $1939-24 \%$ |
| :---: | :---: |
| $1918-22 \%$ | $1941-24 \%$ |
| $1921-18 \%$ | $1945-33 \%$ |
| $1931-13 \%$ | $1946-25 \%$ |

Source: Phillips, P. and Phillips, E. Women and Work. Toronto: Lorimer, 1983.

Through the fifties, the steady increase in the proportion of women working for pay continued but it is since the sixties that the dramatically increasing rate of participation has become a significant social phenomenon. Figure 2.2 shows the participation rates for successive cohorts of women for the years 1955, 1965 and 1975. Table 2.7 shows the ages of each cohort of women for these years.

FIGURE 2.2 PARTICIPATION RATES FOR SUCCESSIVE COHORTS OF WOMEN CANADA: 1911-1960


See Table 2.7 for birthdates of cohorts.

TABLE 2.7 COHORTS OF WOMEN - CANADA 1911-1960

| COHORT | 1 | 2 | 3 | 4 | 5 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| BIRTHDATE | 1951- | 1941- | 1931- | 1921- | 1911- |
|  | 1960 | 1950 | 1940 | 1930 | 1920 |
| AGES IN 19 | - | - | 15-24 | 25-34 | 35-44 |
|  | - | 15-24 | 25-34 | 35-44 | 45-54 |
|  | 15-24 | 25-34 | 35-44 | 45-54 | 55-64 |

Source: Adopted from Department of Finance Canada. Participation Rate and Labour Force Growth in Canada, Ottawa: April, 1980.

Most significant perhaps is the fact that the majority of women in the work force are now married women. Table 2.8 shows how the percentage of married women in the labour force has increased since the 1950's. The status of 'married' generally goes hand in hand with domestic and child raising responsibilities. For married women, entering the work force means adding a work commitment outside the home to an already established work role as a homemaker.

TABLE 2.8 PERCENTAGE OF FEMALE LABOUR FORCE BY MARITAL STATUS

|  | 1951 | 1975 | 1980 |
| :---: | :---: | :---: | :---: |
| Single | 62.1 | 31.0 | 29.9 |
| Married | 30.0 | 59.6 | 59.9 |
| Other | 7.9 | 9.4 | 10.2 |

Source: Phillips, P. and Phillips, E. Women and Work. Toronto: Lorimer, 1983.

Many reasons have been put forward to explain this upsurge in married women's participation in the labour force. They include:-
a. to maintain family income;
b. to stave off boredom and to meet the higher expectations that are associated with smaller families, higher levels of education and higher standards of living;
c. the enticement of higher real wages for women, that is, income more than covering the costs incurred by their going out to work; or
d. the rewards of independence and self esteem that a career can provide.

None of these reasons would seem to be mutually exclusive and for many women several of them may play a part in the decision to work outside the home as well as inside the home.

TABLE 2.9 PARTICIPATION RATES OF MARRIED WOMEN (HUSBANDS PRESENT), BY AGE GROUP AND PRESENCE OF CHILDREN IN THE HOME, 1971 AND 1976

|  | Wives <br> Aged <br> $15-34$ | Wives <br> Aged <br> $35-44$ |
| :--- | :---: | :---: |
| With no children present | 73.9 | 59.4 |
| 1971 | 77.5 | 65.5 |
| 1976 | 3.6 | 6.1 |
| Absolute increase (percentage points) | $4.9 \%$ | $10.3 \%$ |
| Relative increase (percent) |  |  |
| With children, all over six | 46.0 | 44.2 |
| 1971 | 54.9 | 53.6 |
| 1976 | 8.9 | 9.4 |
| Absolute increase (percentage points) | $19.3 \%$ | $21.3 \%$ |
| Relative increase (percent) |  |  |
| With children under six | 28.0 | 25.4 |
| 1971 | 36.9 | 35.8 |
| 1976 | 8.9 | 10.4 |
| Absolute increase (percentage points) | $31.8 \%$ | $40.9 \%$ |
| Relative increase (percent) |  |  |

Source: 1971: Statistics Canada, 1971 Census of Canada, Labour Force Activity - Work Experience, Female Labour Force Participation by Schooling, Marital Status, Age, and Presence of Children, for Canada and the Regions. Cat. 94-774, Vol. 3, Part 7 (Bulletin 3. 7-4).

1976: Statistics Canada, 1976 Census of Canada, Supplementary Bulletins; Economic Characteristics, Female Labour Force Participation Rates by Level of Schooling, Age, Marital Status and Presence of Children. Cat. 94-836, (Bulletin 10SE7).

## WOMEN IN THE WORKFORCE

In Canada in 1979, $48.9 \%$ of women participated in the paid labour force. Table 2.8 shows the participation rate of Canadian women, by marital status and Table 2.9 shows the participation rates of married women according to the presence and ages of children in the household. Of greatest significance, not only to women but also to their families and employers, is the increasing number of women with children under six years of age, who have joined the paid labour force.

There is an inverse relationship between family income (minus the woman's earnings) and married women's participation in the workforce. In 1971, 47\% of the women in families with an income less than $\$ 3,000$ participated in the workforce, compared to $27 \%$ of women from families with incomes over $\$ 15,000$.

Much has been written about the segregation of women in the work place. In 1979, $34 \%$ of female workers were in clerical positions and their presence was concentrated in a very few industries. For example, $43 \%$ of all female workers worked in service industries and $19 \%$ worked in trade. The industries and occupations into which women workers were concentrated were also those in which monetary rewards were lowest. Even within similar occupational categories men earned more than women. In only one occupational category (retail food workers) did women earn more than their male counterparts (Statistics Canada 1979).

Women make up a greater proportion of the part-time workers. In 1980 $23.8 \%$ of women workers were part-time compared to $6 \%$ of male workers. This is significant because of the generally lower wage rates and benefits offered to part-time workers.

Finally, women workers are far less likely to be unionized. In 1982, 25\% of all female workers were unionized, compared with $37 \%$ of men. Again, this would suggest less bargaining power regarding working conditions for women.

## WOMEN WORKING IN THE HOME

Housework was defined by Proulx (1978) in her study of the Canadian housewife as "both the activities relating to the physical and educational care of the children and those involving housework proper". Walker (1976) defined it as "the sum of all useful activities performed in the home with a view to providing the goods and services which enable the family to function as a family".

Traditionally, these have been tasks that have been assigned to women. Although there may be anecdotal evidence that this tradition is changing, there is little evidence in the literature of any major change. In the 1979 C.H.S., only two males in B.C. reported their principal activity over the previous year as homemaking and neither of them was married. In data from a 1975 study in the Vancouver region by Meissner et al. (1975), the very limited contribution of employed husbands is well illustrated. In "No Exit for Wives", Meissner et a1. (1975) stated: "The domestic work week of housewives without employment is a full equivalent (give or take three hours depending on whether they have a young child) to the husband's 40 hour week on the job."

For homemakers who also have employment outside the home the burden in terms of work hours simply increases. Meissner found that even though housewives adapt and reduce the amount of housework they do when they also work outside the home, they still add about 18 hours to their average work week when they add full-time paid employment to their domestic responsibilities.

Meissner et al.'s studies further showed that in households with no young children, the men increased their contribution to housework by approximately six minutes per week (for an overall average of about 3.2 hours per week) when the wife gained employment outside the home. In households with a child under 10 years of age, the men increased their contribution to housework by about one hour per week (for a weekly average of 6.0 hours), when the wife went out to work. Table 2.10 details well the extra workload carried by a mother working outside the home; of particular note is the very small amount of weekday leisure time ( 1.8 hours per day), socialization ( 0.6 hours per day) and active leisure ( 0.1 hours per day) - a total of 2.5 hours compared with a total of 7.2 hours for the unemployed housewife. These data add further support to Gove and Hughes' (1979) idea of the nurturant role leaving the woman little time for herself.

Pleck (1985) in summarising recent writings and interpretations of studies on the division of family work, found that in general, men with families have increased the time they spend with their children but that in the narrower sense of family work the increase has been small and that wives, employed or unemployed, continue to do the bulk of the family work.

TABLE 2.10 TIME STUDIES OF HOUSEWIVES AND WIVES IN THE LABOUR FORCE WITH/WITHOUT A CHILD UNDER 10 YEARS

| HOURS PER DAY SPENT ON SELECTED ACTIVITIES |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | WORK DAY |  | OFF DAY |  |
|  | No Child | Child | No Child | Child |
| Self Maintenance (sleep, personal care, eating) |  |  |  |  |
|  | 10.7(Hrs) | 10.9(Hrs | 10.8 (Hrs) | 11.6(Hrs) |
|  | 11.6 | 11.2 | 11.3 | 11.2 |
| Total Employment Related Work Lab. force wife Housewife |  |  |  |  |
|  | 6.9 | 6.0 | 0.5 | 0.1 |
|  | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Regular Housework |  |  |  |  |
| Lab, force wife | 1.8 | 3.5 | 3.2 | 3.6 |
| Housewife | 4.8 | 6.1 | 2.5 | 3.6 |
| Active Leisure | 0.3 | 0.1 | 0.6 | 0.2 |
|  | 1.0 | 0.9 | 1.1 | 0.8 |
| Socialization | 1.2 | 0.6 | 2.2 | 1.2 |
|  | 1.6 | 1.7 | 2.3 | 1.9 |
| Leisure Lab. force wife | $3.1$ | 1.8 | 5.8 | 4.9 |
| Housewife | 5.0 | 4.6 | 6.6 | 5.7 |

Source: Adapted from M. Meissner et al. "No Exit for Wives: Sexual Division of Labour and the Cumulation of Household Demands." Canadian Revue in Sociology and Anthropology 12(4) Part 1, 1975.

### 2.3 WOMEN AND THEIR HEALTH

Many writers have tried to explain or rationalize women's high use of the health care system, despite women's mortality rates being lower than those of their male counterparts. Writers such as Waldron (1983) have examined the physiological aspects of the differences while others (for example, Verbrugge, 1983) have concentrated on the social factors. It is important to recognize that use of the health care system reflects not only health status but also perceptions and behaviour as they relate to that health status.

Some of the genetic factors believed to contribute to sex differences in morbidity and mortality, include:-
a. the possible protective effect of endogenous female sex hormones, for example in reducing women's risk of ischaemic heart disease;
b. the presence of immune factors in the X chromosome offering women greater resistance to infectious diseases; and
c. the differences associated with women's more demanding and complex reproductive functions.

Many social and behavioural factors have been offered as explanations for differences in health care utilization. These are most of ten associated with traditional sex roles and suggest that women use the health care system more because:
a. women are more health conscious, being responsible for the family's health;
b. for the non-employed woman, the opportunity cost of seeking medicai care is less than for the employed person;
c. medical visits associated with women's reproductive systems account for a large proportion of their demand for health care services;
d. disability surveys (including the C.H.S.) show women as having more days of illness and disability than men: it has been suggested that women generally are more likely to adopt a 'sick' role - in part because it is more consistent with the traditional female role;
e. the social acceptability of admitting illness, discussing symptoms and seeking help, may be more part of the female socialization;
f. demand for health services, when economic barriers are removed, is clinically related to age and inversely related to socio-economic
condition; women, especially elderly single women and single mothers, make up a large part of the lower socio-economic group.

An examination of these reasons raises the need to distinguish between reported, actual health status and health care utilization. Several of the reasons cited for women's greater use of the health care system reflect sociological and cultural motivations and not necessarily poorer health status.

Many researchers (Cleary, Mechanic and Greenly, 1982; Nathanson, 1975; Marcus, Seeman and Telesky, 1982) have examined differences between male and female morbidity. In all instances a higher level of morbidity in women was reported but this was always via a health record or from self-report surveys. None of these studies addressed the question of whether men and women experience similar levels of morbidity (although from different causes) but that women are simply more comfortable about acknowledging a discomfort or pain while men regard any sort of morbidity as a sign of weakness. To address this issue and identify true differences in health status would require clinical and functional assessments of male and female subjects as well as some measure of pain thresholds for accepting or attempting to avoid discomfort. No such studies were found in the literature.

### 2.4 EMPLOYED WOMEN AND THEIR HEALTH

Nathanson and Lorenz (1982) suggest that "the implications of increased participation by women in the labour force for their mortality, illness patterns and use of the health care system have only just begun to be considered..."

There are several components to this issue:-
a. the possible changes in women's actual health in terms of morbidity and mortality, and
b. changes in their behaviour with regard to their mental and physical health.

The overwhelming short-coming of most of the research to-date is that it is cross-sectional and relies on correlational analysis. These data therefore shed little light upon the sequence of events and fail to address the issue of whether employed women are self selecting, in part on the basis of health factors.

Studies as early as 1946 reported less illness among employed women than among housewives. Nathanson (1980) suggested that increased self-esteem and social support may explain the employed woman's better health. This idea is supported when the reduction in illness among employed women is shown to be greatest for those groups with fewer social ties (the unmarried, the divorced) and those with lower educational achievements (those not graduated from high school).

Jougla, et al.(1983) suggest that in any comparisons between housewives and employed wives, the degree of role satisfaction must be considered and that this may be more important in determining health than the activity itself. Nathanson and Lorenz (1982) reported on a study (Ladbrook, 1977) of the Wisconsin Labour Force which showed women in professional and technical occupations experiencing higher mortality rates than men in similar occupational groups, for every age group from 16-64. Ladbrook is reported
to assert that the lifestyle of professional women places them at greater risk, but no detail was provided by Nathanson and Lorenz. Ladbrook, noting that the professional males have mortality rates better than those for the total male population, suggested that reduced risk taking by the men in the professional and technical occupations must be recognized. Other studies, for example, the C.H.S. (1979), have shown an inverse relationship between men's education and their smoking.

In the Framingham study (Haynes and Feinleib, 1980), among women with three or more children, those in the paid labour force were two and a half times as likely as the housewives to develop coronary heart disease. These findings however were confined to clerical workers married to blue collar workers suggesting that factors other than labour force experience may be contributing to increased risk. The possible effects of occupational stress on the incidence of heart disease among women has been explored but there are no definitive findings to-date (Nathanson and Lorenz, 1982). It may be that this lack of definitive findings is a reflection of women's level of occupational involvement and may yet be seen to increase as women strive for higher occupational achievement.

Morton and Ungs in their Lane County, Oregon study (1979) found a higher cancer mortality rate among housewives but that study failed to take into account many potentially significant demographic variables.

Several writers report lower levels of depression among employed women. Aneshenel et al. (1981) found the lowest levels of depression among employed married men. For women, either having a family or being employed offered
protection against depression, but unlike men there was no additional benefit to the woman who was both married and employed outside the home. On the other hand, the findings of Gore and Mangione (1983) showed married, employed women to have depression levels similar to those of married employed men and lower than those of married housewives. These findings fail to address the question of causality; whether depressed women don't enter the paid labour force, or whether entering the paid labour force reduces depression.

The concept of multiple roles and role density has been used by several writers (Verbrugge, 1983) to describe the situation of women. Verbrugge reported that both few roles (for example the housekeeper with no children) and many roles (the employed mother with young children) were associated with poorer health. The women with multiple roles also reported higher use of the health care system. This appeared to be the one form of illness behaviour most available to them.

This is a multifaceted issue with few areas of consensus. The time studies discussed earlier in this Chapter demonstrated very well the differences between the lifestyles of women who work both at home and in the paid labour force and those who do not. The significance of these differences in terms of their effect on health status and health care utilization is not so clear. Socio-demographic variables such as family income and education would seem to be significant factors in health, in a woman's decision to enter the work force and in the degree of satisfaction she is likely to derive from that activity.

## CHAPTER THREE

## THE CANADA HEALTH SURVEY ${ }^{1}$

### 3.1 OVERVIEW

In accepting the philosophy of A New Perspective on the Health of Canadians (Lalonde, 1974), the Federal Government also recognized the need for more data on risk exposure leading to future health problems, on health problems that were not treated through the health care system, on the personal cost of ill-health and on the positive aspects of health. Such data would complement already available data on the causes of mortality, morbidity leading to the use of health care services, the cost of those services and the exposure of specific populations to environmental risks. The Canada Health Survey (C.H.S.) was designed to meet these new data requirements.

The basic concept underlying the model used for the development of the C.H.S. is shown in Figure 3.1.

FIGURE 3.1 BASIC MODEL OF HEALTH


Three types of health risk were measured:
i. lifestyle;
ii. biomedical; and
iii. environmental.

The questions regarding lifestyle risk explored past exposure to alcohol

[^5]and tobacco but for the other factors (see Figure 3.2) asked only about current behaviours.

Both the physical and emotional aspects of health status (recognizing that these could be the result of risk exposure and/or genetic predisposition) were measured. Each person's health problems and their consequences were recorded in order to assess the impact of ill-health.

The survey was to provide information for planning and research related areas such as health care, health promotion and disease prevention. It was designed to provide data of interest to planners, administrators, professionals and researchers working in business, government, health care institutions, research and education.

### 3.2 THE SAMPLE DESIGN ${ }^{2}$

The C.H.S., as originally conceived, was to be a continuous monthly survey with an annual cycle. It was on this basis that the sample design was developed. The Survey covered the non-institutionalized Canadian population excluding residents of the Territories, Indian Reserves and remote areas as defined by the Canadian Labour Force Survey. In total, these exclusions comprised less than $3 \%$ of the entire Canadian population. The survey field work commenced in May 1978 in the Eastern provinces, in the Central provinces in June and the entire survey population was covered from July onwards. Data collection was halted in March 1979. Only data collected during the period July 1978 through March 1979 were made available for public use.

2 A more detailed description of the sampling methodology can be found in Appendix II of The Health of Canadians: A Report of the Canada Health Survey. Ottawa: Ministry of Supply \& Services, 1981.

The Canadian population was stratified initially by province. Quebec and Ontario each contained three further strata, based on groups of provincial health regions. Each of these initial strata was further stratified into three: major cities in the region, other major urban areas and the remaining, primarily rural parts of the region. Table 3.1 shows the distribution of the sampling both by province and by population density; that is, from city, urban or rural regions. In the left hand half of the table, the number of clusters per province is shown. In columns three through five a further disaggregation is shown for the two most densely populated provinces. Following these numbers across into the right hand side of the table the patterns of sampling around the major cities can be seen. For example, in the province of Quebec, 19 clusters of households were identified; nine of these were in the Montreal region, six in the Quebec City region and four in urban and rural areas away from the main cities. Of the nine clusters in the Montreal region, five were among city households, two clusters were in urban areas and two were in rural regions. Having identified households as the sampling units and set an annual sample size of 40,000 for the Interview component of the survey, 12,000 households from 100 geographical clusters were then divided into monthly samples of ten households per cluster. The Physical Measures component was administered to seven of the ten households in half of the 100 clusters. When as a result of government wide budget cuts, the decision to terminate the study was made, the sampling per cluster was increased to ensure that close to 12,000 households would be surveyed before the data collection was discontinued.

### 3.3 THE SCOPE OF THE SURVEY

The survey was made up of four parts:

1) the Household Record Card (HRC) which identified the characteristics of the dwelling as well as the persons residing in it; in all 10,577 households participated in the survey - a response rate of $86 \%$ (Broyles et al., 1982).
2) The Interviewer Administered Questionnaire (IAQ) collected data on health problems, use of drugs and health care services, accidents and disabilities; all age groups were included. Information was accepted on a proxy basis, it being considered 'visible' and therefore readily able to be reported by others. While this questionnaire was completed on behalf of 31,688 individuals, a response rate of $79 \%$ (Broyles et al., 1982), fewer than $50 \%$ of those persons were actually present for the duration of the interview.
3) The Lifestyle and Health Questionnaire (LHQ) was a self-administered questionnaire covering emotional health, alcohol and tobacco use, activity patterns, driving habits and preventive measures. It was self administered because the topics were considered more personal than the previous set of questions. Further, this questionnaire was restricted to those over 15 because the behaviours in question were considered 'adult' and reading ability was required. It was completed by 23,791 individuals, a response rate of $89 \%$ (Broyles et al., 1982).
4) The Physical Measures Questionnaire (PMQ) was in two parts; the physical measurements of blood pressure, cardiorespiratory fitness, height, weight and skin fold in persons over two years were taken and blood samples were taken from persons over three years in order to determine immune status as well as biochemical and trace element levels. Only a small subset (approximately 30\%) of the subjects were asked to participate in this part of the study.

TABLE 3.1 C.H.S. STRATA AND CLUSTERS


I: Interview clusters.
P: Subsample of clusters for physical measures.
Source: Appendix II. The Health of Canadians: Report of the Canada Health Survey. Ottawa: Ministry of Supply and Services, 1981.

### 3.4 THE CANADA HEALTH SURVEY DATA

Questionnaire data were captured directly onto computer-readable files. Extensive editing procedures, manual and automated, were carried out in order to identify inconsistencies. Once editing was complete, a number of summary or indicator variables were calculated for each person and added to the file, for example, The Physical Activity Index and the percentile for the family income.

A series of five weights were provided with the data to allow for the production of population estimates. These weights each had relevance to different sections of the data file and were calculated using 'a post-stratification ratio estimate plus relevant estimates of provincial populations by age and sex'. In addition the size of the sub-adjustments responding to a particular section of the survey and relevant adjustments for unknowns were considered in the calculation of the weights.
(Because of the computational complications involved in using several different weights in Multiple Classification Analysis and the belief that the findings of this study would be equally valuable without being able to be generalized to the total population, the weights provided with the C.H.S. data were not used in this study.)

The C.H.S. adjustment for non-response, took place on five levels:

1) at the household level, non-responding households were replaced conceptually by an 'average' household determined from all those households which responded within the same cluster in the same month;
2) persons for whom responses occurred only on the Household Record Card were excluded from the survey file; the number excluded was considered negligible.
3) where compulsory items in the LHQ, PMQ and Blood were missing, adjustment was made by means of the sampling weights. This adjustment used the assumption that respondents and non-respondents are similar with respect to health related data although a study of the IAQ data of non-respondents would suggest that they tended to be slightly less healthy. The adjustment via the sampling weights was considered the best of the methods available.
4) where there were no responses to a full section within a questionnaire, for example when no questions in the alcohol section were answered, all items in that section were coded as unknown;
5) single data items left unanswered were coded as unknown.

The C.H.S. data used for this study was extracted from a computer tape in the UBC Data Library.

FIGURE 3.2 A SUMMARY OF DATA ITEMS INCLUDED IN THE CANADA HEALTH SURVEY


Source: Canada Health Survey: Data Users Guide. Statistics Canada, Ottawa, 1982.

THE MODEL

### 4.1 THE QUESTIONS AND THE STRUCTURE

## THE QUESTIONS

This study addresses four questions:

1. Do women who participate in the paid labour force report poorer health status than their counterparts who are homemakers?
2. Do women who participate in the paid labour force exhibit lifestyle patterns significantly different from their counterparts who are homemakers?
3. Do women in the paid labour force exhibit health care utilization patterns significantly different from their homemaker counterparts?
and 4. Do women's lifestyles, reported health status and health care utilization patterns differ from those of their male counterparts in the paid labour force?

Initially this study set out to answer the first question: 'Do women who participate in the paid labour force report poorer health status than their counterparts who are homemakers?' One of the reasons for believing that workforce women might experience poorer health was that so often women have added their employee status to an already busy life as wife, parent and homemaker. This phenomenon of multiple roles is probably most common among women aged $25-45$ but the consequences (good or bad) may not be evident until later in their lives. The cross-sectional nature of the C.H.S. data and the lack of information regarding past work histories meant that, to search for any relationship between multiple roles and health status, this
study had to use the 25 - 44 year age group. This then limited the study to the question of immediate rather than long term health consequences.

In an attempt to address the question of long term health consequences, the second question was added to the study, namely, 'Do women who participate in the paid labour force exhibit lifestyle patterns significantly different from their counterparts who are homemakers?' In other words, if the women in the paid labour force do not currently appear to be in any poorer health, is there anything in their current health risk exposure, as indicated by their lifestyle patterns, that could lead one to believe that in the future, they may experience poorer health than their homemaker counterparts?

The third question posed by this study, 'Do women in the paid labour force exhibit health care utilization patterns significantly different from their homemaker counterparts?' completes the question in terms of planning for the health care consequences of so many women entering the paid labour force.

The fourth and final question 'How do the women's lifestyles, reported health status and health care utilization patterns compare with those of their male counterparts in the paid labour force?' enables the findings concerning the women's experience to be placed in the context of "the rest" of that age group. It enables one to assess the possibility that as women move into the paid labour force, their health experiences will become more similar to those of men.

The study group was therefore men and women aged $25-44$ years
. who participated in the C.H.S.;

- who either participated in the paid labour force or were homemakers; and . who had no activity limitations which would limit or affect their options for either work or leisure.

THE MODEL
The basic components of the C.H.S. have been taken as a starting point for the model in this study (see Figure 4.1).

FIGURE 4.1 THE BASIC COMPONENTS OF THE C.H.S. MODEL


To this model, demographic variables were added because of their potential capacity to explain variations in the other three components. Female preventive behaviours were separated out because they are not truly risk factors in that they don't represent behaviours that actually cause disease and their practice requires the services of health care professionals (for Pap smears and professional breast examinations). ' Figure 4.2 shows these additional components. The figure also shows how the model could be used to ask whether:

- demographic variables could explain variations in health risk behaviours(1),
. demographic variables and health risk behaviours could explain variations in health status ( $2 \mathrm{a} \& 2 \mathrm{~b}$ ), and if
. demographic variables, health risk behaviours, health status and preventive behaviours were associated with particular health care consequences ( $3 \mathrm{a}, \mathrm{b}$ and c ).

For each of these components of the model, the actual variables to be used were chosen from those collected in the C.H.S. Figure 3.2 shows the variables used in the C.H.S. and Figure 4.3 shows the individual variables from the C.H.S. fitted into the model for this study.

A major limitation of this study is its inability to address the issues of chronology and causality; it can only attempt to demonstrate associations. The model for this study shows those associations to be unidirectional. This constitutes a major simplification of the issues. In reality the reported health status and the level of health service utilization must each drive the other and perceptions of poor health probably have a negative effect on lifestyle. For example, the fact that a person takes medications for high blood pressure may reinforce the recognition of this as a chronic condition, making such persons feel more depressed and not leading a normally active life, thereby compounding the initial problem. So, while the implied causality of model for this study moves in a single direction, it is recognized that the forces within the system move both ways among all components and that a study at any greater level of detail would need to address the very complex question of causality.

The remainder of this chapter outlines in more detail each of the variables used in the study. In the case of the health risk factors, some rationale for their inclusion also is offered.



### 4.2 THE DEMOGRAPHIC VARIABLES

The demographic variables (from the C.H.S.) included in this study are shown in Figure 4.3. They were included if the literature indicated that the factor could influence health behaviours or outcome. The rest of this section discusses each of the individual demographic variables included in the model.

## REGION

The C.H.S. identified subjects as coming from one of five regions:
i. The Atlantic Provinces,
ii. Quebec,
iii. Ontario,
iv. The Prairie Provinces and
v. British Columbia

While the provision of health services in Canada is to some degree protected by the Canada Health Act, the actual provision of services is a provincial responsibility. The type and level of services therefore varies not only across the regions identified by the C.H.S. but also within these regions because:
. some of the regions include more than one province,

- there are other variations in supply such as those found between rural and urban areas, and
- individual provinces develop different priorities for service provision.

For example, city women have easier access to mammography because the technology is centered in the cities and, further, British Columbia has a longer established and more aggressive pap smear cytology programme than the
other provinces. Therefore, Ontario and Quebec with large city populations and British Columbia with more highly promoted programmes in women's health are all more likely to report higher rates of female preventive behaviours than the other provinces. The disaggregation of the data into just five regions can therefore only be expected to identify major differences. Table 4.1 shows the distribution of the study group across the five regions.

TABLE 4.1 PERCENTAGE DISTRIBUTION OF STUDY GROUP BY REGION AND SEX

| REGION | $\begin{gathered} \text { WOMEN } \\ (\mathrm{n}: 3760) \\ \hline \end{gathered}$ | $\begin{gathered} \text { MEN } \\ (\mathrm{n}: 3562) \\ \hline \end{gathered}$ |
| :---: | :---: | :---: |
| Atlantic Regions | 23.3 | 21.3 |
| Quebec | 21.4 | 21.8 |
| Ontario | 21.4 | 21.8 |
| The Prairies | 21.5 | 22.3 |
| British Columbia | 12.4 | 12.8 |
| TOTAL | 100.0 | 100.0 |

## SEASON OF DATA COLLECTION

The C.H.S. data that were placed in the public realm were from interviews carried out between July 1978 and March 1979. This was the only period during which there was concurrent sampling from all parts of the country. Many of the questions in the survey asked participants to report on activities of the previous two weeks. However it seems likely that activities such as exercise, socializing and alcohol consumption could vary according to the season. For example, people may socialize more in December but exercise less during the colder months. The season of the data collection was therefore included and the percentage distribution of the study group is shown in Table 4.2.

TABLE 4.2 PERCENTAGE DISTRIBUTION OF STUDY GROUP BY SEASON OF DATA COLLECTION AND SEX

| SEASON OF DATA COLLECTION | WOMEN <br> $(\mathrm{n}: 3760)$ | MEN <br> $(\mathrm{n}: 3562)$ |
| :--- | :---: | :---: |
| July to September 1978 | 23.5 | 24.0 |
| October to December 1978 | 39.7 | 39.5 |
| January to March 1979 | 37.1 | 36.5 |
| TOTAL | 100.0 | 100.0 |

## MARITAL STATUS

In the original data, marital status was recorded as:

```
    i. single (never married)
    ii. married (including common law)
iii. widowed
    iv. separated/divorced.
```

The literature generally indicates that marriage is associated with better health; for example, studies have reported married women experiencing less depression and fewer psychiatric problems (Aneshenel, Frerichs \& Clark, 1981; Gove \& Mangione, 1983). It should be noted however that Goldman and Ravid (1980) in reporting on the better mental health of both married men and women caution the reader against assuming a causal relationship and suggest that it may be that less depressed people are more likely to marry. Because of the relatively small numbers in each of the 'not married' categories, subjects were simply identified as 'married' or 'not married'(for the purposes of this study). Table 4.3 shows the distribution of the sample.

TABLE 4.3 PERCENTAGE DIS'TRIBUTION OF STUDY GROUP BY marital status and sex

| MARITAL STATUS | WOMEN <br> $(n: 3760)$ | MEN <br> $(n: 3562)$ |  |
| :--- | :--- | :---: | :---: |
| Not Married |  | 15.2 | 15.6 |
| Married | 84.7 | 83.8 |  |
| Unknown |  | 0.1 | 0.6 |
|  |  | 100.0 | 100.0 |

## FAMILY SIZE

Family size has been included for its potential ability to indicate domestic responsibilities. It would seem reasonable to expect that the women living in larger families would spend more time on domestic activities whether they also participated in the paid labour force or not. However, there also could be women living in a large family who are in fact dependents and for whom such assumptions should not be made. Table 4.4 shows the percentage distribution of family sizes and their distribution within the subset of the C.H.S. used for this study.

TABLE 4.4 PERCENTAGE DISTRIBUTION OF STUDY GROUP BY FAMILY SIZE AND SEX

| FAMILY SIZE | WOMEN <br> $(n: 3760)$ | MEN <br> $(n: 3562)$ |  |
| :--- | :--- | :---: | :---: |
| One Person | 5.2 | 7.4 |  |
| $2-3$ Persons |  | 31.2 | 35.0 |
| $4-6$ Persons |  | 5.1 | 53.8 |
| 7 or more Persons |  | 3.8 |  |
|  | TOTAL | 100.0 | 100.0 |

## FAMILY INCOME

Income per se, or as an indicator of socio-economic class has been shown to be associated with behaviours such as cigarette smoking and alcohol consumption. In the C.H.S. data, family incomes were reported in quintiles which were developed from the reported family incomes after those incomes had been adjusted to reflect the size of the family and the municipality of residence. For the 25 - 45 year age group included in this study the income distribution by quintile is shown in Table 4.5.

TABLE 4.5 PERCENTAGE DISTRIBUTION OF STUDY GROUP BY INCOME AND SEX

| INCOME QUINTILE | WOMEN <br> $(\mathrm{n}: 3760)$ | MEN <br> $(\mathrm{n}: 3562)$ |
| :--- | :---: | :---: |
| First (lowest) | 14.8 | 9.1 |
| Second | 18.4 | 17.8 |
| Third | 20.3 | 20.3 |
| Fourth | 19.9 | 20.6 |
| Fifth (highest) | 21.3 | 26.7 |
| Unknown | 5.4 | 5.5 |
|  |  | 100.0 |

## EDUCATION

Education, another indicator of socio-economic status, also may be significant because awareness of health risks necessarily depends upon learning skills in terms of registering and assimilating new information. Also, the current growth of the 'fitness' industry has been asserted by some to be a purely middle class phenomenon.

The grouping of the subjects according to the educational levels identified in the C.H.S. is shown in Table 4.6.

TABLE 4.6 PERCENTAGE DISTRIBUTION OF STUDY GROUP BY EDUCATION AND SEX

| EDUCATIONAL LEVELS | WOMEN <br>  <br>  <br> Some Secondary <br> Some Post-Secondary <br> Post-Secondary Diploma <br> University Degree | 68.1 |
| :--- | :---: | :---: |
| $(\mathrm{n}: 3562)$ |  |  |
| Unknown | 8.0 | 63.9 |
|  | 14.2 | 8.9 |
|  | 9.2 | 10.7 |
| TOTAL |  | .6 |

## ECONOMIC RESPONSIBILITY

The increasing number of women supporting a family represents a further expansion of the roles women may have to play and which may or may not cause
some of their behaviours to become more like those of men who have traditionally been responsible for the economic welfare of the family (Armstrong \& Armstrong, 1978). In the C.H.S. subjects were asked whether they were the principal income earner for the family. Table 4.7 shows the percentage of principal income earners in this study group.

TABLE 4.7 PERCENTAGE DISTRIBUTION OF STUDY GROUP BY ECONOMIC RESPONSIBILITY AND SEX

| ECONOMIC RESPONSIBILITY | WOMEN <br> $(n: 3760)$ | MEN <br> $(n: 3562)$ |
| :--- | :---: | :---: |
| Principal Earner | 17.8 | 91.5 |
| Not Principal Earner | 82.2 | 8.8 |
|  |  |  |
| TOTAL | 100.0 | 100.0 |

Other demographic variables available in the C.H.S. but not used in this study, include:
i. type and size of dwelling
ii. mobility of family/changes in residence
iii. place and language of birth
iv. industry/occupation and hours of work
v. individual income from employment.

While size of dwelling could be used as an indication of domestic responsibilities, size of economic family was considered a better indicator because although a woman might have help with housecleaning, she was much less likely to have help with the care and nurturing of family members.

The more detailed information on the subject's role in the workforce would enable questions to be asked regarding the impact on health of different types and conditions of work. While these are equally important questions, they are beyond the scope of this thesis.

In this model, the demographic variables have always been considered separately. Obviously however, there are many relationships among them. For example, education and income are both indicators of socio-economic status and could perhaps be merged to create one single indicator. This was not attempted. Similarly, marital status, family size and economic responsibilities could possibly be linked to create an indicator of roles and responsibilities. However such an indicator would be open to considerable debate without additional information on the ages and levels of dependence of the family members and this information was not available in the C.H.S. ${ }^{1}$

### 4.3 HEALTH RISK BEHAVIOURS

Figure 3.2 shows the data items in the C.H.S. included for their potential to influence health status. For this study, one indicator for each of the lifestyle factors was chosen. Three additional lifestyle factors found within the C.H.S. data (motor vehicle use, life events and social contacts) were also included because of the evidence supporting their potential ability to influence health. Factors such as hours of sleep and the regular consumption of breakfast which have been shown in other studies to have an impact on health status could not be included in this study because they did not appear in the original C.H.S. data set. Factors such as these, and others which may increase the ability of the model to predict health outcomes, will be discussed in the final chapter.

[^6]SMOKING
The health hazards of smoking have been well documented. A 1980 report by the U.S. Department of Health and Human Services provides a good overview of the major disease consequences of tobacco use by women (Gritz, 1984). Smoking accounts for $25 \%$ of all cancers; it has been causally linked with cancer of the lung, larynx, oral cavity and oesophagus; it has been strongly associated with the development of bladder, kidney and pancreatic cancer. The risk of developing coronary heart disease is increased at least by a factor of two in women who smoke. This risk becomes ten fold among women who smoke and use oral contraceptives (Gritz, 1984). Smoking also is associated with chronic obstructive lung disease.

Of particular significance to women is the potential effect of smoking on reproduction: reduced birth weights, spontaneous abortions, placental abnormalities and foetal death are some of the possible outcomes related to smoking during pregnancy.

The questions in the C.H.S. covered past and present smoking habits, numbers and brands of cigarettes smoked and attempts to stop smoking. Subjects answering these questions were placed in one of the following categories:
i. current regular smoker,
ii. current occasional smoker,
iii. past regular smoker,
iv. past occasional smoker or
$v$. never smoked.

For the purposes of this study, these categories were regrouped as shown in Table 4.8.

## TABLE 4.8 PERCENTAGE DISTRIBUTION OF STUDY GROUP BY CIGARETTE SMORING EXPERIENCE AND SEX

| CIGARETTE SMOKING EXPERIENCE | WOMEN <br> $(\mathrm{n}: 3760)$ | MEN <br> $(\mathrm{n}: 3562)$ |
| :--- | :---: | :---: |
| Current Smoker (Regular or Occasional) | 39.3 | 39.9 |
| Past Smoker (Regular or Occasional) | 19.0 | 22.9 |
| Never Smoked | 30.5 | 18.0 |
| Unknown | 11.3 | 19.2 |
|  |  | 100.0 |

ALCOHOL
Alcohol is a drug and people do become addicted. Heavy drinking is associated not only with illnesses such as hypertension, cirrhosis, breast cancer and disorders of reproduction but also with cognitive dysfunction which can lead to motor vehicle accidents, other types of accidents, belligerence, domestic turmoil and ultimately interference with a person's ability to be gainfully employed. On the other hand moderate alcohol consumption has been reported as having a protective effect against chronic heart disease and may be valuable in assisting with stress reduction (Milsum, 1984).

Within the literature, there does not appear to be great consistency in the definition of moderate versus heavy drinking, and in some studies no specific definitions are offered (Wilsnack, Wilsnack \& Klassen, 1984; Celentano \& McQueen, 1984; Johnson, 1982).

Johnson's report on Sex Differences and Alcohol (1982) used a formula of ounces of pure alcohol per day converted to percentage of alcohol in the
blood stream. The definitions derived from this formula are such that one beer per day would classify a 135 pound woman as a moderate drinker; a 165 pound man would be a moderate drinker having two beer per day and a heavy drinker if he drank three beer a day. Johnson suggests that problem drinking cannot be defined simply in terms of volume of alcohol consumed (unless it's very high), but that the behavioural and social impairment derived from the alcohol must also be considered.

The C.H.S. asked subjects to record on a daily basis, the number of alcoholic beverages they consumed over a seven-day period. A summary number of 'drinks per week' was then generated. Other questions in the survey asked about the type of alcohol usually consumed, alcohol-related problems and recent changes in drinking patterns.

This study used the recorded number of drinks consumed in a week as an indicator of alcohol consumption. Table 4.9 shows the number of drinks assigned to each category and the percentage distribution of the subjects in this study across those categories.

TABLE 4.9 PERCENTAGE DISTRIBUTION OF THE STUDY GROUP BY ALCOHOL CONSUMPTION AND SEX

| LEVELS OF CONSUMPTION | $\left.\begin{array}{c}\text { WOMEN } \\ \\ \\ \hline\end{array} \mathrm{n}: 3760\right)$ | MEN <br> $(\mathrm{n}: 3562)$ |
| :--- | :---: | :---: |
| No Drinks in Previous Week | 9.5 | 5.3 |
| One to Seven Drinks | 34.3 | 27.3 |
| Eight or More Drinks | 11.7 | 31.8 |
| Unknown | 44.5 | 35.6 |
| TOTAL |  |  |

## PHYSICAL ACTIVITY

In the past ten years there has been much discussion on the subject of physical fitness. The Canadian Government has sponsored the Participaction Program and employers are being encouraged to set up employee fitness centres. Community centres as well as numerous private businesses are now offering 'keep fit' programmes.

Some of the benefits identified with regular physical activity are decreased risk of:

- chronic heart disease and sudden death,
- osteoporosis,
- hypertension and
- Type II diabetes.

It has also been suggested that exercise can be used to:

- alleviate the symptoms of mild to moderate depression and - reduce symptoms of general anxiety (U.S. Department of Health \& Human Services, 1985).

It is not known whether these health benefits from exercise are through improvements in physical fitness or through other pathways such as improved serum lipoprotein profiles, fibrinolytic activity, decreased platelet adherence or other metabolic changes. For example, some health benefits seem to be achieved through activities such as yoga which do not improve cardiorespiratory endurance (U.S. Department of Health \& Human Services, 1985).

Obesity, a factor associated with hypertension, and one of the seven health risk factors identified by Berkman and Breslow (1983), results primarily from an imbalance of calories consumed and calories expended.

Physical activity can play a major part in remedying such imbalances.

It is uncertain just which factors affect peoples' level of physical activity, but some of those mentioned in the literature include:

- previous experience in sports,
- family and peer support,
- self-motivational characteristics,
- positive feeling resulting from the activity.

Less certain are:

- accessibility of facilities
. time constraints and
. climatic conditions.

The C.H.S. asked subjects to report their activity during the previous two weeks. This included activity during discretionary time, in exercise, sport, physical recreation and household chores. An index was then created which was the sumation of the frequency of each activity multiplied by the average duration in minutes of each activity and by the average metabolic cost of that activity. ${ }^{2}$ The range of scores generated in this way was zero to 5500. Table 4.10 shows the categories derived from these scores and Table 4.11 shows the level of activity that would generate a mid-range score of approximately 3000.

2 The frequency, duration and average intensity were all weighted equally in the development of this Physical Activity Index. The researchers for the C.H.S. suggest that 'while there is no compelling evidence to apply differential weights, neither is there strong evidence to weight them equally'. A more serious limitation is that the 'index does not require any particular mix of frequency, duration and intensity'. (Health \& Welfare Canada \& Statistics Canada, 1981)

TABLE 4.10 PHYSICAL ACTIVITY INDEX CATEGORIES FOR ALL SUBJECTS IN THE CANADA HEALTH SURVEY

| CATEGORY | SCORE | PERCENTAGE <br> DISTRIBUTION |
| :--- | :---: | :---: |
| Sedentary | $0-749$ | 16.0 |
| Moderately Sedentary | $750-1749$ | 18.0 |
| Moderate | $1750-2999$ | 16.0 |
| Moderately Active | $3000-5499$ | 18.0 |
| Very Active | $5500+$ | 18.0 |
| Unknown |  | 14.0 |
|  |  | 100.0 |

For the purposes of this study, these categories were reduced to three:

1. Sedentary and moderately sedentary
2. Moderate and
3. Moderately active and very active.

TABLE 4.11 THE FITNESS CANADA PRESCRIPTION FOR PHYSICAL ACTIVITY
THE IDEAL MINIMUM LEVEL OF PHYSICAL ACTIVITY.

1. MOVE: walk, climb, ride a bike ... every day, as often as possible.
2. STRETCH \& DEEP BREATH: take a fitness break \& relax ... every day, as needed when tense.
3. PUSH, BEND, TWIST AND SWING: ... at least three times each week
4. RUN, SWIM, CYCLE, SKI: 15-20 minutes of continuous aerobic activity vigorous enough to increase your heart rate and make you breathe deeply. ... at least three times each week.
5. ENJOY LIFE: spend time at sports, hobbies or outdoor activities. ... a two hour period at least once a week.

This level of activity translates into a minimum score of 3,000 on the Physical Activity Index

Of the women included in this study, $32 \%$ reported being active or moderately active in the previous two weeks; $20 \%$ reported moderate activity and $31 \%$ reported being moderately inactive or sedentary. A further $17 \%$ did not provide sufficient information for a score to be generated. Table 4.12 shows the activity levels of the men and women included in this study.

TABLE 4.12 PERCENTAGE DISTRIBUTION OF STUDY GROUP BY PHYSICAL ACTIVITY LEVEL AND SEX

| ACTIVITY LEVELS | WOMEN <br> $(\mathrm{n}: 3760)$ | MEN <br> $(\mathrm{n}: 3652)$ |
| :--- | :---: | :---: |
| Active or moderately active | 32.0 | 33.5 |
| Moderate | 20.2 | 14.0 |
| Inactive or moderately inactive | 30.8 | 27.3 |
| Unknown | 17.0 | 25.2 |
|  |  | 100.0 |

## LIFE EVENTS

In 1967 Holmes and Rahe (1967) noted that clusters of life events (changes) tended to characterize the living patterns experienced by patients immediately prior to their admission to hospital. This was interpreted in terms of the increased levels of stress experienced by the patient leading them to, or making them susceptible to illness.

Selye (1974) has written extensively on the presence of stress in every living organism and suggests that a certain level of stress is highly desirable. However, each organism has a varying threshold beyond which its capacity to maintain homeostasis in the presence of a stressor is compromised. At that point the health of the organism becomes vulnerable.

Holmes and Rahe found that people largely agreed about the perceived stressfulness of frequently encountered life events and from their work,
developed a table of 42 items, each scored for their relative stressfulness (see Table 4.13). Implicit in this scale is the concept that rather than the emotional nature of the event (happy, sad, good, bad), it is the extent of the change involved that determines the ranking of the event. Other researchers feel that the quality of the event and other characteristics such as the subject's perception of or reaction to that event, are more important than the change itself (Haney, 1980).

TABLE 4.13 SOCIAL READJUSTMENT RATING SCALE

| RANK | LIFE EVENT | MEAN VALUE <br> (life change units) |
| :--- | :--- | :---: |
| 1 | Death of spouse | 100 |
| 2 | Divorce | 73 |
| 3 | Separation | 65 |
| 4 | Jail term | 63 |
| 5 | Death of close family member | 63 |
| 7 | Marriage | 50 |
| 8 | Fired at work | 47 |
| 10 | Retirement | 45 |
| 12 | Pregnancy | 40 |
| 13 | Sex difficulties | 39 |
| 19 | Change in number of arguments with spouse | 35 |
| 22 | Change in responsibilities at work | 29 |
| $31-36$ | Change in work, residence, outside | $20-18$ |
| $38-40$ | activities, etc. |  |
| 41 | Change in home habits | $16-15$ |
| 42 | Vacation | 13 |

Source: J.H. Milsum, Health, Stress and Illness: A Systems Approach. New York: Praeger, 1984. Adapted from T.H. Holmes \& R.H. Rahe, "The Social Readjustment Rating Scale." Journal of Psychosomatic Research 11 (1967): 213-218.

The C.H.S. asked subjects to indicate which of the following had happened to them in the previous 12 months:

- 'you stopped full-time school
- lost a job or were unemployed
- got married
- someone moved in with you
- you had financial problems
- you and your spouse separated
- the arrival of a baby in the home
- you had a serious illness
- someone dear had a serious illness
- you quit or retired from full-time work
- you started working or changed jobs
- the death of someone dear
or
. none of these.'

In scoring these, the C.H.S. assigned equal weight to these events and simply reported the number of events experienced by each subject. The experiences of the men and women included in this study are shown in Table 4.14.

TABLE 4.14 PERCENTAGE DISTRIBUTION OF STUDY GROUP BY NUMBER OF LIFE EVENTS AND SEX

| NUMBER OF LIFE EVENTS IN PREVIOUS YEAR | $\begin{gathered} \text { WOMEN } \\ (\mathrm{n}: 3760) \\ \hline \end{gathered}$ | $\begin{gathered} \text { MEN } \\ (\mathrm{n}: 3562) \end{gathered}$ |
| :---: | :---: | :---: |
| One or no life events | 68.8 | 62.0 |
| Two or three life events | 18.9 | 16.0 |
| Four or more life events | 2.8 | 3.6 |
| Unknown | 9.5 | 18.3 |
| TOTAL | 100.0 | 100.0 |

## COMPANIONSHIP - SOCIAL SUPPORT

Much has been written about the relationship between social integration and levels of morbidity and mortality (Wethington \& Kessler, 1986). The exact way in which social integration benefits the individual is not really understood but it is discussed in terms of having additional resources available during times of stress (stress being defined by one writer (Gottlieb, 1985) as that time when resources do not meet demands/needs).

Jacobson (1986) outlines some of the many issues to be resolved, including more consistency in the definitions of illness, stress and measurements of social support if the nature of the benefits is ever to be
fully understood.

Other writers (Wethington \& Kessler, 1986; Kelner, 1985) suggest that the number of social contacts in and of itself is not sufficient information and other details that should be used in assessing social support systems include:
. the degree of intimacy in the relationship,
. the type of need met by the relationship (for example, nurturing, attachment, feedback or mastery),

- the interconnections between the members of a person's social network and
- the number of spheres in which that support is offered (for example, whether it is family centred, work centred, leisure centred or any combination of these). Friendships that overlap several spheres of a person's daily life are deemed to be more valuable.

The only indication of social relationships provided by the C.H.S. data was in response to the question: 'Which of the following best describes how you spent your leisure time during the last two weeks?'
. almost all of it by myself,

- a lot of it by myself,
- about half of it by myself and half of it with others
- a lot of it with others
- almost all of it with others.

For the subset of subjects used in this study, the answers were combined to form three groups. Table 4.15 shows the groups and the percentage distribution of the subjects across those groups.

TABLE 4.15 PERCENTAGE DISTRIBUTION OF STUDY GROUP BY LEISURE TIME COMPANIONSHIP AND SEX

| LEVEL OF COMPANIONSHIP | WOMEN <br> $(\mathrm{n}: 3760)$ | MEN <br> $(\mathrm{n}: 3562)$ |
| :--- | :---: | :---: |
| A lot or most of leisure with others | 53.1 | 53.8 |
| Half alone and half with others | 27.9 | 21.0 |
| A lot or most of leisure time alone | 10.1 | 6.9 |
| Unknown | 8.9 | 18.3 |
|  |  |  |
|  |  |  |
|  |  |  |

HORMONE PILLS (Women Only).
Oral contraceptives have been used by women for about 25 years. The principal health issue surrounding their use has been their association with cardiovascular disease and neoplasia (Diczfalusy, 1986).

In the 1960's, oral contraceptives, (primarily oestrogen), were associated with hypertension, venous thromboembolism, stroke, myocardial infarction and cancer of the endometrium. In the 1970's the introduction of progresterone as an oral contraceptive failed to reduce many of these associated risks (Diczfalusy, 1986).

With the gradual reduction in the amount of steroid used and the refinement of the options such as fixed dose combinations of progesterone and oestrogen and triphasic products which attempt to imitate the cyclic profile of ovarian steroid secretion, the relative risks associated with oral contraceptives appear to have been reduced but not completely eliminated. A 1985 study by Porter et al.(1985), found a positive association between current oral contraceptive use and stroke and M.I. Diczfalusy (1985) reported varying risks of cancer with oral contraceptive use:
. ovarian and endometrial cancer reduced 50\%,
. no overall increase in the risk of breast cancer but certain subgroups may be at greater risk when they use oral contraceptives at specific stages of their reproductive life,
. it is possible that prolonged use (over five years) produces a slightly increased risk of cervical cancer but assessment of this risk is highly complex because of the confounding effect of differences in sexual practice,

- actually reduced risks of benign breast disease, ovarian retention cysts, pelvic inflammatory disease, iron deficient anaemia, ectopic pregnancy and possibly rheumatoid arthritis.

The C.H.S. asked subjects, 'Are you taking either,

- birth control pills (for contraception, to regulate the menstrual cycle or for some other reason),
- female hormone pills (to control the symptoms of menopause or for some other reason),
. or neither of these.'

The results were tabulated simply as "Yes" or "No" and for the women included in this study, the frequencies are shown in Table 4.16.

TABLE 4.16 PERCENTAGE DISTRIBUTION OF STUDY GROUP BY HORMONE PILL CONSUMPTION

| TAKING HORMONE PILLS | WOMEN <br> $(n: 3760)$ |
| :--- | :---: |
| Yes | 15.5 |
| No | 76.0 |
| Unknown | 8.5 |
|  |  |
|  | TOTAL |

## FEMALE PREVENTIVE BEHAVIOURS

This is a derived indicator which includes the subject's score on
Professional Breast Examination, Breast Self Examination and Papanicolaou Smear test. Each behaviour represents a screening process aimed at identifying cancer at as early a stage as possible because better survival rates are associated with intervention at an early stage of the disease.

## BREAST SCREENING

Breast cancer causes more deaths than any other cancer in women and is the leading cause of death in women aged 45-54 years (Ellerton \& Smillie, 1986).

Several studies (Ellerton \& Smillie, 1986; Hislop, Coldman \& Skippen, 1984; Foster, 1978) reported that among women with tumours, a high percentage
(86-90\%) report having detected their own tumour. In a study on 335 patients with breast cancer reported by Foster et al., the benefits of regular breast examination were apparent in terms of the size of the tumour at the time of its discovery and the lower incidence of axillary node metastases. Women routinely practicing breast self examination (about $25 \%$ ) were found to have an age adjusted maximum tumour size of $1.97 \mathrm{~cm} \pm 0.22$ while women who never performed breast self examination (about 50\%) were found to have an age adjusted maximum tumour size of $3.59 \mathrm{~cm} \pm 0.15$.

On the other hand Greenwald (1978) reported a greater percentage of cases (53.8\%) in Clinical Stage I when detection is by professional examination rather than by self examination or accidental (27.0\%). Greenwald also reported that of all the women reportedly practicing breast self-examination at the time their tumour was discovered, only $69.9 \%$ actually discovered the tumour during a self examination.

A possible explanation for the great variations in study findings may come from the work of Hislop, Coldman and Skippen (1984). They reported that in a group of 416 women, $72 \%$ reported that they regularly performed breast self examination but on further inquiry only $10 \%$ could be said to practice all components of the examination adequately; that is, monthly visual inspection plus thorough palpation of the breasts and axillae.

Professional breast examination is normally associated with routine medical examinations unless the woman presents a specific concern regarding breast disease. Hislop et al., found that among women with breast cancer, the annual medical examination was associated with smaller tumours but that this was statistically significant only for those women who did not examine their
own breasts.

Morrison (1986), reporting on the Health Insurance Plan of Greater New York's randomized controlled trial of breast cancer screening, comments on the lack of evidence about the efficacy of the physical examination separate from the associated mammography.

The Canadian National Study of Breast Cancer Screening currently underway will report on the results from mammography and physical examination versus physical examination only.

Greenwald et al., estimated that breast self examination and routine professional examination could result respectively in an $18.8 \%$ to $24.4 \%$ reduction in mortality from breast cancer.

CERVICAL CANCER SCREENING
The 1982 Canadian Task Force on Cervical Cancer Screening Programs (Department of National Health \& Welfare, 1982) stated that squamous cell carcinoma of the cervix can be controlled by means of a cytological screening programme for the following reasons:

- invasive squamous cell carcinoma of the cervix is preceded by a spectrum of disease, extending over many years that may be recognized at the stages of dysplasia and carcinoma in situ;
- in a significant portion of patients with severe dysplasia or carcinoma in situ the disease, if untreated, will develop into invasive squamous cell carcinoma;
- cytological evidence of dysplasia and carcinoma in situ can be easily,
safely and economically obtained by the preparation and examination of smears;
. once dysplasia or carcinoma in situ has been identified further progress of the disease can be prevented by simple therapeutic procedures and continuing surveillance.

The Canadian rates for malignant neoplasms of the uterus have dropped significantly between 1952 and 1980. For women aged 35-64 the rate per thousand has dropped from around 30 to approximately 10.

British Columbia has had a more extensive cytology programme operating for longer than any other area in the world. Kinlen and Doll (1973) compared the mortality rates for B.C. against those of Ontario and the rest of Canada and found that although the mortality from cervical cancer had declined materially for women under 45 , there was little difference between the rates for British Columbia and those for the rest of Canada. For women aged 45 64, British Columbia has experienced a significantly greater decline in mortality than the rest of Canada. This may in part be a reflection of the fact that the progress of the disease is slow and that it may develop into its life threatening stage over a period as great as twenty years (Boyes, 1987).

The frequency of screening recommended by the Task Force was annual for women under the age of 35 , and for those over 35 , every five years unless there are reasons to believe that the woman is in a higher risk group.

The C.H.S. asked women, 'When did you last have a Pap smear test:

- less than 12 months ago?
- between one and two years ago?
- more than two years ago?
- never?
- don't know?'

The same question was asked about a breast examination by a doctor or a nurse.

Subjects were also asked, 'How often do you examine your own breasts for tumours or cysts:

- at least monthly?
- once every two to three months?
- less often?
- never?
- don't know how to do it?'

Table 4.17 shows the responses of the subjects included in this study, as they were categorized in the C.H.S. results.

TABLE 4.17 PERCENTAGE DISTRIBUTION OF FREQUENCY OF
PREVENTIVE BEHAVIOURS OF WOMEN IN THE STUDY GROUP

| FREQUENCY | $\begin{aligned} & \text { PAP SMEAR } \\ & (\mathrm{n}: 3760) \end{aligned}$ | $\begin{aligned} & \text { PROF. BREAST } \\ & \text { EXAM }(\mathrm{n}: 3760) \end{aligned}$ |
| :---: | :---: | :---: |
| Less than two years ago | 71.5 | 66.7 |
| More than two years | 12.4 | 13.4 |
| Never | 5.1 | 10.7 |
| Not sure | 2.9 | 1.2 |
| Missing | 8.1 | 8.0 |
| TOTAL | 100.0 | 100.0 |
|  |  | $\begin{aligned} & \text { BREAST SELF } \\ & \text { EXAM } \end{aligned}$ |
| More frequently than every | ree months | 47.2 |
| Less often |  | 19.8 |
| Never |  | 19.1 |
| Don't know how |  | 5.5 |
| Missing |  | 8.4 |
| TOTAL |  | 100.0 |

For developing a single indicator of women's preventive behaviours for this study, Professional Breast Examination and Pap Smear within two years were scored '1', less recently than the past two years ' 2 ' and never or not sure responses ' 3 '. For Breast Self Examination, those reporting the examination at least every three months were scored ' 1 ', those practicing less frequently ' 2 ' and those who never practiced self examination or didn't know how '3'. This provided a possible score range of $3-9$ and the distribution of the scores is shown in Table 4.18.

TABLE 4.18 PERCENTAGE DISTRIBUTION OF COMPOSITE PREVENTIVE BEHAVIOURS SCORES FOR WOMEN IN THE STUDY GROUP

| COMPOSITE SCORE | WOMEN <br> $(\mathrm{n}: 3760)$ |
| :---: | :---: |
| 3 | 35.7 |
| 4 | 17.5 |
| 5 | 20.3 |
| 6 | 5.8 |
| 7 | 6.8 |
| 8 | 2.1 |
| 9 | 2.8 |
| Missing | 8.9 |
|  |  |
|  | TOTAL |

## MOTOR VEHICLE TRAVEL

Motor vehicle accidents account for $4 \%$ of all deaths (Statistics Canada, 1986). Among young adults they are the leading cause of death. While mechanical failure may account for a small fraction of these deaths, by far the most significant factor is driver behaviour. Milsum quotes mileage driven as having a risk factor between 0.2 and 3.0 (1984).

The advent of the two car family and the chauffeuring mother taking children to their extracurricular activities plus women driving to and from their work place could contribute to women being on the road more and
therefore being at greater risk of being involved in a motor vehicle accident. It is recognized however, that simply being on the road represents probably the smallest component of the overall risk from motor vehicle travel and that factors such as driving experience, speed, risk taking and the associated use of alcohol all contribute more to the level of risk.

The C.H.S. asked subjects 'During the last two weeks, about how many miles/kilometers have you travelled as a passenger:

- in automobiles?
. in trucks or vans?
- on motorcycles? or
. was not a passenger in the past two weeks.'

The same questions were asked regarding travel as a driver. From the travelling distances reported for the two week period the C.H.S. developed estimates of distances travelled annually. ${ }^{3}$

For the purposes of this study, the mileages as a driver and passenger were combined and the subjects' travelling distances used to place them in one of three categories. The boundaries for the categories were derived by dividing the female subjects into approximately three equal groups as shown in Table 4.19.

[^7]TABLE 4.19 PERCENTAGE DISTRIBUTION OF ANNUAL AUTOMOBILE TRAVELLING DISTANCES OF THE STUDY GROUP

| DISTANCE TRAVELLED BY <br> AUTOMOBILE | WOMEN <br> $(\mathrm{n}: 3760)$ | MEN <br> $(\mathrm{n}: 3562)$ |
| :--- | :---: | :---: |
| less than $4,000 \mathrm{~km}$ | 23.5 | 6.3 |
| $4,001 \mathrm{~km}$ to $11,000 \mathrm{~km}$ | 22.1 | 9.0 |
| more than $11,001 \mathrm{~km}$ | 22.5 | 21.0 |
| missing | 31.9 | 63.7 |
|  |  | 100.0 |
| TOTAL | 100.0 |  |

## SEAT BELT USE

At the time that the C.H.S. data were collected, seat belts were mandatory for $76 \%$ of the Canadian population: for residents of Quebec, Ontario, Saskatchewan and British Columbia (Stephen, 1985).

There does not appear to be any doubt that regular wearing of a lap and sash seat belt while travelling in a motor vehicle reduces the risk of death or serious injury. Numerous studies have been able to demonstrate not only the benefits of wearing a seat belt but also the effectiveness of seat belt legislation. The C.H.S. results for all subjects showed a compliance rate of about $60 \%$ in provinces where seat belt wearing was mandatory and only about $16 \%$ in regions where it was voluntary. Figures from Britain show changes from $30 \%$ to $80-100 \%$ in the rate of compliance following legislation (Allen, Barne \& Bodiwala, 1985; Dreghorne, 1985).

The C.H.S. asked subjects whether they fastened their seat belts as (a) a passenger and (b) as a driver:

- always?
- most of the time?
- rarely?
- never?

For the purposes of this study a composite score on seat belt use was developed so that subjects were classified as:

- always wearing seat belt as passenger or driver,
- sometimes wearing seat belt as a passenger, or
- rarely or never wearing seat belt as passenger or driver.

Table 4.20 shows the distribution of scores across the study group.
TABLE 4.20 PERCENTAGE DISTRIBUTION OF STUDY GROUP BY SEAT BELT USE AND SEX

| FREQUENCY OF WEARING SEAT BELT | WOMEN <br> $(\mathrm{n}: 3760)$ | MEN <br> $(\mathrm{n}: 3562)$ |
| :--- | :---: | :---: |
| always | 24.7 | 19.9 |
| sometimes | 2.7 | 2.8 |
| never | 20.3 | 13.4 |
| missing | 52.3 | 69.6 |
|  |  | 100.0 |

## COMPOSITE HEALTH RISK SCORE

To reduce the number of predictor variables being used to address the second study question, namely, 'To what extent can demographic characteristics and health risk behaviours explain variations in reported health status?', a composite health risk score was developed from seven of the health risk factors just discussed. The eighth factor 'Seat Belt Use' was omitted because in so many cases it was a behaviour affected more by the law (an external agent) than by the individual's internalized drive to minimize their risk exposure. Female scores for screening behaviours were also not included because they represent a behaviour that could affect the severity of the outcome of disease but not the initial development of the disease itself.

For women, the seven factors as shown in Table 4.21 have each been scored 'l' through '3', ' 1 ' representing the lowest risk exposure and ' 3 ' the highest. In keeping with the method used by Belloc and Breslow (1972), no
weighting for these factors was used. The scores were simply summed, providing a possible range of scores from '7' to ' 21 '. Men's scores were treated similarly but their possible range of scores was '6' to ' 18 ' because the use of hormone pills was not applicable.

It is acknowledged that the assignment of 'high' risk scores of three to some factors represents a more categorical statement of risk than the literature quoted earlier might support. For example, alcohol consumption and hormone pills are two variables which might have been classified differently given a greater level of detail.

TABLE 4.21 CREATING COMPOSITE HEALTH RISK SCORES

| VARIABLE | SCORED '1' | SCORED '2' | SCORED '3' |
| :--- | :--- | :--- | :--- |
| Smoking | Never Smoked | Past Smoker, <br> Regular or <br> Occasional | Current Smoker <br> Regular or <br> Occasional |
| Alcohol | None in Previous <br> Week | l-7 Drinks in <br> Previous Week | More than 7 drinks <br> in the Previous Week |
| Active, 3000+ on <br> Activity Index <br> Activity | Moderate, <br> $1750-2999$ on <br> Activity Index | Sedentary, 0-1749 on <br> Activity Index |  |
| Life Change <br> Events | None or one event | Two or three <br> Events | Four or More <br> Events |
| Companionship for <br> Leisure Activity | Mostly with <br> Company | Half and Half | Mostly Alone |
| Hormone <br> Pills | Not Taken | Taken |  |
| Annual <br> Motor Vehicle <br> Travel | Less than 4000 km. | 4001 to ll,000 km. | More than $11,000 \mathrm{~km}$. |

Based on this scoring system, the resulting distribution of scores is shown in Table 4.22. The large number of missing scores arises from the fact that any subject for whom there was not a score on each of the seven (six for men) items was deemed missing. Missing scores on automobile travel (as passenger or driver) account for over half the missing composite risk scores.

TABLE 4.22 PERCENTAGE DISTRIBUTION OF STUDY GROUP BY COMPOSITE RISK SCORE AND SEX

| WOMEN |  | MEN <br> $(n: 3760)$ |  |
| :---: | :---: | ---: | :---: |
| Score 7 | 0.2 | Score | 6 |
| 8 | 0.8 | 0.0 |  |
| 9 | 1.9 | 7 | 0.1 |
| 10 | 4.5 | 8 | 0.5 |
| 11 | 7.2 | 9 | 1.9 |
| 12 | 8.4 | 10 | 4.5 |
| 13 | 6.6 | 11 | 4.7 |
| 14 | 5.4 | 12 | 6.1 |
| 15 | 2.7 | 13 | 4.5 |
| 16 | 1.9 | 14 | 2.3 |
| 17 | 0.6 | 15 | 0.9 |
| 18 | 0.2 | 16 | 0.4 |
| 19 | 0.0 | 17 | 0.1 |
| 20 | 0.0 | 18 | 0.0 |
| 21 | 0.0 |  |  |
| Missing | 59.6 |  |  |
| TOTAL |  |  |  |
| 100.0 | Missing | 74.0 |  |

### 4.4 HEALTH STATUS INDICATORS

CHRONIC HEALTH PROBLEMS
The Interviewer Administered Questionnaire asked subjects the questions outlined in Table 4.23.

TABLE 4.23 C.H.S. QUESTION USED TO IDENTIFY HEALTH PROBLEMS

```
'Do you or anyone in your family presently have:
Anaemia?
Skin allergies?
Hayfever or other allergies?
Asthma?
Arthritis or rheumatism?
Cancer?
Cerebral palsy?
Diabetes?
Emphysema or chronic bronchitis?
Mental retardation?
Any emotional disorder (excluding mental retardation)?
Epilepsy?
High blood pressure?
Heart disease?
Stomach ulcer?
Thyroid trouble or goitre?
Recurring migraine headaches?
Missing arms or legs?
Missing fingers or toes?
Paralysis of any kind?
Excluding any health problem mentioned earlier such as
arthritis or paralysis, does anyone in the family have:
Serious trouble with their back or spine?
Serious trouble with their legs or hips?
Serious trouble with their arms or shoulders?
Serious trouble with any other bones or joints?'
```

The interviewer then recorded which person in the family had the problem. They also asked whether anyone in the family had any other long term illness or impairment.

Of all subjects included in the C.H.S., approximately $50 \%$ reported some chronic condition. For the group included in this study, the distribution of
chronic problems is shown in Table 4.24.

Subjects were also asked whether they were limited from their normal daily activities by any health problem. For the present study, subjects that indicated that they did have activity limitations (7.8\%) were excluded because it was felt that such subjects may self-select out of the workforce and could be expected to have different lifestyle behaviours (for example, reduced physical activity). Table 4.25 shows the distribution of subjects excluded on the grounds of activity limitations.

TABLE 4.24 PERCENTAGE DISTRIBUTION OF STUDY GROUP BY NUMBER OF CHRONIC HEALTH PROBLEMS AND SEX

| NUMBER OF CHRONIC PROBLEMS | WOMEN <br> $(\mathrm{n}: 3760)$ | MEN <br> $(\mathrm{n}: 3526)$ |
| :--- | :---: | :---: |
| None | 41.8 | 54.6 |
| One | 30.6 | 29.7 |
| Two | 16.1 | 10.5 |
| Three | 7.3 | 3.3 |
| Four | 2.7 | 1.3 |
| More than four | 1.5 | 0.6 |
|  |  | 100.0 |

TABLE 4.25 SUBJECTS EXCLUDED DUE TO ACTIVITY LIMITATIONS

| SUBJECTS REPORTING ACTIVITY LIMITATIONS |  |  |  |
| :--- | ---: | :---: | :---: |
| DUE TO HEALTH PROBLEMS |  |  |  |
| Women Homemakers | $10.5 \%$ |  |  |
| Women in the paid labour force | $7.2 \%$ |  |  |
| Men in the paid labour force | $6.4 \%$ |  |  |
| These subjects were excluded from the study. |  |  |  |
|  |  |  |  |

## HEALTH OPINION SCORE

A psychological screening test developed by Allister MacMillan was used to measure the reported frequency of psycho-physiological symptoms of anxiety and depression. The test is made up of 16 questions (see Table 4.26) which generate a possible range of scores of 16 (experiencing all of the symptoms
frequently) to 48 (never experiencing any of the symptoms).

TABLE 4.26 DEVELOPING A HEALTH OPINION SCORE
HEALTH OPINION SCORE
The following sixteen questions were scored ' 1 ' for 'Often', '2' for 'Sometimes' and '3' for 'Never' providing a possible score of 16 - 48 .

1. Have you ever been bothered by your heart beating?
2. How often are you bothered by an upset stomach?
3. Do your hands ever tremble enough to bother you?
4. Are you ever troubled by your hands or feet sweating so that they feel damp and clamm?
5. Have you ever been bothered by shortness of breath while not exerting yourself?
6. Do you ever have spells of dizziness?
7. Do you feel weak all over much of the time?
8. Do you feel healthy enough to carry out the things you would like to?*
9. Do you feel you are bothered by all sorts (different kinds) of ailments in different parts of your body?
10. Do you ever have loss of appetite?
11. Do you have any trouble in getting asleep and staying asleep?
12. Has ill health affected the amount of work you do?
13. Have you ever felt that you were going to have a nervous breakdown?
14. Are you ever bothered by nightmares?
15. Do you tend to lose weight when important things are bothering you?
16. Do you tend to feel tired in the mornings?

* Question 8 is scored in reverse.

Tousignant et al. (Tousignant, Denis \& Lachapelle, 1974) question the capacity of this instrument to serve as a population screen for mental disorders - the original purpose of the test. However they do suggest that the test may be well suited for showing variations in the subject's physical health. For the purposes of this study, comparisons can still usefully be drawn between groups assuming that the biases suggested by Tousignant, namely physical health and pressure to provide socially desirable answers, equally
affect all groups. (This is probably a safer assumption when comparing the two women's groups than when comparing men's and women's groups.)

These Health Opinion questions were administered via the self-administered component of the C.H.S.. In compiling the Health Opinion Scores for the C.H.S. data, if 13 of the 16 component scores were known, the unknown scores were imputed from the average of the known scores. If more than three items were missing, the Health Opinion Score was deemed missing. Further, this section of the health survey was added after the survey began thereby increasing the number of subjects without scores.

Table 4.27 shows the distribution of scores. For the purposes of making comparisons between the groups, the scores were grouped (i) $22-40$, (ii) 41 - 44 and (iii) 45 - 48. The group boundaries were based on the distribution of the scores (see Table 4.27).

TABLE 4.27 PERCENTAGE DISTRIBUTION OF STUDY GROUP BY HEALTH OPINION SCORE AND SEX

| HEALTH OPINION SCORES | WOMEN <br> $(\mathrm{n}: 3760)$ | MEN <br> $(\mathrm{n}: 3562)$ |
| :--- | :---: | :---: |
| $22-40$ | 22.5 | 11.7 |
| $41-44$ | 27.0 | 23.4 |
| $45-48$ | 15.9 | 23.6 |
| Missing | 34.6 | 41.3 |
|  |  |  |
|  | TOTAL | 100.0 |

The C.H.S. used Bradburn's measure of psychological well-being (1969) to ask subjects directly about subjective states - both pleasant and unpleasant, in the recent past. Table 4.28 details the questions asked via the self-administered segment of the survey. This measure is based on the concept that psychological well-being is the result of two almost completely unrelated dimensions of affect which have been labelled positive and negative. To reflect the theory that well-being is the resultant of positive and negative feelings (which may vary independently of one another) an overall Affect Balance Score is normally expressed as the difference between the positive and negative affect scores. The resultant scores can then be expressed as positive, negative or neutral (or balanced).

TABLE 4.28 DEVELOPING AFFECT BALANCE SCORES

```
Five of the questions listed below were used to develop a Positive Affect Score and the other five were used to develop a Negative Affect Score.
Subjects were told, 'Here is a list that describes some of the ways people feel at different times. During the past few weeks how often have you felt...
1. On top of the world?
2. Very lonely or remote from other people?
3. Particularly excited or interested in something?
4. Depressed or very unhappy?
5. Pleased about accomplishing something?
6. Bored?
7. Proud because someone complimented you on something you had done?
8. So restless you couldn't sit long in a chair?
9. That things were going your way?
10. Upset because someone criticized you?'
Subjects were asked to choose between 'Often',
'Sometimes' or 'Never'.
```

For the C.H.S. data, scores were reported if four out of each set of five items had been answered, the one unknown score being imputed as an average of the known. If more than one item was unanswered, the Affect Balance Score was shown as missing.

Table 4.29 shows the Affect Balance Scores for the subjects included in this study.

TABLE 4.29 PERCENTAGE DISTRIBUTION OF THE STUDY GROUP BY AFFECT BALANCE SCORE AND SEX

| AFFECT BALANCE | WOMEN <br> $(\mathrm{n}: 3760)$ | MEN <br> $(\mathrm{n}: 3562)$ |  |
| :--- | :--- | :---: | :---: |
| Positive Balance | 44.7 | 42.2 |  |
| Neutral | .39 .6 | 35.2 |  |
| Negative Balance | 3.7 | 2.0 |  |
| Missing | 12.0 | 20.6 |  |
|  |  | 100.0 | 100.0 |

### 4.5 HRALTH CARE CONSEQUENCES

## DISABILITY DAYS

In the interviewer administered segment of the C.H.S., a representative of the household was asked about members of the household experiencing reduced activity days during the previous two weeks. Table 4.30 shows the questions from which a summary score was developed. This summary score equalled the number of days on which a person experienced any reduction in activity as a result of their health.

TABLE 4.30 C.H.S. QUESTION TO IDENTIFY DISABILITY DAYS
REDUCED ACTIVITY DUE TO POOR HEALTH
1.
(a) During the past two weeks did you* stay in bed because of your health?
(b) How many days did you stay in bed for all or most of the day? (Includes nights spent in hospital as a patient.)
2.
(a) During the past two weeks did your health keep you from work/housework for all or most of the day?
(b) How many days did illness keep you from work/housework for all or most of the day?
(c) On how many of those days lost from work/housework did you stay in bed?
3.
(a) Not counting any days mentioned earlier, were there any days during those two weeks that you cut down on things that you usually do, because of your health?

* 'You' has been used for simplicity in reporting the question. Any responsible adult was deemed able to answer on behalf of other members of the household.

Table 4.31 shows the distribution of reduced activity days amongst this study group.

TABLE 4.31 PERCENTAGE DISTRIBUTION OF STUDY GROUP BY REDUCED ACTIVITY DAYS AND SEX

| NUMBER OF DISABILITY DAYS IN <br> THE PREVIOUS TWO WEEKS | WOMEN <br> $(\mathrm{n}: 3760)$ | MEN <br> $(\mathrm{n}: 3562)$ |
| :--- | :---: | :---: |
| None | 88.5 | 92.8 |
| One | 3.4 | 2.7 |
| Two | 3.1 | 1.9 |
| More than two | 5.0 | 2.6 |
|  |  | 100.0 |

HEALTH PROFESSIONAL CONSULTATIONS
Through the interviewer administered section of the survey, subjects or their proxy were asked about contact with health professionals during the previous year.

Table 4.32 shows the questions as they were asked and Table 4.33 sumarizes the number of health professional visits reported by this study group.

TABLE 4.32 C.H.S. QUESTION TO IDENTIFY HEALTH PROFESSIONAL CONSULTATIONS

```
'During the past two weeks did anyone in the family
see or talk to any of the following health professionals
about their health?
    1. a medical doctor?
    2. a dentist?
    3. a nurse?
    4. a pharmacist or druggist for advice?
                            (exclude prescriptions)
5. an optometrist or optician?
6. a chiropractor?
7. a psychologist, social worker or other
        counsellor?
    8. any other health professional?'
```

TABLE 4.33 PERCENTAGE DISTRIBUTION OF STUDY GROUP BY NUMBER OF HEALTH PROFESSIONAL CONSULTATIONS AND SEX

| NUMBER OF HEALTH CONSULTATIONS | WOMEN <br> IN THE PREVIOUS YEAR | MEN <br> $(\mathrm{n}: 3760)$ |
| :--- | :---: | :---: |
| $\mathrm{n}: 3562)$ |  |  |
| None | 7.6 | 15.3 |
| One or two | 27.5 | 37.7 |
| Three to five | 28.2 | 26.4 |
| Six to ten | 20.6 | 13.9 |
| Eleven to twenty | 11.5 | 4.2 |
| More than twenty | 3.2 | 1.0 |
| Missing | 1.4 | 1.5 |
|  |  | 100.0 |

Subjects were also asked which health professional they had seen most recently, where the contact had taken place (for example in a clinic, a hospital or an office) and what health problem led to that consultation. This additional detail was not used in this study.

## MEDICATIONS

Information on medications was gathered via the interviewer administered part of the survey so that any responsible adult in the family was considered able to answer on behalf of the other family members. Table 4.34 shows the questions that were asked.

TABLE 4.34 C.H.S. QUESTION TO IDENTIFY MEDICATIONS TAREN

```
'These questions refer to the use of medicines, pills or ointments in the last two days. Yesterday or the day before, did you or any one in the family take or use any of the following:
1. Pain relievers such as aspirin?
2. Tranquilizers, medicines for the nerves or medicines to help you sleep?
3. Medicines for heart or blood pressure?
4. Antibiotics?
5. Stomach remedies or medicines?
6. Laxatives?
7. Cough or cold remedies?
8. Skin ointments or salves?
9. Vitamins or minerals?
10. Any other medication?'
```

Subjects were also asked whether the medication was taken on the advice of a medical doctor and whether the medicine was taken at least once a week over the previous month. These additional pieces of information were not used in this study.

Table 4.35 shows the variety of medications consumed over a two-day period by the subjects included in this study.

TABLE 4.35 PERCENTAGE DISTRIBUTION OF STUDY GROUP BY VARIETY OF MEDICATIONS CONSUMED AND SEX

| NUMBER OF DIFFERENT <br> MEDICATIONS CONSUMED OVER A <br> TWO-DAY PERIOD | WOMEN <br> $(\mathrm{n}: 3760)$ | MEN <br> $(\mathrm{n}: 3562)$ |
| :--- | :---: | :---: |
| None | 48.8 | 67.3 |
| One | 32.6 | 24.4 |
| Two | 12.6 | 6.4 |
| Three | 4.9 | 1.6 |
| Four or more | 1.1 | 0.3 |
|  | 100.0 | 100.0 |

## HOSPITALIZATION

The interviewer asked whether, in the previous 12 months, anyone in the family had been a patient in a hospital, a nursing home or a convalescent home. If so they were asked how many times and for how many nights the person had been a patient. There is no indication in the survey how day hospital visits may have been treated.

Table 4.36 shows the percentage distribution of subjects who had been in hospital and the number of nights they had been a patient in the previous 12 months.

TABLE 4.36 PERCENTAGE DISTRIBUTION OF STUDY GROUP BY HOSPITALIZATION AND SEX

| NUMBER OF NIGHTS IN HOSPITAL | WOMEN | MEN |
| :--- | :---: | :---: |
| IN THE PREVIOUS 12 MONTHS | $(\mathrm{n}: 3760)$ | $(\mathrm{n}: 3562)$ |
| None | 84.8 | 95.0 |
| One to five | 8.1 | 3.1 |
| More than five | 7.1 | 1.9 |
|  |  |  |
|  |  | 100.0 |

All this information on health risk exposure, self reported health status and use of health care services, for men and women aged $25-44$ years who were not experiencing any activity limitations due to health and were in the paid labour force or keeping house, was then analysed, as outlined in Chapter Five.

## DATA ANALYSIS

### 5.1 THE DATA

The Canadian Health Survey data collected between July 1978 and March 1979 was committed to tape and placed in the public domain in 1982. A copy of that tape and the code book (Statistics Canada, 1982) is available through the University of British Columbia Data Library at the Computing Centre.

Using the Statistical Package for the Social Sciences (SPSS-X), on the U.B.C. Amdahl computer, the data items listed in Appendix A, and described in Chapter Four, were extracted for all men and women aged between 25 and 44. Subjects reporting any activity limitations were excluded as were those who indicated that they were neither going out to work nor keeping house. (That is, they were 'at school', 'retired', or 'other').

The remaining subjects were grouped according to their reported major activity for the previous year:
women who were keeping house, women who were in the labour force, men who were in the labour force.

Using SPSS-X some variables were recoded (see Appendix A for details):

- to reduce the number of categories within a variable, or
. to make scoring of one variable consistent with that of another so that the two could be combined to create one summary variable. For example, information about the wearing of a seat belt as a passenger or a driver was combined to reflect the subject's overall use of seat belts. Similarly new summary variables were created for driving distance, for women's preventive health behaviours that depended on a visit to a health professional and for each subject's lifestyle-related health risk. The
rationale for, and greater detail on each of these variables is provided in Chapter Four.

In order to address the four questions posed in this study, namely:

1. Do women in the paid labour force exhibit lifestyle patterns significantly different from their counterparts who are homemakers?
2. Do women in the paid labour force report poorer health status than their counterparts who are homemakers?
3. Do women in the paid labour force exhibit health care utilization patterns significantly different from their homemaker counterparts? and
4. Do women's lifestyles, reported health status and health care utilization patterns differ from those of their male counterparts in the paid labour force?

It was recognized that some standardization of the rates for the various behaviours would need to be made if the comparisons were to be at all meaningful. Multiple Classification Analysis (University of Michigan 1981) was chosen as a suitable instrument for determining the variables that were best able to explain variations in scores, these then being the same variables that could be used to reduce population variability across all three groups.

### 5.2 MULTIPLE CLASSIFICATION ANALYSIS

Multiple Classification Analysis (MCA) examines the relationship between several categorical predictor variables and a single dependent variable and determines the effect of each predictor before and after adjustment for its intercorrelation with other predictor variables in the analysis. MCA is similar to regression analysis but has the advantage of being able to use predictor variables in nominal, ordinal or interval scales. MCA assumes that the effects of the predictors are additive and that there is no interaction.

MCA assumes a model of the form:

$$
y_{i j k}=Y_{\ldots}+a_{i} \ldots+g_{j}+e_{i j k}
$$

in which 'Yijk' is the $k^{\text {th }}$ value of the dependent variable ' $Y$ ' and ' $a_{i}$ ' and ' $g_{j}$ ' are respectively the $i^{\text {th }}$ and $j^{\text {th }}$ categories of predictor variables ' $a$ ' and ' $g$ '; eijk is the within group or sampling error. Through an iterative process, the grand unadjusted mean of the dependent variable ' $Y$ ' is adjusted to reflect the effect of successive values of the predictor variables 'a' through ' $g$ '. In this study for example, smoking could be the dependent variable, ' $Y$ ' and the predictor variables ('a' through ' $g$ ') would be the seven demographic variables. The MCA produces an unadjusted mean score for smoking for each category of each predictor variable (for example each of four levels of education) as well as an adjusted mean score for each of those same categories when the effect of the other predictor variables is held constant.

For each dependent variable ( $Y$ ) the following statistics were generated:

```
    grand mean
    standard deviation
    sum of Y
    sum of Y squared
    explained sum of squares
    residual sum of squares
    the number of cases used in the analysis.
```

and for each category of each predictor variable:
the number of cases with valid data
the mean of the dependent variables for the category
deviation of the category mean from the grand mean
(unadjusted)
deviation of the category mean from the grand mean
adjusted for the effect of the other predictors
adjusted class mean
standard deviation of the dependent variable for the
category

The unadjusted category deviations can be used to assess the relationship of the predictor variable with the dependent variable (be it positive, negative, curilinear or any other form). The adjusted deviation or co-efficients show this relationship after the effects of the other predictors have been partialled out.

The following Analysis Summary Statistics were also generated:
The proportion of variance explained by the model (the unadjusted R-square)
a co-efficient indicating the amount of adjustment for degree of freedom used in fitting the model
the adjusted proportion of variance explained by the model (the multiple R-square, adjusted)
the adjusted multiple correlation co-efficient (the multiple $R$, adjusted)
the eta squared which represents the proportion of variance in the dependent variable explained by the unadjusted deviations of the predictor and
the beta squared co-efficients which indicate the relative importance of the various predictors

The two women's groups were combined and MCA was run based on the predictor and dependent variables outlined in the model. The predictors best able to explain variation in the dependent variable scores were then ised to standardize the rates of the dependent variables.

### 5.3 STANDARDIZATION OF RATES

When comparing crude rates among several populations for an event or population characteristic, the difference between the two rates is made up of:
. the difference within the two populations and
. the difference between the frequency of the event or characteristic being compared. (Fleiss, 1981)

Since it is the latter that is of major interest, the degree to which the differences between the populations can be eliminated will determine the
accuracy with which a comparison of rates reflects a true difference in frequency of the event or behaviour of interest.

It could be expected that there would be significant population differences between the women homemaker group and the workforce women group. For example, unmarried women are most likely to be in the workforce with very few of them being homemakers whereas married women with large families may well be very under represented in the workforce group. For some dependent variables, these characteristics may be strongly associated with that variable's absence or presence.

Using the results of the MCA, the two predictor variables shown to be most able to explain variation in each dependent variable were used to standardize the populations and therefore reduce the amount of variability that could be attributed to population differences. It had originally been planned that the rates for workforce men and women would be standardized against the total female group rate. However, within the total female group there were strata that were made up almost exclusively of workforce women, so it was decided that the homemaker group should be used as the standard population. The rates for the workforce men and women groups have therefore been standardized against the women homemaker group.

As pointed out by Fleiss, although comparing single standardized rates provides a convenient single measure of comparison it will not indicate the differences that exist across the various strata within the population. The standardized tables for each variable have therefore been included in the results section so that readers may examine for themselves the variations across strata.

### 5.4 TESTING FOR SIGNIFICANCE BETWEEN RATES

On the premise that a comparison of the rates constituted a comparison of population means, a standard t-test was used to test for significance between the rates. The weighted difference in proportions of individuals classified as 'positive' between corresponding cells of the two populations was used as the numerator for the t-test and a pooled variance for the denominator. The frequencies for the $i^{\text {th }}$ cell of populations $A$ and $B$ as outlined below are used to illustrate the formulae. (Armitage, 1971)


The difference between the proportions (d) was calculated:

$$
d=\sum n_{i}\left(p_{A i}-p_{B i}\right) / \sum_{n}
$$

and the pooled variance ( $\overline{\mathrm{d}}$ )

$$
\overline{\mathrm{d}}=\mathrm{p}_{\mathrm{Oi}} \mathrm{q}_{\mathrm{Oi}}\left(\mathrm{n}_{\mathrm{Ai}}+\mathrm{n}_{\mathrm{Bi}}\right) / \mathrm{n}_{\mathrm{Ai}} \mathrm{n}_{\mathrm{Bi}}
$$

so that

$$
t_{n-2}=\frac{d}{d}
$$

Tests of significance were done on all the dependent variables. Tables 6.78-80 summarize the rates and the significance level of their differences.

## RESULTS

The extraction of the data points shown in Appendix I for men and women aged 25 to 44 years produced a sample of 7,939 subjects. Based on an assumption that subjects with activity limitations would not have the same lifestyle options as functionally unimpaired subjects, 617 of this group were then omitted from this study because they indicated that they experienced some level of activity limitation due to health problems. Table 6.1 shows the distribution of these subjects across the three groups. The $7.8 \%$ overall incidence of activity limitations for this subject group was much lower than for the 45 to 64 year olds in the C.H.S. (17\%). The higher incidence of health related activity limitations among women at home should not be surprising and could be used to support the argument that women in the paid labour force are to some extent, self-selecting.

TABLE 6.1 SAMPLE SIZES AFTER ADJUSTMENT FOR THOSE REPORTING ACTIVITY LIMITATIONS

| GROUPS |  |  |  |
| :--- | :--- | :--- | :--- |
| AGED $25-44$ YEARS | NO. IN <br> C.H.S. | NO. (\%) WITH <br> ACTIVITY <br> LIMITATIONS | NO. IN <br> THIS STUDY |
| Homemaker Women | 2302 | $241(10.5 \%)$ | 2061 |
| Workforce Women | 1830 | $131(7.2 \%)$ | 1699 |
| Workforce Men | 3807 | $245(6.4 \%)$ | 3562 |
| TOTAL | 7939 | $617(7.8 \%)$ | 7322 |

The rest of this chapter reports on each of the variables outlining the Multiple Classification findings and discussing the standardized rates in terms of the findings of other studies.

Tables 6.76-80 at the end of the chapter, provide a summary of all the
multiple classification analyses plus an overview of the comparison of rates for health risk behaviours, for reported health status and for health consequences across all three groups. Also at the end of this chapter, the overall impact of the various predictor variables are tabulated (Tables 6.81-87).

### 6.1 HEALTH RISK BEHAVIOURS

## SMORING

The multiple classification analysis using the women's smoking scores as the dependent variables and the predictor variables as outlined in the model (Fig. 4.3), could explain only $3.9 \%$ of the variation in scores. Of those in the model, the three strongest predictors were education, marital status and region of residence. Given that smoking was scored one to three, (three indicating current smoking either regular or occasional and one indicating a non-smoker), one can seen from Table 6.2 that higher education and marriage are associated with lower group mean scores. For the regions, the smoking rate simply varies from province to province, Quebec being the highest and Ontario the lowest. The beta score provided with each predictor variable indicates its relative strength as a predictor.

TABLE 6.2 PREDICTORS OF SMOKING BY WOMEN SUBJECTS

| EDUCATION <br> (beta:0.16) | GROUP MEAN | MARITAL STATUS (beta:0.11) | GROUP MEAN | REGION <br> (beta:0.07) | GROUP MEAN |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Secondary | 2.19 | Not married | 2.28 | Quebec | 2.16 |
| Post. Sec. | 2.01 | Married | 2.06 | Atlantic | 2.13 |
| Diploma | 1.96 |  |  | Prairies | 2.12 |
| Degree | 1.79 |  |  | B.C. | 2.11 |
|  |  |  |  | Ontario | 1.99 |

From among all the subsets created by the M.C.A., women with a degree participating in the paid labour force (group mean 1.73) and women in the paid labour force living in large families (group mean 1.88 ) reported the lowest number of smokers. Single women (group mean 2.28) and women living alone (group mean 2.20) reported the highest levels of smoking.

Using the top two strongest predictors within this model, that is education and marital status, the smoking rates for the two workforce groups were standardized against the women homemaker group. The workforce men had the highest smoking rate (52.4\%) and workforce women, the lowest (44.8\%). Tables 6.3-5 show the variation across the different strata of the subject groups as well as the summary rates. The differences between the two workforce groups and the homemaker group were not significant at the 0.05 level, ( $t$ values of 0.745 and 1.71 for workforce women and men respectively).

The smoking rates reported here are high compared with those generally reported. The Report on the C.H.S. (Health and Welfare Canada/Statistics Canada, 1982) (see Table 6.6) shows the smoking rates for all women aged 25 44 as $38.9 \%$ (and $36 \%$ for the 1977 and 1979 'Smoking Habits of Canadians' surveys). Table 6.7 shows the unweighted smoking rates for the sample used in this study and the rates for the same sample when the weights provided with the C.H.S. (to match the sample population with the general population on the basis of age and sex) are applied. This information shows that smokers must have been slightly over represented in this sample. When this, plus the fact that occasional as well as regular smokers have been included under the heading of 'smokers' in this study, the rates do not appear too disparate with other findings.

TABLE 6.6 PERCENTAGE OF DAILY CIGARETTE SMOKERS AMONG 25-44 YEAR OLDS, REPORTED BY THE 'SMOKING HABITS OF CANADA' SURVEYS AND THE C.H.S.

|  | SMOKING HABITS OF |  | CANADA HEALTH |
| :--- | :---: | :---: | :---: |
|  | 1977 | 1979 | SURVEY |
|  | 36.6 | 36.0 | $1978-79$ |
| Women 25-44 years | 47.0 | 44.0 | 38.9 |
| Men 25-44 years | 46.7 |  |  |

Source: The Health of Canadians.
TABLE 6.7 WEIGHTED AND UNWEIGHTED C.H.S. SMOKING RATES FOR WOMEN 25-44 YEARS

|  | UNWEIGHTED RATES | WEIGHTED RATES |  |
| :--- | ---: | ---: | ---: |
|  | Home Gp. W' $^{\prime}$ force Gp. | Home Gp. W' force Gp |  |
| Regular Smokers | 41.2 | 39.2 | 38.7 |
| Occasional Smokers | 3.5 | 4.5 | 36.5 |
| TOTALS | $\overline{44.7}$ | $\overline{43.7}$ | $\overline{42.6}$ |

TABLE 6:3 SMOKING PREVALENCE WOMEN HOMEMAKERS, AGED 25-44 YEARS

Percentage of Women Reporting Current, Regular or Occasional Cigarette Smoking

|  | EDUCATION <br> LEVEL 2 | EDUCATION <br> LEVEL 3 | EDUCATION <br> LEVEL 4 | EDUCATION <br> LEVEL 5 | CRUDE <br> RATE | ADJUSTED <br> RATE |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| NOT |  |  |  |  |  |  |
| MARRIED | 63.7 <br> $(91)$ | 50.0 <br> $(8)$ | 50.0 <br> $(6)$ | 66.7 <br> $(3)$ | 62.0 <br> $(108)$ | 61.2 |
| MARRIED | 48.3 <br> $(1291)$ | 37.5 <br> $(112)$ | 30.5 <br> $(233)$ | 26.6 <br> $(94)$ | 44.1 <br> $(1730)$ | 44.2 |
| CRUDE | 49.3 <br> (1382) | 38.3 <br> $(120)$ | 31.0 <br> $(239)$ | 27.8 <br> $(97)$ | 45.1 <br> $(1838)$ |  |
| RATE | 49.3 | 38.2 | 31.6 | 29.0 |  | 45.2 |

TABLE 6.4 SMOKING PREVALENCE
WOMEN IN THE PAID LABOUR FORCE, AGED 25-44 YEARS
Percentage of Women Reporting Current, Regular or Occasional Cigarette Smoking*

|  | EDUCATION <br> LEVEL 2 | EDUCATION <br> LEVEL 3 | EDUCATION <br> LEVEL 4 | EDUCATION <br> LEVEL 5 | CRUDE <br> RATE | ADJUSTED <br> RATE |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| NOT <br> MARRIED | 63.0 <br> $(184)$ | 50.0 <br> $(58)$ | 44.9 <br> $(78)$ | 26.0 <br> $(77)$ | 50.4 <br> $(397)$ | 57.9 |
| MARRIED | 47.9 <br> $(685)$ | 31.5 <br> $(92)$ | 36.8 <br> $(163)$ | 20.4 <br> $(142)$ | 41.2 <br> $(1082)$ | 43.9 |
| CRUDE <br> RATE | 55.4 <br> $(869)$ | 38.7 <br> $(150)$ | 39.4 <br> $(241)$ | 22.4 <br> $(219)$ | 43.7 <br> $(1479)$ |  |
| ADJUSTED <br> RATE | 48.8 | 32.6 | 37.3 | 20.8 |  | 44.8 |

TABLE 6.5 SMOKING PREVALENCE
MEN IN THE PAID LABOUR FORCE, AGED 25-44 YEARS
Percentage of Men Reporting Current, Regular or Occasional Cigarette Smoking*

|  | EDUCATION <br> LEVEL 2 | EDUCATION <br> LEVEL 3 | EDUCATION <br> LEVEL 4 | EDUCATION <br> LEVEL 5 | CRUDE <br> RATE | ADJUSTED <br> RATE |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| NOT <br> MARRIED | 56.5 <br> $(1555)$ | 46.0 <br> $(198)$ | 40.2 <br> $(271)$ | 29.1 <br> $(402)$ | 49.3 <br> $(2426)$ | 53.6 |
| MARRIED | 56.9 <br> $(253)$ | 42.6 <br> $(54)$ | 47.9 <br> $(48)$ | 34.5 <br> $(87)$ | 49.8 <br> $(442)$ | 52.3 |
| CRUDE <br> RATE | 56.6 <br> $(1808)$ | 45.2 <br> $(252)$ | 41.4 <br> $(319)$ | 30.1 <br> $(489)$ | 49.4 <br> $(2868)$ |  |
| ADJUSTED <br> RATE | 56.7 | 45.8 | 40.7 | 29.4 |  | 52.4 |

Rates standardized against the "Women Homemakers" group.

ALCOHOL
Using the women's alcohol consumption scores as the dependent variable and the predictor variables listed in the model (Figure 4.3), the multiple classification analysis was able to explain only $4.7 \%$ of the variation in the scores. Subjects were allocated a score of three if they reported more than seven alcoholic beverages in the week preceding the survey, a score of two if they had between one and seven drinks and a score of one if they had not consumed any alcohol at all in the preceding week. The top three predictor variables were income, region of residence and marital status.

Table 6.8 shows the sub group mean scores for each category of the top three predictors as well as their beta scores which indicate their relative strengths as predictors.

TABLE 6.8 PREDICTORS OF ALCOHOL CONSUMPTION BY WOMEN SUBJECTS

| INCOME QUINTILE (beta:0.12) | GROUP MEAN | REGION (beta:0.09) | $\begin{aligned} & \text { GROUP } \\ & \text { MEAN } \end{aligned}$ | MARITAL STATUS (beta: 0.08 ) | GROUP MEAN |
| :---: | :---: | :---: | :---: | :---: | :---: |
| First (lowest) | 1.86 | Atlantic | 1.91 | Not |  |
| Second | 2.01 | Quebec | 2.01 | married | 2.19 |
| Third | 1.98 | Ontario | 2.10 |  |  |
| Fourth | 2.10 | Prairies | 2.08 | Married | 2.01 |
| Fifth (highest) | 2.13 | B.C. | 2.11 |  |  |

Across all the subgroups, those reporting the least alcohol consumption were those with the lowest incomes, living in the Atlantic provinces or living in a large family; those reporting the highest consumption were single women and women in the highest income group.

The rates for workforce men and women consuming more than seven drinks a week were standardized on the basis of income and region against the
women homemaker's group. Overall the women reported considerably less alcohol consumption than the men; women abstained more and reported more moderate drinking (see Table 4.9). When the populations were standardized the rate for men having seven or more drinks ( $49.7 \%$ ) was twice that of the homemaker and workforce women's groups ( $19.6 \%$ and $21.0 \%$ respectively, $\mathrm{p}<.002$ ). The rate for men abstaining from alcohol ( $8.5 \%$ ) was half that of the rate for the women's group ( $19.9 \%$ and $16.2 \%, \mathrm{p}<.002$ respectively for the homemaker and workforce women). (See Tables 6.9-14) The tables also show some interesting differences related to income. For example, in B.C. among workforce women, the percentage reporting seven or more drinks decreases with increasing income yet for the rest of the group the relationship to income seems to be the reverse.

Of interest is the fact that more women (44.54\%) than men (35.6\%) did not complete the question on the previous week's alcohol consumption. One can only speculate as to whether a higher percentage of the non-reporters were heavier drinkers and to what extent social acceptance and perceived social values have influenced responses as well as non-responses.

Other studies (Wilsnack, Wilsnack and Klassen, 1981) have found no evidence of heavier drinking among employed wives but found the heaviest drinking among single women aged 21 to 34 , and among women whose spouse or companion was a heavy drinker. The rates for moderate to heavy drinkers (averaging more than 0.22 ounces of alcohol per day) shown in Wilsnack, Wilsnack and Klassen's study would suggest, if anything, that the rates in this study might be low.

TABLE 6.9 ALCOHOL CONSUMPTION WOMEN HOMEMAKERS, AGED 25-44 YEARS

Percentage of Women Reporting more than Seven Drinks in the Previous Week

| REGION | $\begin{aligned} & \text { INCOME } \\ & \text { QUINT. } \end{aligned}$ $1$ | $\begin{gathered} \text { INCOME } \\ \text { QUINT. } \\ 2 \\ \hline \end{gathered}$ | INCOME QUINT. 3 | $\begin{gathered} \text { INCOME } \\ \text { QUINT. } \\ \hline \end{gathered}$ | INCOME QUINT. 5 | $\begin{aligned} & \text { CRUDE } \\ & \text { RATE } \end{aligned}$ | $\begin{aligned} & \text { ADJUSTED } \\ & \text { RATE } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ATLANTIC REGIONS | $\begin{aligned} & 7.9 \\ & (63) \end{aligned}$ | $\begin{aligned} & 9.0 \\ & (67) \end{aligned}$ | $\begin{aligned} & 8.9 \\ & (45) \end{aligned}$ | $\begin{aligned} & 25.0 \\ & (24) \end{aligned}$ | $\begin{aligned} & 23.1 \\ & (13) \end{aligned}$ | $\begin{aligned} & 11.3 \\ & (212) \end{aligned}$ | 13.7 |
| QUEBEC | $\begin{aligned} & 10.4 \\ & (48) \end{aligned}$ | $\begin{aligned} & 6.3 \\ & (64) \end{aligned}$ | $\begin{aligned} & 17.2 \\ & (58) \end{aligned}$ | $\begin{aligned} & 13.8 \\ & (29) \end{aligned}$ | $\begin{aligned} & 22.2 \\ & (18) \end{aligned}$ | $\begin{aligned} & 12.4 \\ & (217) \end{aligned}$ | 13.2 |
| ONTARIO | $\begin{aligned} & 27.5 \\ & (40) \end{aligned}$ | $\begin{aligned} & 25.0 \\ & (48) \end{aligned}$ | $\begin{aligned} & 20.0 \\ & (55) \end{aligned}$ | $\begin{aligned} & 36.5 \\ & (52) \end{aligned}$ | $\begin{aligned} & 26.3 \\ & (19) \end{aligned}$ | $\begin{aligned} & 27.1 \\ & (214) \end{aligned}$ | 26.7 |
| PRAIRIES | $\begin{aligned} & 21.1 \\ & (19) \end{aligned}$ | $\begin{aligned} & 15.3 \\ & (59) \end{aligned}$ | $\begin{aligned} & 19.7 \\ & (61) \end{aligned}$ | $\begin{aligned} & 31.9 \\ & (72) \end{aligned}$ | 17.7 <br> (51) | $\begin{aligned} & 21.8 \\ & (262) \end{aligned}$ | 21.0 |
| B.C. | $\begin{aligned} & 21.4 \\ & (14) \end{aligned}$ | $\begin{aligned} & 32.4 \\ & (34) \end{aligned}$ | $\begin{aligned} & 15.2 \\ & (46) \end{aligned}$ | $\begin{aligned} & 23.7 \\ & (38) \end{aligned}$ | $\begin{aligned} & 29.0 \\ & (3 i) \end{aligned}$ | $\begin{aligned} & 23.9 \\ & (163) \end{aligned}$ | 24.1 |
| CRUDE RATE | $\begin{aligned} & 15.2 \\ & (184) \end{aligned}$ | $\begin{aligned} & 15.4 \\ & (272) \end{aligned}$ | $\begin{aligned} & 16.6 \\ & (265) \end{aligned}$ | $\begin{aligned} & 28.4 \\ & (215) \end{aligned}$ | $\begin{aligned} & 22.7 \\ & (132) \end{aligned}$ | $\begin{aligned} & 19.2 \\ & (1068) \end{aligned}$ | . |
| ADJUSTED RATE | 17.6 | 16.7 | 16.4 | 26.5 | 23.1 |  | 19.6 |

Celanto and McQueen (1984) in a study of Baltimore women found only weak support for the hypothesis that women drink more as they entered the male world and that attitudes and social roles were more important than occupational status.

TABLE 6.10 ALCOHOL CONSUMPTION WOMEN IN THE PAID LABOUR FORCE, AGED 25-44 YEARS

Percentage of Women Reporting more than Seven Drinks in the Previous Week*

| REGION | INCOME QUINT. | INCOME QUINI | INCOME QUINT. 3 | INCOME QUINT. 4 | INCOME QUINT. 5 | $\begin{aligned} & \text { CRUDE } \\ & \text { RATE } \end{aligned}$ | $\begin{aligned} & \text { ADJUSTED } \\ & \text { RATE } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ATLANTIC REGIONS | $\begin{aligned} & 6.3 \\ & (16) \end{aligned}$ | $\begin{aligned} & 23.1 \\ & (13) \end{aligned}$ | $\begin{aligned} & 16.7 \\ & (30) \end{aligned}$ | $\begin{aligned} & 21.6 \\ & (51) \end{aligned}$ | $\begin{aligned} & 22.0 \\ & (59) \end{aligned}$ | $\begin{aligned} & 18.9 \\ & (169) \end{aligned}$ | 18.2 |
| QUEBEC | $\begin{aligned} & 18.2 \\ & (11) \end{aligned}$ | $\begin{aligned} & 8.3 \\ & (12) \end{aligned}$ | $\begin{aligned} & 33.3 \\ & (24) \end{aligned}$ | $\begin{aligned} & 19.2 \\ & (47) \end{aligned}$ | $\begin{aligned} & 23.3 \\ & (103) \end{aligned}$ | $\begin{aligned} & 22.3 \\ & (197) \end{aligned}$ | 20.3 |
| ONTARIO | $\begin{aligned} & 27.3 \\ & (11) \end{aligned}$ | $\begin{aligned} & 16.7 \\ & (12) \end{aligned}$ | $\begin{aligned} & 15.4 \\ & (39) \end{aligned}$ | $\begin{aligned} & 21.0 \\ & (62) \end{aligned}$ | $\begin{aligned} & 27.2 \\ & (103) \end{aligned}$ | $\begin{aligned} & 22.9 \\ & (227) \end{aligned}$ | 20.3 |
| PRAIRIES | $\begin{aligned} & 12.5 \\ & (8) \end{aligned}$ | $\begin{aligned} & 20.0 \\ & (10) \end{aligned}$ | $\begin{aligned} & 15.2 \\ & (33) \end{aligned}$ | $\begin{aligned} & 25.0 \\ & (48) \end{aligned}$ | $\begin{aligned} & 29.0 \\ & (100) \end{aligned}$ | $\begin{aligned} & 24.6 \\ & (199) \end{aligned}$ | 19.6 |
| B.C. | $\begin{aligned} & 0 \\ & (2) \end{aligned}$ | $\begin{aligned} & 42.1 \\ & (19) \end{aligned}$ | $\begin{aligned} & 31.3 \\ & (16) \end{aligned}$ | $\begin{aligned} & 33.3 \\ & (21) \end{aligned}$ | $\begin{aligned} & 28.6 \\ & (84) \end{aligned}$ | $\begin{aligned} & 31.0 \\ & (142) \end{aligned}$ | 28.7 |
| $\begin{aligned} & \text { CRUDE } \\ & \text { RATE } \end{aligned}$ | $\begin{aligned} & 14.6 \\ & (48) \end{aligned}$ | $\begin{aligned} & 24.2 \\ & (66) \end{aligned}$ | $\begin{aligned} & 20.4 \\ & (142) \end{aligned}$ | $\begin{aligned} & 22.7 \\ & (229) \end{aligned}$ | $\begin{aligned} & 26.3 \\ & (449) \end{aligned}$ | $\begin{aligned} & 23.8 \\ & (934) \end{aligned}$ |  |
| ADJUSTED RATE | 13.5 | 21.0 | 21.7 | 23.6 | 26.0 |  | 21.0 |

* Rates standardized against the "Women Homemakers" group

TABLE 6.11 ALCOHOL CONSUMPTION
MEN IN THE PAID LABOUR FORCE, AGED 25-44 YEARS
Percentage of Men Reporting more than Seven Drinks in the Previous Week*

| REGION | INCOME QUINT. 1 | INCOME QUINT. 2 | $\begin{aligned} & \text { INCOME } \\ & \text { QUINT. } \\ & 3 \end{aligned}$ | INCOME QUINT. 4 | INCOME QUINT. 5 | $\begin{aligned} & \text { CRUDE } \\ & \text { RATE } \end{aligned}$ | ADJUSTED RATE |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ATLANTIC REGIONS | $\begin{aligned} & 38.6 \\ & (70) \end{aligned}$ | $\begin{aligned} & 53.3 \\ & (92) \end{aligned}$ | $\begin{aligned} & 46.3 \\ & (82) \end{aligned}$ | $\begin{aligned} & 47.9 \\ & (94) \end{aligned}$ | $\begin{aligned} & 50.0 \\ & (80) \end{aligned}$ | $\begin{aligned} & 47.6 \\ & (418) \end{aligned}$ | 47.5 |
| QUEBEC | $\begin{aligned} & 35.3 \\ & (51) \end{aligned}$ | $\begin{aligned} & 39.8 \\ & (113) \end{aligned}$ | $\begin{aligned} & 45.1 \\ & (113) \end{aligned}$ | $\begin{aligned} & 48.7 \\ & (117) \end{aligned}$ | $\begin{aligned} & 44.5 \\ & (128) \end{aligned}$ | $\begin{aligned} & 43.7 \\ & (522) \end{aligned}$ | 42.7 |
| ONTARIO | $\begin{aligned} & 68.4 \\ & (19) \end{aligned}$ | $\begin{aligned} & 49.1 \\ & (55) \end{aligned}$ | $\begin{aligned} & 47.2 \\ & (106) \end{aligned}$ | $\begin{aligned} & 51.6 \\ & (126) \end{aligned}$ | $\begin{aligned} & 48.7 \\ & (158) \end{aligned}$ | $\begin{aligned} & 50.0 \\ & (464) \end{aligned}$ | 52.4 |
| PRAIRIES | $\begin{aligned} & 38.1 \\ & (21) \end{aligned}$ | $\begin{aligned} & 53.4 \\ & (73) \end{aligned}$ | $\begin{aligned} & 50.0 \\ & (98) \end{aligned}$ | $\begin{aligned} & 58.5 \\ & (106) \end{aligned}$ | $\begin{aligned} & 52.8 \\ & (176) \end{aligned}$ | $\begin{aligned} & 53.0 \\ & (474) \end{aligned}$ | 50.9 |
| B.C. | $\begin{aligned} & 75.0 \\ & (4) \end{aligned}$ | $\begin{aligned} & 51.4 \\ & (35) \end{aligned}$ | $\begin{aligned} & 50.7 \\ & (71) \end{aligned}$ | $\begin{aligned} & 48.5 \\ & (66) \end{aligned}$ | $\begin{aligned} & 64.8 \\ & (145) \end{aligned}$ | $\begin{aligned} & 57.0 \\ & (321) \end{aligned}$ | 56.4 |
| CRUDE RATE | $\begin{aligned} & 41.8 \\ & (165) \end{aligned}$ | $\begin{aligned} & 48.4 \\ & (368) \end{aligned}$ | $\begin{aligned} & 47.7 \\ & (470) \end{aligned}$ | $\begin{aligned} & 51.3 \\ & (509) \end{aligned}$ | $\begin{aligned} & 52.6 \\ & (687) \end{aligned}$ | $\begin{aligned} & 49.7 \\ & (2199) \end{aligned}$ |  |
| ADJUSTED RATE | 49.3 | 49.5 | 47.8 | 51.5 | 51.6 |  | 49.7 |

* Rates standardized against the "Women Homemakers" group.

TABLE 6.12 NON-DRINKERS
WOMEN HOMEMAKERS, AGED 25-44 YEARS
Percentage of Women Reporting NO Alcohol Consumption in the Previous Week

| REGION | INCOME QUINT. 1 | INCOME QUINT. 2 | INCOME QUINT. 3 | INCOME QUINT. 4 | INCOME QUINT. 5 | $\begin{aligned} & \text { CRUDE } \\ & \text { RATE } \end{aligned}$ | ADJUSTED RATE |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ATLANTIC REGIONS | $\begin{aligned} & 41.3 \\ & (63) \end{aligned}$ | $\begin{aligned} & 20.9 \\ & (67) \end{aligned}$ | $\begin{aligned} & 17.8 \\ & (45) \end{aligned}$ | $\begin{aligned} & 29.2 \\ & (24) \end{aligned}$ | $\begin{aligned} & 15.4 \\ & (13) \end{aligned}$ | $\begin{aligned} & 26.9 \\ & (212) \end{aligned}$ | 24.6 |
| QUEBEC | $\begin{aligned} & 29.2 \\ & (48) \end{aligned}$ | $\begin{aligned} & 14.1 \\ & (64) \end{aligned}$ | $\begin{aligned} & 20.7 \\ & (58) \end{aligned}$ | $\begin{aligned} & 13.8 \\ & (29) \end{aligned}$ | $\begin{aligned} & 16.7 \\ & (18) \end{aligned}$ | $\begin{aligned} & 19.4 \\ & (217) \end{aligned}$ | 18.6 |
| ONTARIO | $\begin{aligned} & 20.0 \\ & (40) \end{aligned}$ | $\begin{aligned} & 14.6 \\ & (48) \end{aligned}$ | $\begin{aligned} & 25.5 \\ & (55) \end{aligned}$ | $\begin{aligned} & 17.3 \\ & (52) \end{aligned}$ | $\begin{aligned} & 47.4 \\ & (19) \end{aligned}$ | $\begin{aligned} & 22.0 \\ & (214) \end{aligned}$ | 22.8 |
| PRAIRIES | $\begin{aligned} & 21.1 \\ & (19) \end{aligned}$ | $\begin{aligned} & 18.6 \\ & (59) \end{aligned}$ | $\begin{aligned} & 18.0 \\ & (61) \end{aligned}$ | $\begin{aligned} & 11.1 \\ & (72) \end{aligned}$ | $\begin{aligned} & 17.7 \\ & (51) \end{aligned}$ | $\begin{aligned} & 16.4 \\ & (262) \end{aligned}$ | 15.3 |
| B.C. | $\begin{aligned} & 42.9 \\ & (14) \end{aligned}$ | $\begin{aligned} & 11.8 \\ & (34) \end{aligned}$ | $\begin{aligned} & 23.9 \\ & (46) \end{aligned}$ | $\begin{aligned} & 10.5 \\ & (38) \end{aligned}$ | $\begin{aligned} & 3.2 \\ & (31) \end{aligned}$ | $\begin{aligned} & 15.9 \\ & (163) \end{aligned}$ | 18.8 |
| $\begin{aligned} & \text { CRUDE } \\ & \text { RATE } \end{aligned}$ | $\begin{aligned} & 31.5 \\ & (184) \end{aligned}$ | $\begin{aligned} & 16.5 \\ & (272) \end{aligned}$ | $\begin{aligned} & 21.1 \\ & (265) \end{aligned}$ | $\begin{aligned} & 14.9 \\ & (215) \end{aligned}$ | $\begin{aligned} & 18.2 \\ & (132) \end{aligned}$ | $\begin{aligned} & 20.1 \\ & (1068) \end{aligned}$ |  |
| ADJUSTED RATE | 29.9 | 16.3 | 20.9 | 14.0 | 20.7 |  | 19.9 |

TABLE 6.13 NON-DRINKERS
WOMEN IN THE PAID LABOUR FORCE, AGED 25-44 YEARS
Percentage of Women Reporting NO Alcohol Consumption in the Previous Week*

| REGION | INCOME QUINT. 1 | INCOME QUINT. 2 | INCOME QUINT. 3 | INCOME QUINT. 4 | $\begin{gathered} \text { INCOME } \\ \text { QUINT. } \\ 5 \end{gathered}$ | $\begin{aligned} & \text { CRUDE } \\ & \text { RATE } \end{aligned}$ | ADJUSTED RATE |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ATLANTIC REGIONS | $\begin{aligned} & 12.5 \\ & (16) \end{aligned}$ | $\begin{aligned} & 30.8 \\ & (13) \end{aligned}$ | $\begin{aligned} & 20.0 \\ & (30) \end{aligned}$ | $\begin{aligned} & 17.7 \\ & (51) \end{aligned}$ | $\begin{aligned} & 20.3 \\ & (59) \end{aligned}$ | $\begin{aligned} & 19.5 \\ & (169) \end{aligned}$ | 21.0 |
| QUEBEC | $\begin{aligned} & 18.2 \\ & (11) \end{aligned}$ | $\begin{aligned} & 8.3 \\ & (12) \end{aligned}$ | $\begin{aligned} & 8.3 \\ & (24) \end{aligned}$ | $\begin{aligned} & 21.3 \\ & (47) \end{aligned}$ | $\begin{aligned} & 10.7 \\ & (103) \end{aligned}$ | $\begin{aligned} & 13.2 \\ & (197) \end{aligned}$ | 12.9 |
| ONTARIO | $\begin{aligned} & 9.1 \\ & (11) \end{aligned}$ | $\begin{aligned} & 8.3 \\ & (12) \end{aligned}$ | $\begin{aligned} & 20.5 \\ & (39) \end{aligned}$ | $\begin{aligned} & 12.9 \\ & (62) \end{aligned}$ | $\begin{aligned} & 1.0 \\ & (103) \end{aligned}$ | $\begin{aligned} & 8.4 \\ & (227) \end{aligned}$ | 11.5 |
| PRAIRIES | $37.5$ <br> (8) | $\begin{aligned} & 0 \\ & (10) \end{aligned}$ | $\begin{aligned} & 18.2 \\ & (33) \end{aligned}$ | $\begin{aligned} & 10.4 \\ & (48) \end{aligned}$ | $\begin{aligned} & 10.0 \\ & (100) \end{aligned}$ | $\begin{aligned} & 12.1 \\ & (199) \end{aligned}$ | 14.3 |
| B.C. | $\begin{aligned} & 50.0 \\ & (2) \end{aligned}$ | $\begin{aligned} & 26.3 \\ & (19) \end{aligned}$ | $\begin{aligned} & 12.5 \\ & (16) \end{aligned}$ | $\begin{aligned} & 14.3 \\ & (21) \end{aligned}$ | $\begin{aligned} & 15.5 \\ & (84) \end{aligned}$ | $\begin{aligned} & 16.9 \\ & (142) \end{aligned}$ | 23.2 |
| $\begin{aligned} & \text { CRUDE } \\ & \text { RATE } \end{aligned}$ | $\begin{aligned} & 18.8 \\ & (48) \end{aligned}$ | $\begin{aligned} & 16.7 \\ & (66) \end{aligned}$ | $\begin{aligned} & 16.9 \\ & (142) \end{aligned}$ | $\begin{aligned} & 15.3 \\ & (229) \end{aligned}$ | $\begin{aligned} & 10.5 \\ & (449) \end{aligned}$ | $\begin{aligned} & 13.5 \\ & (934) \end{aligned}$ |  |
| $\begin{aligned} & \text { ADJUSTED } \\ & \text { RATE } \end{aligned}$ | 24.8 | 13.5 | 16.1 | 15.2 | 11.2 |  | 16.2 |

[^8]TABLE 6.14 NON-DRINKERS
MEN IN THE PAID LABOUR FORCE, AGED 25-44 YEARS
Percentage of Men Reporting NO Alcohol Consumption in the Previous Week*

| REGION | INCOME QUINT. 1 | INCOME QUINT. 2 | INCOME QUINT. 3 | INCOME QUINT. 4 | $\begin{gathered} \text { INCOME } \\ \text { QUINT. } \\ 5 \\ \hline \end{gathered}$ | $\begin{aligned} & \text { CRUDE } \\ & \text { RATE } \end{aligned}$ | $\begin{aligned} & \text { ADJUSTED } \\ & \text { RATE } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ATLANTIC REGIONS | $\begin{aligned} & 17.1 \\ & (70) \end{aligned}$ | $\begin{aligned} & 13.0 \\ & (92) \end{aligned}$ | $\begin{aligned} & 13.4 \\ & (82) \end{aligned}$ | $\begin{aligned} & 17.0 \\ & (94) \end{aligned}$ | $\begin{aligned} & 8.8 \\ & (80) \end{aligned}$ | $\begin{aligned} & 13.9 \\ & (418) \end{aligned}$ | 14.1 |
| QUEBEC | $\begin{aligned} & 17.7 \\ & (51) \end{aligned}$ | $\begin{aligned} & 6.2 \\ & (113) \end{aligned}$ | $\begin{aligned} & 4.4 \\ & (113) \end{aligned}$ | $\begin{aligned} & 6.8 \\ & (117) \end{aligned}$ | $\begin{aligned} & 4.7 \\ & (128) \end{aligned}$ | $\begin{aligned} & 6.7 \\ & (522) \end{aligned}$ | 7.7 |
| ONTARIO | $\begin{aligned} & 15.8 \\ & (19) \end{aligned}$ | $\begin{aligned} & 10.9 \\ & (55) \end{aligned}$ | $\begin{aligned} & 6.6 \\ & (106) \end{aligned}$ | $\begin{aligned} & 8.7 \\ & (126) \end{aligned}$ | $\begin{aligned} & 11.4 \\ & (158) \end{aligned}$ | $\begin{aligned} & 9.7 \\ & (464) \end{aligned}$ | 10.3 |
| PRAIRIES | $\begin{aligned} & 0 \\ & (21) \end{aligned}$ | $\begin{aligned} & 12.3 \\ & (73) \end{aligned}$ | $\begin{aligned} & 3.1 \\ & (98) \end{aligned}$ | $\begin{aligned} & 6.6 \\ & (106) \end{aligned}$ | $\begin{aligned} & 7.4 \\ & (176) \end{aligned}$ | $\begin{aligned} & 6.8 \\ & (474) \end{aligned}$ | 6.2 |
| B.C. | $\begin{aligned} & 0 \\ & (4) \end{aligned}$ | $\begin{aligned} & 0 \\ & (35) \end{aligned}$ | $\begin{aligned} & 7.0 \\ & (71) \end{aligned}$ | $\begin{aligned} & 7.6 \\ & (66) \end{aligned}$ | $\begin{aligned} & 2.8 \\ & (145) \end{aligned}$ | $\begin{aligned} & 4.4 \\ & (321) \end{aligned}$ | 3.6 |
| $\begin{array}{\|l\|l} \text { CRUDE } \\ \text { RATE } \end{array}$ | $\begin{aligned} & 14.6 \\ & (165) \end{aligned}$ | $\begin{aligned} & 9.2 \\ & (368) \end{aligned}$ | $\begin{aligned} & 6.6 \\ & (470) \end{aligned}$ | $\begin{aligned} & 9.2 \\ & (509) \end{aligned}$ | $\begin{aligned} & 7.0 \\ & (687) \end{aligned}$ | $\begin{aligned} & 8.4 \\ & (2199) \end{aligned}$ |  |
| ADJUSTED RATE | 10.2 | 9.1 | 6.7 | 9.3 | 7.2 |  | 8.5 |

* Rates standardized against the "Women Homemakers" group.


## PHYSICAL ACTIVITY

The top predictors of the amount of physical activity women reported were the season the survey was taken, the region of residence and the level of education.

Activity levels were scored according to the physical activity index (see Chapter Four) with a score of three being assigned to the lowest reported levels of activity and a score of one being assigned to the highest. The grand mean score for all female subjects was 1.99 . Table 6.15 shows the beta values of the top three predictors, season of survey, region and education, and the group means for each of their categories.

TABLE 6:15 PREDICTORS OF PHYSICAL ACTIVITY LEVELS FOR WOMEN SUBJECTS

| $\begin{aligned} & \text { SEASON OF } \\ & \text { SURVEY } \\ & \text { (beta: } 0.11 \text { ) } \end{aligned}$ | $\begin{aligned} & \text { GROUP } \\ & \text { MEAN } \end{aligned}$ | $\begin{aligned} & \text { REGION } \\ & \text { (beta:0.11) } \end{aligned}$ | $\begin{aligned} & \text { GROUP } \\ & \text { MEAN } \end{aligned}$ | EDUCATION <br> (beta:0.06) | $\begin{aligned} & \text { GROUP } \\ & \text { MEAN } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Fall 1978 | 1.83 | Atlantic | 2.13 | Secondary | 2.01 |
| Winter 1978 | 2.06 | Quebec | 2.00 | Post Sec. | 2.01 |
| Spring 1979 | 2.01 | Ontario | 1.94 | Diploma | 1.89 |
|  |  | Prairies | 1.93 | Degree | 1.93 |
| grand mean 1.99 - percentage variance explained 3.1 |  |  |  |  |  |

Among all subgroups, those surveyed in July - September 1978 and those living in B.C., reported the most activity. Given the association between warmer weather and higher levels of activity, it should not be surprising that B.C., with the mildest year-round climate is also associated with higher activity levels. People living in the Atlantic provinces and those living alone had the lowest average reported levels of activity.

When the percentage of subjects reporting the lowest levels of activity were standardized on the basis of season and region against the homemaker's group, workforce women were shown to have the greatest number of sedentary subjects

TABLE 6.16 PHYSICAL ACTIVITY WOMEN HOMEMAKERS, AGED 25-44 YEARS

Percentage of Women Scoring Less than 1750 on the Physical Activity Index

| SEASON <br> OF <br> SURVEY | ATLANTIC <br> REGIONS | QUEBEC | ONTARIO | PRAIRIES | B.C. | CRUDE <br> RATE | ADJUSTED <br> RATE |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :---: |
| FALL | 32.0 <br> $(94)$ | 29.0 <br> $(76)$ | 23.3 <br> $(73)$ | 18.3 <br> $(82)$ | 24.1 <br> $(54)$ | 25.6 <br> $(379)$ | 25.6 |
| WINTER | 48.3 <br> $(149)$ | 43.6 <br> $(165)$ | 37.7 <br> $(122)$ | 35.2 <br> $(165)$ | 31.7 <br> $(79)$ | 40.2 <br> $(680)$ | 40.3 |
| SPRING | 43.1 <br> $(153)$ | 39.1 <br> $(161)$ | 30.4 <br> $(125)$ | 37.8 <br> $(135)$ | 23.0 <br> $(74)$ | 36.7 <br> $(648)$ | 36.6 |
| CRUDE | 43.2 | 39.1 | 31.6 | 32.5 | 26.6 | 35.6 |  |
| RATE | $(396)$ | $(402)$ | $(320)$ | $(382)$ | $(207)$ | $(1707)$ |  |
| ADJUSTED <br> RATE | 43.5 | 38.7 | 31.7 | 32.4 | 26.7 | 35.6 |  |

TABLE 6.17 PHYSICAL ACTIVITY
WOMEN IN THE PAID LABOUR FORCE, AGED 25-44 YEARS
Percentage of Women Scoring Less than 1750 on the Physical Activity Index*

| $\begin{aligned} & \text { SEASON } \\ & \text { OF } \\ & \text { SURVEY } \end{aligned}$ | ATLANTIC REGIONS | QUEBEC | ONTARIO | PRAIRIES | B.C. | $\begin{aligned} & \text { CRUDE } \\ & \text { RATE } \end{aligned}$ | $\begin{aligned} & \text { ADJUSTED } \\ & \text { RATE } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| FALL | $\begin{aligned} & 48.7 \\ & (78) \end{aligned}$ | $\begin{aligned} & 33.3 \\ & (69) \end{aligned}$ | $\begin{aligned} & 30.6 \\ & (85) \end{aligned}$ | $\begin{aligned} & 26.6 \\ & (79) \end{aligned}$ | $\begin{aligned} & 17.8 \\ & (45) \end{aligned}$ | $\begin{aligned} & 32.6 \\ & (356) \end{aligned}$ | 33.0 |
| WINTER | $\begin{aligned} & 51.6 \\ & (91) \end{aligned}$ | $\begin{aligned} & 44.4 \\ & (126) \end{aligned}$ | $\begin{aligned} & 40.0 \\ & (125) \end{aligned}$ | $\begin{aligned} & 37.7 \\ & (114) \end{aligned}$ | $\begin{aligned} & 38.8 \\ & (80) \end{aligned}$ | $\begin{aligned} & 42.4 \\ & (536) \end{aligned}$ | 43.1 |
| SPRING | $\begin{aligned} & 46.9 \\ & (98) \end{aligned}$ | $\begin{aligned} & 38.3 \\ & (115) \end{aligned}$ | $\begin{aligned} & 40.2 \\ & (112) \end{aligned}$ | $\begin{aligned} & 40.2 \\ & (117) \end{aligned}$ | $\begin{aligned} & 38.5 \\ & (65) \end{aligned}$ | $\begin{aligned} & 38.6 \\ & (507) \end{aligned}$ | 41.1 |
| $\begin{aligned} & \text { CRUDE } \\ & \text { RATE } \end{aligned}$ | $\begin{aligned} & 49.1 \\ & (267) \end{aligned}$ | $\begin{aligned} & 39.7 \\ & (310) \end{aligned}$ | $\begin{aligned} & 37.6 \\ & (322) \end{aligned}$ | $\begin{aligned} & 35.8 \\ & (310) \end{aligned}$ | $\begin{aligned} & 33.7 \\ & (190) \end{aligned}$ | $\begin{aligned} & 39.3 \\ & (1399) \end{aligned}$ |  |
| ADJUSTED RATE | 49.2 | 39.6 | 38.0 | 36.2 | 34.0 |  | 40.1 |

* Rates standardized against the "Women Homemakers" group.

TABLE 6.18 PHYSICAL ACTIVITY
MEN IN THE PAID LABOUR FORCE, AGED 25-44 YEARS
Percentage of Men Scoring Less than 1750 on the Physical Activity Index*

| SEASON <br> OF <br> SURVEY | ATLANTIC <br> REGIONS | QUEBEC | ONTARIO | PRAIRIES | B.C. | CRUDE <br> RATE | ADJUSTED <br> RATE |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :---: |
| FALL | 41.9 <br> $(136)$ | 38.7 <br> $(142)$ | 31.9 <br> $(138)$ | 33.6 <br> $(146)$ | 22.1 <br> $(86)$ | 34.6 <br> $(648)$ | 35.0 |
| WINTER | 41.6 <br> $(185)$ | 49.6 <br> $(270)$ | 29.0 <br> $(221)$ | 34.1 <br> $(223)$ | 28.8 <br> $(146)$ | 37.6 <br> $(1045)$ | 37.9 |
| SPRING | 50.5 <br> $(192)$ | 29.8 <br> $(235)$ | 32.8 <br> $(186)$ | 34.7 <br> $(239)$ | 34.8 <br> $(112)$ | 36.3 <br> $(964)$ | 38.1 |
| CRUDE <br> RATE | 45.0 <br> $(513)$ | 40.0 <br> $(647)$ | 31.0 <br> $(545)$ | 34.2 <br> $(608)$ | 29.1 <br> $(344)$ | 36.4 | $(2657)$ |

* Rates standardized against the "Women Homemakers" group.
( $40.1 \%, \mathrm{p}<.01$ ), compared with the homemaker group (35.6\%) and the workforce men (37.4\%). (See Table 6.16-18)

These results should probably not be considered surprising when we know that women tend to work in service and clerical type jobs (Phillips and Phillips, 1983) and that for workforce women with families there is very little time for leisure activities (Meissner, 1975).

The Canada Fitness Survey (Stephens, Craig and Ferris, 1986) found that only $25 \%$ of the $20-60$ year-old population were active enough to provide
cardiovascular health benefit. This is lower than the $32-33 \%$ found in the 25 - 44 year-olds included in this study, but age alone could account for the difference.

The Fitness Survey found that activity was related th the type of occupation (a question not addressed in this study) and that while professionals and managers had the highest proportion of adequate activity, blue collar workers had the lowest. This would support the results of this analysis which showed that education was positively correlated with activity. The Fitness Survey also identified an increasing mean level of energy expenditure as the study moved from East to West.

One U.S. study (U.S. Department of Health and Human Services, 1985) reported physical activity to be positively associated with being male and having higher socioeconomic status but associated inversely with age.

More men (25.2\%) than women (17.0\%) failed to complete the section on physical activity which summed reported domestic, work-related and leisure time activity to create the Physical Activity Index. The Health of Canadians (Health and Welfare/Statistics Canada, 1982), reporting on the C.H.S. reported an overall $86 \%$ response rate and that the proportion of responses decreased with age. It is unclear how we should interpret the fact that a greater percentage of males failed to answer sufficient questions to generate a score.

## COMPANIONSHIP

Multiple Classification Analysis showed that the season of the survey, the size of the family and marital status were the best indicators, in this model, of the amount of leisure time with company subjects would report. However, the model was able to explain only $3.2 \%$ of the variation in scores (Table 6.19).

The subgroups with the highest mean scores, indicating that they reported spending most or all of their leisure time alone, were those not married, living alone and surveyed between October and December 1978. The groups with the lowest mean scores, indicating that they spent most or all of their leisure time with others, were from large families, surveyed in the late summer of 1978 or January to March 1979 and those living in British Columbia. Table 6.19 shows the sub group means for each category of the top three predictors.

TABLE 6.19 PREDICTORS OF COMPANIONSHIP DURING LEISURE HOURS FOR WOMEN SUBJECTS

| $\begin{aligned} & \text { SEASON OF } \\ & \text { SURVEY } \\ & \text { (beta: } 0.10 \text { ) } \end{aligned}$ | GROUP MEAN | FAMILY SIZE (beta:0.08) | GROUP MEAN | MARITAL STATUS (beta:0.08) | $\begin{aligned} & \text { GROUP } \\ & \text { MEAN } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| July to Sept. 1978 | 1.44 | One | 1.66 | Not |  |
| Oct. to Dec. 1978 | 2.06 | Two or Three | 1.58 | Married | 1.65 |
| Jan. to Mar. 1978 | 2.01 | Four to Six | 1.50 |  |  |
|  |  | Seven or More | 1.41 | Married | 1.51 |
| grand mean 1.53 - percent variance explained 3.2 |  |  |  |  |  |

Rates for subjects reporting that they spent all or most of their leisure time alone were standardized on 'season of survey' and 'family size' using the homemaker populations as the standard (see Tables 6.20-22). A significantly greater proportion of women homemakers reported spending leisure time alone (12.2\%) than was the case for men (7.3\%, $p<.002$ ) and workforce women (8.1\%, p<.01).

Much has been written about the relative isolation of the housewife in our society; about the higher levels of psychological distress experienced by housewives (Gore and Mangione, 1983) and the positive effects of marriage (Morgan, 1980). Nathanson (1980) stated that "employment for women, much like marriage for men, has been found to be socially integrating and consequently protective of health". The results of this study would seem to support at least the notion of employment being associated with greater levels of social interaction.

The discussion on demographic variables (see Tables 6.82 and 6.84) at the end of this chapter further emphasize the apparent protective effect of marriage and family.

More men (18.3\%) than women (8.9\%) failed to answer the question about companionship and more workforce women (10.4\%) than homemakers (7.7\%) were non-respondents. The direct relationship between non-response rates and higher rates of social interaction should be noted. In theory, if all the non-respondents were socially isolated, the results would look very different. However, there seems no a priori reason to assume that the non-respondents might come from one group than the other.

TABLE 6.20 COMPANIONSHIP IN LEISURE TIME WOMEN HOMEMAKERS, AGED 25-44 YEARS

Percentage of Women Reported Spending all or most of their Leisure Time Alone

| SEASON OF <br> SURVEY | FAMILY <br> OF 1 | FAMILY <br> OF 2-3 | FAMILY <br> OF 4-6 | FAMILY <br> OF 7 | CRUDE <br> RATE | ADJUSTED <br> RATE |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| FALL | (0) | 10.1 <br> $(89)$ | 6.4 <br> $(299)$ | 22.6 <br> $(31)$ | 7.6 <br> $(419)$ | 8.2 |
| WINTER | 50.0 <br> $(4)$ | 22.2 <br> $(162)$ | 14.9 <br> $(544)$ | 15.9 <br> $(44)$ | 16.7 <br> $(754)$ | 16.6 |
| SPRING | 0 | 14.6 <br> $(0)$ | 9.0 <br> $(511)$ | 6.4 <br> $(47)$ | 10.2 <br> $(729)$ | 10.0 |
| CRUDE <br> RATE | 50.0 <br> $(4)$ | 16.6 <br> $(422)$ | 10.8 <br> $(1354)$ | 11.5 <br> $(122)$ | 12.2 <br> $(1902)$ |  |
| ADJUSTED <br> RATE | 19.8 | 16.6 | 10.7 | 13.7 |  | 12.2 |

TABLE 6.21 COMPANIONSHIP IN LEISURE TIME WOMEN IN THE PAID LABOUR FORCE, AGED 25-44 YEARS

Percentage of Women Reported Spending all or most of their Leisure Time Alone*

| SEASON OF <br> SURVEY | FAMILY <br> OF 1 | FAMILY <br> OF 2-3 | FAMILY <br> OF 4-6 | FAMILY <br> OF 7 + | CRUDE <br> RATE | ADJUSTED <br> RATE |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| FALL | (53) | 9.6 <br> $(146)$ | 5.9 <br> $(169)$ | 0 <br> $(17)$ | 9.1 <br> $(385)$ | 6.4 |
| WINTER | 15.2 <br> $(66)$ | 12.6 <br> $(254)$ | 9.5 <br> $(253)$ | 7.7 <br> $(13)$ | 11.4 <br> $(586)$ | 10.1 |
| SPRING | 12.9 <br> $(62)$ | 8.3 <br> $(252)$ | 6.7 <br> $(223)$ | 6.7 <br> $(15)$ | 8.2 <br> $(552)$ | 7.1 |
| CRUDE | 16.0 <br> RATE | $181)$ <br> $(652)$ | 7.6 <br> $(645)$ | 4.4 | 9.7 <br> $(45)$ |  |
| ADJUSTED | 15.5 | 10.3 | 7.6 | 5.6 |  | 8.1 |

*Rates standardized against the "Women Homemakers" group.

TABLE 6.22 COMPANIONSHIP IN LEISURE TIME MEN IN THE PAID LABOUR FORCE, AGED 25-44 YEARS

Percentage of Men Reported Spending most or all of their Leisure Time Alone*

| SEASON OF <br> SURVEY | FAMILY <br> OF 1 | FAMILY <br> OF 2-3 | FAMILY <br> OF 4-6 | FAMILY <br> OF 7 + | CRUDE <br> RATE | ADJUSTED <br> RATE |
| :--- | :---: | :---: | :---: | :---: | :--- | :--- |
| FALL | 22.8 | 6.3 <br> $(255)$ | 6.1 <br> $(363)$ | 0 <br> $(26)$ | 7.3 <br> $(701$ | 6.2 |
| WINTER | 25.9 <br> $(85)$ | 10.0 <br> $(412)$ | 6.6 <br> $(611)$ | 10.3 <br> $(29)$ | 9.3 <br> $(1137)$ | 7.6 |
| SPRING | 19.3 <br> $(88)$ | 7.4 <br> $(393)$ | 7.1 <br> $(560)$ | 15.6 <br> $(32)$ | 8.2 <br> $(1073)$ | 7.8 |
| CRUDE <br> RATE | 22.6 <br> $(230)$ | 8.1 <br> $(1060)$ | 6.7 <br> $(1534)$ | 5.8 <br> $(87)$ | 8.4 <br> $(2911)$ |  |
| ADJUSTED <br> RATE | 22.7 | 8.2 | 6.7 | 11.7 |  | 7.3 |

Rates standardized against the "Women Homemakers" group.

## HORMONE PILLS

In this model, family size, region of residence and economic
responsibility were the best predictors of hormone pill taking. Table 6.23 shows the group means for each subgroup of these variables as well as the beta scores and percentage of variance explained. The higher the group mean score, the greater number of subjects engaging in the behaviour. The subgroups reporting the highest average pill consumption were those who were a family of one (group mean 1.74), those who described themselves as the principal breadwinner of the family (1.57) and women living in Quebec (1.45). Those reporting the lowest hormone pill consumption rates were those from large families (group mean 1.18 ) and those living in the Atlantic Provinces (1.28). The inverse relationship between family size and hormone pill taking
in this age group should be no surprise. The higher consumption rates in Quebec, a predominantly Roman Catholic population ( $88 \%$, Statistics Canada, 1981), leaves much room for musing.

Eight and a half percent ( $81 / 2 \%$ ) of all female subjects did not answer the question on hormone pills, there being slightly more non-respondents among the workforce women.

TABLE 6.23 PREDICTORS OF HORMONE PILL CONSUMPTION BY WOMEN SUBJECTS

| FAMILY SIZE <br> (beta:0.10) | $\begin{aligned} & \text { GROUP } \\ & \text { MEAN } \end{aligned}$ | REGION <br> (beta:0.08) | $\begin{aligned} & \text { GROUP } \\ & \text { MEAN } \end{aligned}$ | ECONOMIC RESPONSIBILITY (beta:0.07) | $\begin{aligned} & \hline \text { GROUP } \\ & \text { MEAN } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| One | 1.74 | Atlantic | 1.28 | Principal |  |
| Two or three | 1.43 | Quebec | 1.45 | Breadwinner | 1.57 |
| Four to six | 1.27 | Ontario | 1.32 |  |  |
| Seven or more 1.18 |  | Prairies | 1.35 | Not principal |  |
|  |  | B.C. | 1.32 | Breadwinner | 1.29 |

When the workforce women's rates were standardized on the basis of family size and region against the homemaker population, a significantly higher proportion of workforce women (16.8\%, p<.002) reported taking hormone pills. (See Tables 6.24-25) This difference can perhaps be in part explained by the fact that the homemaker group necessarily includes women who have temporarily left the workforce in order to have a family. Information required to identify such factors is not readily available in a cross-sectional study.

TABLE 6.24 USE OF HORMONE PILLS WOMEN HOMEMAKERS, AGED 25-44 YEARS

Percentage of Women Taking Hormones for Birth Control or other Reasons

| FAMILY <br> SIZE | ATLANTIC <br> REGIONS | QUEBEC | ONTARIO | PRAIRIES | B.C. | CRUDE <br> RATE | ADJUSTED <br> RATE |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| FAMILY <br> OF 1 | 0 <br> $(1)$ | 0 <br> $(2)$ | 0 <br> $(1)$ | 0 <br> $(1)$ | 0 <br> $(0)$ | 0 <br> $(5)$ | 0 |
| FAMILY <br> OF 2-3 | 14.6 <br> $(89)$ | 22.8 <br> $(92)$ | 12.2 <br> $(98)$ | 17.6 <br> $(91)$ | 12.3 <br> $(65)$ | 16.1 <br> $(435)$ | 16.4 |
| FAMILY <br> OF 4-6 | 8.5 <br> $(340)$ | 18.0 <br> $(316)$ | 12.3 <br> $(244)$ | 15.3 <br> $(301)$ | 13.7 <br> $(146)$ | 12.0 <br> $(1347)$ | 14.4 |
| FAMILY <br> OF 7+ | 5.2 | 12.5 <br> $(58)$ | 8.7 <br> $(23)$ | 5.6 <br> $(18)$ | 0 <br> $(5)$ | 6.7 <br> $(120)$ | 7.0 |
| CRUDE <br> RATE | 9.2 <br> $(488)$ | 14.1 <br> $(426)$ | 12.0 <br> $(366)$ | 15.3 <br> $(411)$ | 13.0 <br> $(216)$ | 13.6 | $(1907)$ |

TABLE 6.25 USE OF HORMONE PILLS WOMEN IN THE PAID LABOUR FORCE, AGED 25-44 YEARS

Percentage of Women Taking Hormones for Birth Control or other Reasons*

| FAMILY <br> SIZE | ATLANTIC <br> REGIONS | QUEBEC | ONTARIO | PRAIRIES | B.C. | CRUDE <br> RATE | ADJUSTED <br> RATE |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :---: |
| FAMILY <br> OF 1 | 4.0 <br> $(21)$ | 44.4 <br> $(45)$ | 39.0 <br> $(41)$ | 40.4 <br> $(47)$ | 32.0 <br> $(25)$ | 38.0 <br> $(179)$ | 30.8 |
| FAMILY <br> OF 2-3 | 25.2 <br> $(119)$ | 25.0 <br> $(148)$ | 23.6 <br> $(140)$ | 25.4 <br> $(138)$ | 22.6 <br> $(102)$ | 24.4 <br> $(647)$ | 24.6 |
| FAMILY <br> OF 4-6 | 19.1 <br> $(152)$ | 22.5 <br> $(120)$ | 9.4 <br> $(159)$ | 7.6 <br> $(145)$ | 6.1 <br> $(87)$ | 13.4 <br> $(663)$ | 14.0 |
| FAMILY <br> OF 7+ | 11.5 <br> $(26)$ | 22.2 <br> $(9)$ | 33.3 <br> $(3)$ | 20.0 <br> $(5)$ | 0 <br> $(2)$ | 15.6 <br> $(45)$ | 18.6 |
| CRUDE <br> RATE | 21.1 <br> $(318)$ | 26.7 <br> $(322)$ | 19.0 | $(343)$ | 19.7 | 17.6 <br> $(335)$ | 21.0 <br> $(1534)$ |
| ADJUSTED <br> RATE | 20.0 | 23.1 | 14.3 | 12.5 | 9.5 |  | 16.8 |

Rates standardized against the "Women Homemakers" group.

## LIFE CHANGE EVENTS

Family size, income and economic responsibility were shown to be the best predictors of life change events. A score of ' 3 ' was assigned if subjects reported more than one life change event, a score of ' 2 ' if they reported one life change event and a score of 'l' if they reported no life change events. The subgroups reporting the highest mean scores and therefore the highest average number of events were people in a family of one (mean score 1.39), those who were the principal income earners for their family (1.34) and those
in the lowest income families (1.31). The subgroups reporting the lowest average number of events were people from families of four or more (group means 1.20 to 1.22 ) and women living in Quebec (1.23). Table 6.26 shows the subgroup mean scores for each of the top three predictors, their beta scores and the percentage of variance in the scores explained by the model.

TABLE 6.26 PREDICTORS OF LIFE CHANGE EVENTS AMONG WOMEN SUBJECTS

| $\begin{aligned} & \text { FAMILY SIZE } \\ & \text { (beta:0.12) } \end{aligned}$ | $\begin{aligned} & \text { GROUP } \\ & \text { MEAN } \end{aligned}$ | INCOME QUINTILE (beta:0.10) | $\begin{aligned} & \text { GROUP } \\ & \text { MEAN } \end{aligned}$ | ECONOMIC RESPONSIBILITY (beta:0.07) | GROUP MEAN |
| :---: | :---: | :---: | :---: | :---: | :---: |
| One | 1.39 | Lowest | 1.31 | Principal |  |
| Two to three | 1.36 | Second | 1.26 | Breadwinner | 1.34 |
| Four to six | 1.22 | Third | 1.26 |  |  |
| Seven or more | 1.20 | Fourth | 1.24 | Not principal |  |
|  |  | Highest | 1.29 | Breadwinner | 1.25 |

Again, men had the highest percentage of non-respondents (19.6), then workforce women (11.3) and with the lowest percentage, homemakers (8.1).

When the workforce men's and women's populations were standardized against the homemakers group on the basis of family size and income, there was a significantly higher percentage ( $29.0 \%, \mathrm{p}<.002$ ) of workforce women than homemakers ( $17.6 \%$ ) reporting more than one life event in the previous year. Men also reported a higher rate ( $23.3 \%, \mathrm{p}<.05$ ). Tables $6.27-29$ show the crude and standardized rates for each of the groups.

One might speculate that workforce women experience more life changes because they are exposed to an additional sphere of interpersonal/employer related events. On the other hand this may be countered by the family centered social contacts experienced by the homemaker. It should be noted that $25 \%$ of the questions in the survey were 'exclusively' workforce related

TABLE 6.27 LIFE CHANGE EVENTS WOMEN HOMEMAKERS, AGED 25-44 YEARS

Percentage of Women Reporting More than One Major Life Change Event

| INCOME QUINTILES | FAMILY OF 1 | FAMILY OF 2-3 | FAMILY OF 4-6 | FAMILY OF $7+$ | $\begin{aligned} & \text { CRUDE } \\ & \text { RATE } \end{aligned}$ | ADJUSTED RATE |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| LOWEST QUINTILE | $\begin{aligned} & 50.0 \\ & (4) \end{aligned}$ | $\begin{aligned} & 27.0 \\ & (89) \end{aligned}$ | $\begin{aligned} & 1.5 \\ & (267) \end{aligned}$ | $20.5$ | $\begin{aligned} & 9.7 \\ & (404) \end{aligned}$ | 8.5 |
| SECOND QUINTILE | $\begin{aligned} & 100.0 \\ & (1) \end{aligned}$ | $\begin{aligned} & 30.8 \\ & (65) \end{aligned}$ | $\begin{aligned} & 19.5 \\ & (389) \end{aligned}$ | $\begin{aligned} & 19.4 \\ & (36) \end{aligned}$ | $\begin{aligned} & 21.2 \\ & (491) \end{aligned}$ | 22.3 |
| THIRD QUINTILE | $\begin{aligned} & 0 \\ & (0) \end{aligned}$ | $\begin{aligned} & 19: 7 \\ & (76) \end{aligned}$ | $\begin{aligned} & 18.2 \\ & (362) \end{aligned}$ | $\begin{aligned} & 10.0 \\ & (20) \end{aligned}$ | $\begin{aligned} & 18.1 \\ & (458) \end{aligned}$ | 18.0 |
| FOURTH QUINTILE | $\begin{aligned} & 0 \\ & (0) \end{aligned}$ | $\begin{aligned} & 33.3 \\ & (105) \end{aligned}$ | $\begin{aligned} & 14.7 \\ & (218) \end{aligned}$ | $\begin{aligned} & 0 \\ & (5) \end{aligned}$ | $\begin{aligned} & 20.4 \\ & (328) \end{aligned}$ | 18.0 |
| HIGHEST <br> QUINTILE | $\begin{aligned} & 0 \\ & (0) \end{aligned}$ | $\begin{aligned} & 24.8 \\ & (83) \end{aligned}$ | $\begin{aligned} & 25.0 \\ & (96) \end{aligned}$ | $\begin{aligned} & 0 \\ & (4) \end{aligned}$ | $\begin{aligned} & 27.3 \\ & (183) \end{aligned}$ | 23.4 |
| CRUDE RATE | $\begin{aligned} & 60.0 \\ & (5) \end{aligned}$ | $\begin{aligned} & 28.7 \\ & (418) \end{aligned}$ | $\begin{aligned} & 15.2 \\ & (1332) \end{aligned}$ | $\begin{aligned} & 16.5 \\ & (109) \end{aligned}$ | $\begin{aligned} & 18.4 \\ & (1864) \end{aligned}$ |  |
| ADJUSTED RATE | 37.3 | 27.1 | 15.0 | 12.0 |  | 17.6 |

TABLE 6.28 LIFE CHANGE EVENTS
WOMEN IN THE PAID LABOUR FORCE, AGED 25-44 YEARS
Percentage of Women Reporting More than One Major Life Change Event*

| INCOME <br> QUINTILES | FAMILY <br> OF 1 | FAMILY <br> OF 2-3 | FAMILY <br> OF 4-6 | FAMILY <br> OF 7 | CRUDE <br> RATE | ADJUSTED <br> RATE |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| LOWEST <br> QUINTILE | 33.3 <br> $(9)$ | 58.8 <br> $(34)$ | 36.4 <br> $(44)$ | 14.3 <br> $(7)$ | 42.6 <br> $(94)$ | 40.1 |
| SECOND <br> QUINTILE | 25.0 <br> $(8)$ | 46.5 <br> $(43)$ | 22.8 <br> $(79)$ | 21.4 <br> $(14)$ | 29.9 <br> $(144)$ | 28.0 |
| THIRD <br> QUINTILE | 91.7 <br> $(12)$ | 38.7 <br> $(62)$ | 24.8 <br> $(153)$ | 27.3 <br> $(11)$ | 31.9 <br> $(238)$ | 28.3 |
| FOURTH <br> QUINTILE | 41.0 <br> $(39)$ | 30.4 <br> $(135)$ | 15.1 <br> $(166)$ | 33.3 | 24.3 | 19.6 |
| HIGHEST <br> QUINTILE | 25.2 <br> $(111)$ | 26.4 <br> $(329)$ | 20.2 <br> $(124)$ | 100.0 <br> $(1)$ | 25.0 <br> $(565)$ | 26.3 |
| CRUDE <br> RATE | 33.5 |  |  |  |  |  |
| $(179)$ | 31.8 |  |  |  |  |  |
| $(603)$ | 21.6 <br> $(566)$ | 25.6 | 27.7 |  |  |  |
| ADJUSTED <br> RATE | 46.0 | 42.5 | 24.6 | 31.1 | $(1387)$ |  |

*Rates standardized against the "Women Homemakers" group.

TABLE 6.29 LIFE CHANGE EVENTS
MEN IN THE PAID LABOUR FORCE, AGED 25-44 YEARS
Percentage of Men Reporting More than One Major Life Change Event*

| INCOME <br> QUINTILES | FAMILY <br> OF I | FAMILY <br> OF 2-3 | FAMILY <br> OF 4-6 | FAMILY <br> OF $7+$ | CRUDE <br> RATE | ADJUSTED <br> RATE |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| LOWEST <br> QUINTILE | 100.0 <br> $(5)$ | 43.2 <br> $(44)$ | 30.9 <br> $(181)$ | 25.0 <br> $(24)$ | 33.9 <br> $(254)$ | 33.5 |
| SECOND <br> QUINTILE | 33.3 <br> $(3)$ | 26.5 <br> $(48)$ | 24.4 <br> $(390)$ | 16.1 <br> $(31)$ | 24.3 <br> $(522)$ | 24.4 |
| THIRD <br> QUINTILE | 66.7 <br> $(12)$ | 20.8 <br> $(149)$ | 20.6 <br> $(417)$ | 18.2 <br> $(11)$ | 21.6 <br> $(589)$ | 20.6 |
| FOURTH <br> QUINTILE | 53.1 <br> $(32)$ | 29.8 <br> $(272)$ | 13.5 <br> $(311)$ | 12.5 | 22.6 | 17.2 |
| HIGHEST <br> QUINTILE | 29.8 | 25.5 <br> $(181)$ | 13.3 <br> $(448)$ | 0 | $(173)$ | $(4)$ |

* Rates standardized against the "Women Homemakers" group.
while there were no equivalent events 'exclusive' to the homemaker population. Even the arrival of a baby in the household was presented in such a way as to imply equal impact on all members of the family.

Goldberg and Comstock (1980) reporting on a two site study involving 2780 subjects point out that different groups in society are more likely to experience different types of events and that people at different phases of
the life cycle (for example, early career and later career) are also prone to different types of life events. Skinner and Lei (1980) suggest that there are categories of life events such as social and personal, work or school related, domestic and family centered and that any questionnaire asking about life events needs to reflect all of these.

It should also be noted that some life events seem more likely than others to be associated with a second event. For example, in the C.H.S. list of possible life events, 'getting married' and 'having someone move in with you' are specified. It seems likely that the first might be strongly associated with the second; two other events, 'finishing school' and 'getting a job' also are likely to be associated. These many facets of evaluating life events do not appear to have been considered in the C.H.S.'s abbreviated list of life events and therefore caution is advised in the evaluation of the summary rates.

MOTOR VEHICLE TRAVEL
The top three predictors of travelling distances (as a driver or passenger) reported by subjects were income, economic responsibility and region of residence. Table 6.30 shows the mean scores of each of the subgroups of these three variables, the beta scores and the percentage of variance in the scores explained by this model.

TABLE 6.30 PREDICTING MOTOR VEHICLE TRAVEL BY WOMEN SUBJECTS

| INCOME QUINTILE (beta:0.18) | GROUP MEAN | ECONOMIC RESPONSIBILITY (beta:0.08) | $\begin{aligned} & \text { GROUP } \\ & \text { MEAN } \end{aligned}$ | $\begin{aligned} & \text { REGION } \\ & \text { (beta: } 0.07 \text { ) } \end{aligned}$ | $\begin{aligned} & \hline \text { GROUP } \\ & \text { MEAN } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Lowest | 1.74 | Principal |  | Atlantic | 1.99 |
| Second | 1.86 | Breadwinner | 2.13 | Quebec | 1.89 |
| Third | 1.98 |  |  | Ontario | 1.96 |
| Fourth | 2.03 | Not principal |  | Prairies | 2.07 |
| Highest | 2.17 | Breadwinner | 1.95 | B.C. | 2.02 |

The direct association between income and distances travelled should be noted. Overall, the subgroups reporting the highest travelling distances were the high income group (group mean 2.17), women from large families (2.13) and women who were the principal income earners for their families (2.13). The subgroups reporting the least motor vehicle travel were those in the lowest income group (1.74) and people making up a family of one (1.88). Given that all but this last group are likely to have children who require a certain amount of 'chauffering', difference between travelling distances of women from large versus small families, should not be surprising.

In this study respondents had to provide both passenger and driver distances if they were to be included. The number of missing responses in this section of the survey was very high; $32 \%$ of female subjects and $63 \%$ of male. In the report on the C.H.S. (Health and Welfare/Statistics Canada, 1982) it was suggested that subjects may have failed to answer the questions because they had difficulty recalling the number of miles or kilometres they had driven or ridden in the previous two weeks. It could also be that people who did not travel as a passenger during that time, simply left the question unanswered and this could account for the markedly higher number of absent scores among the male subjects.

When the workforce groups were standardized on the basis of family income and economic responsibility against the homemaker group (see Tables $6.31-6.33$ ), significantly more men ( $40.5 \%, \mathrm{p}<.02$ ) reported travelling in excess of 11,000 kilometres in the previous year. Fewer homemakers (29.0\%) than workforce women ( $33.7 \%$ ) travelled in excess of 11,000 kilometres but this difference was not significant.

Using principal wage earner and income as the standardizing factors changes the men's rates much more than it does the women's. This can be explained by the polarization of 'principal wage earners' (being mainly men) and 'not principal wage earners' (being primarily women) coupled with the inverse relationship between cell size and income for the homemaker group compared with the men's group.

Because of the high number of missing scores and the lack of indication as to how these scores might have been distributed, these results must be interpreted with caution.

TABLE 6.31 MOTOR VEHICLE TRAVEL AS A DRIVER OR PASSENGER WOMEN HOMEMAKERS, AGED 25-44 YEARS

Percentage of Women Indicating that they Travelled More than $11,000 \mathrm{~km}$ by Motor Vehicle in the Previous Year

|  | $\begin{aligned} & \text { LOWEST } \\ & \text { INCOME } \\ & \text { QUINT. } \end{aligned}$ | $\begin{aligned} & \text { SECOND } \\ & \text { INCOME } \\ & \text { QUINT. } \end{aligned}$ | $\begin{aligned} & \text { THIRD } \\ & \text { INCOME } \\ & \text { QUINT. } \end{aligned}$ |  | HIGHEST INCOME QUINT. | CRUDE Rate | ADJUSTED RATE |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| PRINCIPAL INCOME EARNER | $\begin{aligned} & 20.5 \\ & (44) \end{aligned}$ | $\begin{aligned} & 60.0 \\ & (5) \end{aligned}$ | $\begin{aligned} & 66.7 \\ & (3) \end{aligned}$ | $\begin{aligned} & 0 \\ & (0) \end{aligned}$ | $\begin{aligned} & 25.0 \\ & (4) \end{aligned}$ | $\begin{aligned} & 26.8 \\ & (56) \end{aligned}$ | 39.2 |
| NOT PRINCIPAL INCOME EARNER | $\begin{aligned} & 20.4 \\ & (231) \end{aligned}$ | $\begin{aligned} & 24.8 \\ & (375) \end{aligned}$ | $\begin{aligned} & 31.1 \\ & (347) \end{aligned}$ | $\begin{aligned} & 33.8 \\ & (263) \end{aligned}$ | $\begin{aligned} & 38.4 \\ & (146) \end{aligned}$ | $\begin{aligned} & 28.9 \\ & (1362) \end{aligned}$ | 28.6 |
| CRUDE RATE | $\begin{aligned} & 20.4 \\ & (275) \end{aligned}$ | $\begin{aligned} & 25.3 \\ & (380) \end{aligned}$ | $\begin{aligned} & 31.4 \\ & (350) \end{aligned}$ | $\begin{aligned} & 33.8 \\ & (263) \end{aligned}$ | $\begin{aligned} & 38.0 \\ & (150) \end{aligned}$ | $\begin{aligned} & 28.8 \\ & (1418) \end{aligned}$ |  |
| ADJUSTED RATE | 20.4 | 26.2 | 32.5 | 32.5 | 37.8 |  | 29.0 |

TABLE 6.32 MOTOR VEHICLE TRAVEL AS A DRIVER OR PASSENGER WOMEN IN THE PAID LABOUR FORCE, AGED 25-44 YEARS

Percentage of Women Indicating that they Travelled More than $11,000 \mathrm{~km}$ by Motor Vehicle in the Previous Year*

|  | LOWEST <br> INCOME <br> QUINT. | SECOND <br> INCOME <br> QUINT. | THIRD <br> INCOME <br> QUINT. | FOURTH <br> INCOME <br> QUINT. | HIGHEST <br> INCOME <br> QUINT. | CRUDE <br> RATE | ADJUSTED <br> RATE |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| PRINCIPAL <br> INCOME <br> EARNER | 25.7 <br> $(35)$ | 41.5 | 40.0 | 40.3 | 45.8 <br> $(41)$ | 41.3 <br> $(50)$ | 38.3 |
| NOT <br> PRINCIPAL <br> INCOME <br> EARNER | 33.3 |  |  |  |  |  |  |
| $(15)$ | 27.9 <br> $(68)$ | 35.7 <br> $(126)$ | 34.4 <br> $(183)$ | 41.2 <br> $(296)$ | 36.9 <br> $(688)$ | 33.5 |  |
| CRUDE <br> RATE | 28.0 | 33.0 | 36.9 | 36.2 | 42.8 | 38.4 |  |
| $(50)$ | $(109)$ | $(176)$ | $(260)$ | $(449)$ | $(1044)$ |  |  |
| ADJUSTED <br> RATE | 33.0 | 28.4 | 35.9 | 34.6 | 41.4 |  | 33.7 |

* Rates standardized against the "Women Homemakers" group.

TABLE 6.33 MOTOR VEHICLE TRAVEL AS A DRIVER OR PASSENGER MEN IN THE PAID LABOUR FORCE, AGED 25-44 YEARS

Percentage of Men Indicating that they Travelled More than $11,000 \mathrm{~km}$ by Motor Vehicle in the Previous Year*

|  | LOWEST <br> INCOME <br> QUINT. | SECOND <br> INCOME <br> QUINT. | THIRD <br> INCOME <br> QUINT. | FOURTH <br> INCOME <br> QUINT. | HIGHEST <br> INCOME <br> QUINT. | CRUDE <br> RATE | ADJUSTED <br> RATE |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| PRINCIPAL <br> INCOME <br> EARNER | 52.1 <br> $(117)$ | 59.7 <br> $(201)$ | 60.6 <br> $(231)$ | 56.0 <br> $(282)$ | 58.8 <br> $(323)$ | 58.0 <br> $(1154)$ | 57.7 |
| NOT <br> PRINCIPAL <br> INCOME <br> EARNER | 0 |  |  |  |  |  |  |
| $(3)$ | 46.2 | 42.9 <br> $(13)$ | 57.1 <br> $(14)$ | 59.1 <br> $(44)$ | 52.9 <br> $(87)$ | 39.8 |  |
| CRUDE <br> RATE | 50.8 | 58.9 | 59.6 | 56.1 | 58.9 | 57.6 |  |
| ADJUSTED <br> RATE | 2.0 | 46.7 | 43.6 | 57.1 | 59.1 |  | 40.5 |

* Rates standardized against the "Women Homemakers" group.


## MOTOR VEHICLE SEAT BELT USE

Region of residence, education and marital status were the top three predictors of seat belt use. In the entire model, this was the one dependent variable for which a significant degree of the variance in scores could be explained (30.2\%) and it was due to the strong association between region and legislation for seat belt use. In 1978-79 the Atlantic provinces, Manitoba and Alberta had no seat belt legislation. (Alberta, the last province to do so, introduced seat belt legislation in February, 1987.) Residents of the Prairies and the Atlantic provinces therefore reported the lowest levels of seat belt use. British Columbia reported the highest use of seat belts. Table 6.34 shows the subgroup mean scores for each of the top three predictor
variables. It can be seen from the beta scores that region is a strong predictor when compared with the other two.

TABLE 6.34 PREDICTORS OF MOTOR VEHICLE SEAT BELT USE BY WOMEN SUBJECTS

| $\begin{aligned} & \text { REGION } \\ & \text { (beta:0.52) } \end{aligned}$ | $\begin{aligned} & \text { GROUP } \\ & \text { MEAN } \end{aligned}$ | EDUCATION <br> (beta:0.14) | $\begin{aligned} & \text { GROUP } \\ & \text { MEAN } \end{aligned}$ | MARITAL STATUS (beta:0.06) | $\begin{aligned} & \text { GROUP } \\ & \text { MEAN } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Atlantic | 2.63 | Secondary | 1.99 | Not |  |
| Quebec | 1.53 | Post Sec. | 1.98 | married | 1.96 |
| Ontario | 1.46 | Diploma | 1.79 |  |  |
| Prairies | 2.33 | Degree | 1.64 | Married | 1.90 |
| B.C. | 1.42 |  |  |  |  |

An explanation for the high number of missing scores, $52 \%$ for women and almost $70 \%$ for men, offered in the report on the C.H.S. (Health and Welfare/Statistics Canada, 1982) was that "people may have been reluctant to report failure to wear seat belts in areas of the country where the wearing of seat belts is required by law." Such an explanation would suggest that non-respondents were non-wearers.

However, for the homemakers group, the percentage of missing scores gradually decreases as the region of residence moves from east to west and for the two workforce groups the rates for missing scores are similar for all regions except B.C., which in all instances has the lowest rate of non-responses. There is therefore no pattern of missing scores being associated with regions with legislation. One might still argue however, that in a country where seat belt use has such wide acceptance as a desirable behaviour, non-users may be more inclined than users to avoid declaring their behaviour.

When the rates for each of the workforce groups were standardized on the basis of region and education against the homemakers group they each showed
significantly higher proportions of non-users. While $41.1 \%$ of homemakers reported not using their seat belts, 48.6\% (p>.002) of workforce women and $47.1 \%$ ( $p>.01$ ) of workforce men reported not using vehicular seat belts. (See Tables 6.35-37) The strong association between education and seat belt use can also be seən in each of the tables.

Other researchers (Christian, 1984 and Dreghorn, 1985) have reported seat belt wearing rates of approximately $30 \%$ when no legislation was in effect and rates as high as $86-88 \%$ once it became law. In this study, the Atlantic provinces were the only region totally unaffected by legislation (in the Prairie region, Saskatchewan had legislation) and its reported non-use rate was higher than the rates quoted in these other studies. The non-use rate reported in the provinces with legislation was also slightly lower than the literature would lead the reader to expect. This would be expected if non-respondents were indeed non-users.

TABLE 6.35 USE OF MOTOR VEHICLE SEAT BELTS WOMEN HOMEMAKERS, AGED 25-44 YEARS

Percentage of Women Reporting NO USE of a Seat Belt as a Passenger or Driver

|  | ATLANTIC REGIONS | QUEBEC | ONTARIO | PRAIRIES | B.C. | CRUDE RATE | ADJUSTED RATE |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SOME <br> SECONDARY <br> EDUCATION | $\begin{aligned} & 88.6 \\ & (131) \end{aligned}$ | $\begin{aligned} & 22.4 \\ & (143) \end{aligned}$ | $\begin{aligned} & 13.0 \\ & (123) \end{aligned}$ | $\begin{aligned} & 65.0 \\ & (157) \end{aligned}$ | $\begin{aligned} & 18.2 \\ & (88) \end{aligned}$ | $\begin{aligned} & 45.5 \\ & (642) \end{aligned}$ | 44.2 |
| SOME <br> POST- <br> SECONDARY | $\begin{aligned} & 87.5 \\ & (16) \end{aligned}$ | $\begin{aligned} & 10.0 \\ & (10) \end{aligned}$ | $\begin{aligned} & 27.3 \\ & (11) \end{aligned}$ | $\begin{aligned} & 59.1 \\ & (22) \end{aligned}$ | $\begin{aligned} & 16.7 \\ & (18) \end{aligned}$ | $\begin{aligned} & 44.2 \\ & (77) \end{aligned}$ | 42.4 |
| CERTIFI- <br> CATE OR <br> DIPLOMA | $\begin{aligned} & 71.0 \\ & (31) \end{aligned}$ | $\begin{aligned} & 20.6 \\ & (34) \end{aligned}$ | $\begin{aligned} & 13.2 \\ & (38) \end{aligned}$ | $\begin{aligned} & 45.8 \\ & (59) \end{aligned}$ | $\begin{aligned} & 13.0 \\ & (23) \end{aligned}$ | $\begin{aligned} & 34.6 \\ & (185) \end{aligned}$ | 34.6 |
| UNIVERSITY DEGREE | $\begin{aligned} & 33.3 \\ & (15) \end{aligned}$ | $\begin{aligned} & 15.4 \\ & (13) \end{aligned}$ | $\begin{aligned} & 12.5 \\ & (16) \end{aligned}$ | $\begin{aligned} & 57.9 \\ & (19) \end{aligned}$ | $\begin{aligned} & 9.1 \\ & (11) \end{aligned}$ | $\begin{aligned} & 28.4 \\ & (74) \end{aligned}$ | 28.6 |
| $\begin{aligned} & \text { CRUDE } \\ & \text { RATE } \end{aligned}$ | $\begin{aligned} & 81.4 \\ & (193) \end{aligned}$ | $\begin{aligned} & 21.0 \\ & (200) \end{aligned}$ | $\begin{aligned} & 19.2 \\ & (188) \end{aligned}$ | $\begin{aligned} & 61.9 \\ & (257) \end{aligned}$ | $\begin{aligned} & 16.4 \\ & (140) \end{aligned}$ | $\begin{aligned} & 41.0 \\ & (978) \end{aligned}$ |  |
| ADJUSTED RATE | 81.0 | 20.5 | 14.1 | 60.3 | 16.4 |  | 41.1 |

TABLE 6.36 USE OF MOTOR VEHICLE SEAT BELTS WOMEN IN THE PAID LABOUR FORCE AGED 25-44 YEARS

Percentage of Women Reporting NO USE of a Seat Belt as a Passenger or Driver*

|  | ATLANTIC REGIONS | QUEBEC | ONTARIO | PRAIRIES | B.C. | $\begin{aligned} & \text { CRUDE } \\ & \text { RATE } \end{aligned}$ | $\begin{aligned} & \text { ADJUSTED } \\ & \text { RATE } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SOME SECONDARY EDUCATION | $\begin{aligned} & 87.0 \\ & (77) \end{aligned}$ | $\begin{aligned} & 34.4 \\ & (96) \end{aligned}$ | $\begin{aligned} & 23.7 \\ & (97) \end{aligned}$ | $\begin{aligned} & 76.7 \\ & (86) \end{aligned}$ | $\begin{aligned} & 28.8 \\ & (66) \end{aligned}$ | $\begin{aligned} & 49.3 \\ & (422) \end{aligned}$ | 53.0 |
| SOME <br> POST- <br> SECONDARY | $\begin{aligned} & 72.2 \\ & (18) \end{aligned}$ | $\begin{gathered} 0 \\ (5) \end{gathered}$ | $\begin{aligned} & 29.4 \\ & (17) \end{aligned}$ | $\begin{aligned} & 64.0 \\ & (25) \end{aligned}$ | $\begin{aligned} & 20.0 \\ & (15) \end{aligned}$ | $\begin{aligned} & 46.3 \\ & (80) \end{aligned}$ | 39.6 |
| CERTIFI- <br> CATE OR <br> DIPLOMA | $\begin{aligned} & 72.1 \\ & (43) \end{aligned}$ | $\begin{aligned} & 23.1 \\ & (39) \end{aligned}$ | $\begin{aligned} & 3.2 \\ & (31) \end{aligned}$ | $\begin{aligned} & 77.3 \\ & (22) \end{aligned}$ | $\begin{aligned} & 10.5 \\ & (19) \end{aligned}$ | $\begin{aligned} & 39.0 \\ & (154) \end{aligned}$ | 41.4 |
| UNIVERSITY DEGREE | $\begin{aligned} & 48.3 \\ & (29) \end{aligned}$ | $\begin{aligned} & 20.8 \\ & (24) \end{aligned}$ | $\begin{aligned} & 18.0 \\ & (39) \end{aligned}$ | $\begin{aligned} & 50.0 \\ & (30) \end{aligned}$ | $\begin{aligned} & 3.5 \\ & (29) \end{aligned}$ | $\begin{aligned} & 27.8 \\ & (151) \end{aligned}$ | 30.9 |
| CRUDE RATE | $\begin{aligned} & 74.9 \\ & (167) \end{aligned}$ | $\begin{aligned} & 28.7 \\ & (164) \end{aligned}$ | $\begin{aligned} & 19.6 \\ & (184) \end{aligned}$ | $\begin{aligned} & 70.0 \\ & (163) \end{aligned}$ | $\begin{aligned} & 19.4 \\ & (129) \end{aligned}$ | $\begin{aligned} & 43.0 \\ & (807) \end{aligned}$ |  |
| ADJUSTED RATE | 80.1 | 28.5 | 19.9 | 73.8 | 22.7 |  | 48.1 |

*Rates standardized against the "Women Homemakers" group.

TABLE 6.37 USE OF MOTOR VEHICLE SEAT BELTS
MEN IN THE PAID LABOUR FORCE, AGED 25-44 YEARS
Percentage of Men Reporting NO USE of a Seat Belt as a Passenger or Driver*

|  | ATLANTIC <br> REGIONS | QUEBEC | ONTARIO | PRAIRIES | B.C. | CRUDE <br> RATE | ADJUSTED <br> RATE |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :---: |
| SOME <br> SECONDARY <br> EDUCATION | 90.1 <br> $(151)$ | 34.2 <br> $(120)$ | 35.6 <br> $(104)$ | 63.6 <br> $(143)$ | 35.9 <br> $(78)$ | 55.9 <br> $(596)$ | 53.4 |
| SOME <br> POST- <br> SECONDARY | 84.6 <br> $(13)$ | 30.0 <br> $(20)$ | 14.3 <br> $(21)$ | 57.9 <br> $(19)$ | 21.7 <br> $(23)$ | 37.5 <br> $(96)$ | 43.9 |
| CERTIFI- <br> CATE OR <br> DIPLOMA | 57.8 | 21.4 | 6.7 | $(19)$ | $(28)$ | $(30)$ | $(25)$ | | 15.4 |
| :--- |
| $(26)$ |

*Rates standardized against the "Women Homemakers" group.

## FEMALE PREVENTIVE BEHAVIOURS

Female preventive scores were developed from reported rates of breast self-examination, professional breast examination and pap smears. A score of '3' indicated that all three tests had been done within an appropriate period of time while at the other end of the spectrum, a score of '9' indicated that the woman had not been exposed to any of these screening measures. Women were not included in this section of the study unless they had answered all three questions. The rate for non-responses was in fact quite low (8.9\%). As can be seen from Table 4.17, many women do avail themselves of these screening tests.

Overall, the best three predictors of variance were region, marital status and education. The overall mean score for female preventive behaviours was 4.43. The subgroups reporting the highest mean scores and therefore the least screening were single women (group mean 4.89), women in Quebec (4.86) and women living in large families (4.71). The subgroups reporting the best scores were women living in B.C. (4.08) and Alberta (4.10) and women with post-secondary education (4.06). Table 6.38 shows the subgroup means for each of the top three predictors, their beta scores and the percentage of variance in the scores explained by the model.

TABLE 6.38 PREDICTORS OF FEMALE PREVENTIVE BEHAVIOURS AMONG WOMEN SUBJECTS

| $\begin{aligned} & \text { REGION } \\ & \text { (beta: } 0.18 \text { ) } \end{aligned}$ | $\begin{aligned} & \text { GROUP } \\ & \text { MEAN } \end{aligned}$ | MARITAL STATUS (beta:0.13) | $\begin{aligned} & \text { GROUP } \\ & \text { MEAN } \end{aligned}$ | EDUCATION <br> (beta:0.11) | GROUP MEAN |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Atlantic | 4.61 | Not |  | Secondary | 4.57 |
| Quebec | 4.86 | married | 4.89 | Post Sec. | 4.06 |
| Ontario | 4.41 |  |  | Diploma | 4.12 |
| Prairies | 4.06 | Married | 4.35 | Degree | 4.22 |
| B.C. | 4.01 |  |  |  |  |

Income, while not one of the top three predictors, exhibited a direct relationship with preventive behaviours. The higher the income group the better the group mean score.

Of the three components of the preventive score, rap smears were the most often reported to have been done within two years (73\%); professional breast examinations were done within two years for $66.7 \%$ of the women. Regular breast self-examination was reported by only $47 \%$ of the women while $25 \%$ reported that they never performed breast self-examination.

When the workforce womens group was standardized against the homemaker group on the basis of region and education (see Tables 6.39-40), the rates for never or almost never availing themselves of these screening measures (that is scores of 7-9) were significantly higher ( $p<.002$ ) for homemakers ( $14.3 \%$ ) than for workforce women ( $9.8 \%$ ). Part of this difference between the scores could be further reduced if the groups were standardized also for education because education was positively associated with use of screening measures and the levels of education were slightly higher for the workforce group. However, standardizing on three variables was found to produce too many very small cell sizes.

In other studies (Ellerton and Smillie, 1986) the reported level of breast self-examination was lower (17-18\%) than in this study but similar predictors, namely marital status and education were identified. Ellerton and Smillie also found a slightly higher rate for breast self-examination among workforce women than among housewives. A telephone survey of Edmontonian women (Kurji and MacDonald, 1986) found that $73 \%$ of women
reported having a professional breast examination in the previous year and $66 \%$ reported a pap smear during that time. The rates for this study which recorded behaviours during the previous two years were $67 \%$ and $73 \%$ respectively. In the Edmonton study, $37 \%$ reported regular breast self-examination and $10 \%$ reported never having had a pap smear In this study $47 \%$ reported performing breast self-examinations and $6.5 \%$ never having had a pap smear.

TABLE 6.39 FEMALE PREVENTIVE BEHAVIOURS
WOMEN HOMEMAKERS, AGED 25-44 YEARS
Percentage of Women Rarely or Never Having a Pap Smear and Breast Examinations

|  | ATLANTIC <br> REGIONS | QUEBEC | ONTARIO | PRAIRIES | B.C. | CRUDE <br> RATE | ADJUSTED <br> RATE |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :---: |
| NOT <br> MARRIED | 33.3 <br> $(42)$ | 44.0 <br> $(25)$ | 14.3 <br> $(21)$ | 21.4 <br> $(14)$ | 16.7 <br> $(12)$ | 29.0 <br> $(114)$ | 27.6 |
| MARRIED | 17.6 <br> $(443)$ | 20.4 <br> $(397)$ | 13.5 <br> $(334)$ | 6.3 <br> $(397)$ | 4.7 <br> $(212)$ | 13.4 <br> $(1783)$ | 13.5 |
| CRUDE <br> RATE | 19.0 <br> $(485)$ | 21.8 <br> $(422)$ | 13.5 <br> $(355)$ | 6.8 <br> $(411)$ | 5.4 <br> $(224)$ | 14.3 <br> $(1897)$ |  |
| ADJUSTED <br> RATE | 18.6 | 21.8 | 13.5 | 7.2 | 5.4 |  | 14.3 |

TABLE 6.40 FEMALE PREVENTIVE BEHAVIOURS
WOMEN IN THE PAID LABOUR FORCE, AGED 25-44 YEARS
Percentage of Women Rarely or Never Having a Pap Smear and Breast Examinations*

|  | ATLANTIC <br> REGIONS | QUEBEC | ONTARIO | PRAIRIES | B.C. | CRUDE <br> RATE | ADJUSTED <br> RATE |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :---: |
| NOT <br> MARRIED | 23.3 <br> $(73)$ | 25.3 <br> $(91)$ | 11.8 <br> $(93)$ | 14.3 <br> $(91)$ | 9.3 <br> $(54)$ | 17.2 <br> $(402)$ | 18.0 |
| MARRIED | 11.6 <br> $(241)$ | 12.7 <br> $(228)$ | 9.8 <br> $(255)$ | 5.8 <br> $(241)$ | 3.4 <br> $(148)$ | 9.1 <br> $(1113)$ | 9.3 |
| CRUDE <br> RATE | 14.3 <br> $(314)$ | 16.3 <br> $(319)$ | 10.3 <br> $(348)$ | 8.1 <br> $(332)$ | 5.0 <br> $(202)$ | 11.2 <br> $(1515)$ |  |
| ADJUSTED |  |  |  |  |  |  |  |
| RATE | 12.3 | 13.5 | 9.9 | 6.3 | 3.7 |  | 9.8 |

*Rates standardized against the "Women Homemakers" group.

## COMPOSITE RISK SCORE

Each subject's composite risk score was generated by combining their scores for:
i. cigarette smoking
ii. alcohol consumption
iii. physical activity
iv. companionship
v. life change events
vi. motor vehicle travel
vii. hormone pills (women only).

Each of these variables had been scored '1' through '3' (hormone pills was dichotomized, ' 1 ' for "No" and ' 3 ' for "Yes") and when the scores were summed, for women there was a possible range of 7 (the least risk score) to 21 (the maximum risk score), and for men, 6 to 18. (See Chapter Four for
more details on the development of composite risk scores.) No composite risk was generated for subjects who had missing scores on any one of these variables. For women this excluded $60 \%$ of subjects, and for men almost $74 \%$.

Among the female subjects, the top three predictors of composite risk scores were family size, education and marital status. The model overall was able to explain $7.7 \%$ of the variation in the women's scores. Table 6.41 shows the subgroup means for each of the top three predictors.

TABLE 6.41 PREDICTORS OF COMPOSITE RISK SCORES FOR WOMEN SUBJECTS

| FAMILY SIZE <br> (beta:0.15) | GROUP MEAN | EDUCATION <br> (beta:0.11) | $\begin{aligned} & \text { GROUP } \\ & \text { MEAN } \end{aligned}$ | MARITAL STATUS (beta:0.07) | $\begin{aligned} & \text { GROUP } \\ & \text { MEAN } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| One person | 13.6 | Secondary | 12.28 | Not |  |
| 2-3 people | 12.63 | Post Sec. | 12.90 | Married | 13.21 |
| 4-6 people | 11.98 | Diploma | 12.16 |  |  |
| 7 or more | 11.58 | Degree | 12.25 | Married | 12.15 |

The two workforce groups were standardized against the homemaker group on the basis of family size and education and the rates calculated for both the highest and lowest risk groups. (See Tables 6.42-47.) In each instance, the rates for the homemaker group were better than for the workforce groups. Ten and a half percent ( $10.5 \%$ ) of homemakers compared with $11.8 \%$ (n.s.) of workforce women and $30.5 \%$ ( $p>.002$ ) of workforce men reported composite risk scores in the highest category. More homemakers (23\%) than workforce women (15.9\%), p>.002) or workforce men (8.6\%, p>.002) reported low (good) composite risk scores.

Education was inversely related to health risk exposure in workforce men with high risk scores (Table 6.44) and positively related for workforce
women with low risk scores (Table 6.46). For the other groups, the association was more mixed. In all three groups, the number of missing scores was positively related to education. There was nearly a $20 \%$ difference in missing score rates between the lowest education group and the highest and workforce men had the highest rate of non-respondents overall. Therefore caution may be needed in interpreting the adjusted rates if it were not for the fact that on 4 out of 6 individual items, the lowest education group was shown to have significantly higher rates of risk related behaviour. TABLE 6.42 POOR COMPOSITE RISK SCORES WOMEN HOMEMAKERS, AGED 25-44 YEARS

Percentage of Women with the Highest Risk Scores (15-21) in the Summary Measure of Risk Behaviours

|  | FAMILY OF 1 | FAMILY OF 2-3 | FAMILY <br> OF 4-6 | FAMILY OF 7+ | $\begin{aligned} & \text { CRUDE } \\ & \text { RATE } \end{aligned}$ | ADJUSTED RATE |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SOME <br> SECONDARY <br> EDUCATION | $\begin{aligned} & 0 \\ & (1) \end{aligned}$ | $\begin{aligned} & 17.2 \\ & (116) \end{aligned}$ | $\begin{aligned} & 10.2 \\ & (391) \end{aligned}$ | $\begin{aligned} & 0 \\ & (34) \end{aligned}$ | $\begin{aligned} & 11.1 \\ & (542) \end{aligned}$ | 11.4 |
| SOME POSTSECONDARY | $\begin{aligned} & 0 \\ & (0) \end{aligned}$ | $\begin{aligned} & 26.7 \\ & (15) \end{aligned}$ | $\begin{aligned} & 18.0 \\ & (39) \end{aligned}$ | $\begin{aligned} & 0 \\ & (3) \end{aligned}$ | $\begin{aligned} & 19.3 \\ & (57) \end{aligned}$ | 19.1 |
| CERTIFICATE OR DIPLOMA | $\begin{aligned} & 0 \\ & (0) \end{aligned}$ | $\begin{aligned} & 6.8 \\ & (44) \end{aligned}$ | $\begin{aligned} & 4.5 \\ & (89) \end{aligned}$ | $\begin{aligned} & 0 \\ & (4) \end{aligned}$ | $\begin{aligned} & 5.1 \\ & (137) \end{aligned}$ | 4.8 |
| UNIVERSITY DEGREE | $\begin{aligned} & 0 \\ & (1) \end{aligned}$ | $\begin{aligned} & 11.8 \\ & (17) \end{aligned}$ | $\begin{aligned} & 6.8 \\ & (44) \end{aligned}$ | $\begin{aligned} & 0 \\ & (1) \end{aligned}$ | $\begin{aligned} & 7.9 \\ & (63) \end{aligned}$ | 7.6 |
| $\begin{aligned} & \text { CRUDE } \\ & \text { RATE } \end{aligned}$ | $\begin{aligned} & 0 \\ & (2) \end{aligned}$ | $\begin{aligned} & 15.1 \\ & (192) \end{aligned}$ | $\begin{aligned} & 9.6 \\ & (563) \end{aligned}$ | $\begin{aligned} & 0 \\ & (42) \end{aligned}$ | $\begin{aligned} & 10.4 \\ & (799) \end{aligned}$ |  |
| $\begin{aligned} & \text { ADJUSTED } \\ & \text { RATE } \end{aligned}$ | 0 | 15.7 | 9.5 | 0 |  | 10.5 |

TABLE 6.43 POOR COMPOSITE RISK SCORES
WOMEN IN THE PAID LABOUR FORCE, AGED 25-44 YEARS
Percentage of Women with the Highest Risk Scores (15-21) in the Summary Measure of Risk Behaviours ${ }_{*}$

|  | FAMILY <br> OF 1 | FAMILY <br> OF 2-3 | FAMILY <br> OF 4-6 | FAMILY <br> OF 7+ | CRUDE <br> RATE | ADJUSTED <br> RATE |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| SOME <br> SECONDARY <br> EDUCATION | 42.3 <br> $(26)$ | 18.2 <br> $(165)$ | 10.1 <br> $(159)$ | 16.7 <br> $(12)$ | 16.3 <br> $(362)$ | 12.5 |
| SOME <br> POST- <br> SECONDARY | 57.1 <br> $(14)$ | 27.5 <br> $(40)$ | 14.3 <br> $(21)$ | 0 <br> $(0)$ | 29.3 <br> $(75)$ | 16.9 |
| CERTIFICATE | 24.0 |  |  |  |  |  |
| OR | 14.8 | 4.2 | 0 | 12.6 | 6.6 |  |
| DIPLOMA | $(61)$ | $(48)$ | $(1)$ | $(135)$ |  |  |
| UNIVERSITY <br> DEGREE | 27.6 | 15.9 | 12.5 <br> $(24)$ | 0 <br> $(1)$ | 17.6 <br> $(142)$ | 12.7 |
| CRUDE <br> RATE | 35.1 | 18.1 |  |  |  |  |
| $(94)$ | $(354)$ | 9.5 | 14.3 | 17.2 |  |  |
| ADJUSTED <br> RATE | 39.0 | 18.1 | 9.5 | 11.3 |  | 11.8 |

*Rates standardized against the "Women Homemakers" group.

It is interesting to note that it was only the rates for men with good scores that were negatively associated with family size. In all other instances there was some level of protection in living in a big family.

TABLE 6.44 POOR COMPOSITE RISK SCORES
MEN IN THE PAID LABOUR FORCE, AGED 25-44 YEARS
Percentage of Men with the Highest Risk Scores (13-18) in the Summary Measure of Risk Behaviours*

|  | FAMILY $\text { OF } 1$ | FAMILY OF 2-3 | FAMILY OF 4-6 | FAMILY <br> OF 7+ | $\begin{aligned} & \text { CRUDE } \\ & \text { RATE } \end{aligned}$ | ADJUSTED RATE |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SOME <br> SECONDARY <br> EDUCATION | $\begin{aligned} & 31.3 \\ & (32) \end{aligned}$ | $\begin{aligned} & 38.9 \\ & (180) \end{aligned}$ | $\begin{aligned} & 31.2 \\ & (285) \end{aligned}$ | $\begin{aligned} & 47.41 \\ & (19) \end{aligned}$ | $\begin{aligned} & 34.5 \\ & (516) \end{aligned}$ | 34.0 |
| SOME <br> POST- <br> SECONDARY | $\begin{aligned} & 55.6 \\ & (9) \end{aligned}$ | $\begin{aligned} & 46.0 \\ & (37) \end{aligned}$ | $\begin{aligned} & 30.0 \\ & (30) \end{aligned}$ | $\begin{aligned} & 0 \\ & (1) \end{aligned}$ | $\begin{aligned} & 40.3 \\ & (77) \end{aligned}$ | 32.3 |
| CERTIFICATE OR DIPLOMA | $\begin{aligned} & 42.9 \\ & (14) \end{aligned}$ | $\begin{aligned} & 23.9 \\ & (46) \end{aligned}$ | $\begin{aligned} & 21.3 \\ & (47) \end{aligned}$ | $\begin{aligned} & 0 \\ & (0) \end{aligned}$ | $\begin{aligned} & 25.2 \\ & (107) \end{aligned}$ | 20.9 |
| UNIVERSITY DEGREE | $\begin{aligned} & 45.5 \\ & (33) \end{aligned}$ | $\begin{aligned} & 20.2 \\ & (109) \end{aligned}$ | $\begin{aligned} & 21.1 \\ & (90) \end{aligned}$ | $\begin{aligned} & 0 \\ & (2) \end{aligned}$ | $\begin{aligned} & 23.9 \\ & (234) \end{aligned}$ | 19.9 |
| $\begin{aligned} & \text { CRUDE } \\ & \text { RATE } \end{aligned}$ | $\begin{aligned} & 40.9 \\ & (88) \end{aligned}$ | $\begin{aligned} & 32.3 \\ & (372) \end{aligned}$ | $\begin{aligned} & 28.1 \\ & (452) \end{aligned}$ | $\begin{aligned} & 40.9 \\ & (22) \end{aligned}$ | $\begin{aligned} & 31.3 \\ & (934) \end{aligned}$ |  |
| $\begin{aligned} & \text { ADJUSTED } \\ & \text { RATE } \end{aligned}$ | 36.1 | 35.3 | 28.6 | 32.1 |  | 30.5 |

*Rates standardized against the "Women Homemakers" group.

TABLE 6.45 GOOD COMPOSITE RISK SCORES WOMEN HOMEMAKERS AGED 25-44 YEARS

Percentage of Women with the Lowest Risk Scores (7-10) in the Summary Measure of Risk Behaviours

|  | FAMILY OF 1 | FAMILY <br> OF 2-3 | FAMILY OF 4-6 | FAMILY <br> OF 7+ | CRUDE RATE | ADJUSTED RATE |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SOME <br> SECONDARY <br> EDUCATION | $\begin{array}{r} 100.0 \\ (1) \end{array}$ | $\begin{aligned} & 13.8 \\ & (116) \end{aligned}$ | $\begin{aligned} & 25.1 \\ & (391) \end{aligned}$ | $\begin{aligned} & 29.4 \\ & (34) \end{aligned}$ | $\begin{aligned} & 23.1 \\ & (542) \end{aligned}$ | 22.8 |
| SOME POSTSECONDARY | $\begin{aligned} & 0 \\ & (0) \end{aligned}$ | $\begin{aligned} & 13.3 \\ & (15) \end{aligned}$ | $\begin{aligned} & 18.0 \\ & (39) \end{aligned}$ | $\begin{aligned} & 33.3 \\ & (3) \end{aligned}$ | $\begin{aligned} & 17.5 \\ & (57) \end{aligned}$ | 17.6 |
| CERTIFICATE OR DIPLOMA | $\begin{aligned} & 0 \\ & (0) \end{aligned}$ | $\begin{aligned} & 11.4 \\ & (44) \end{aligned}$ | $\begin{aligned} & 25.8 \\ & (89) \end{aligned}$ | $\begin{aligned} & 75.0 \\ & (4) \end{aligned}$ | $\begin{aligned} & 22.6 \\ & (137) \end{aligned}$ | 24.9 |
| UNIVERSITY DEGREE | $\begin{aligned} & 0 \\ & (1) \end{aligned}$ | $\begin{aligned} & 23.5 \\ & (17) \end{aligned}$ | $\begin{aligned} & 27.3 \\ & (44) \end{aligned}$ | $\begin{aligned} & 0 \\ & (1) \end{aligned}$ | $\begin{aligned} & 25.4 \\ & (63) \end{aligned}$ | 24.9 |
| CRUDE RATE | $\begin{aligned} & 50.0 \\ & (2) \end{aligned}$ | $\begin{aligned} & 14.1 \\ & (192) \end{aligned}$ | $\begin{aligned} & 24.9 \\ & (563) \end{aligned}$ | $\begin{aligned} & 33.3 \\ & (42) \end{aligned}$ | $\begin{aligned} & 22.8 \\ & (799) \end{aligned}$ |  |
| ADJUSTED RATE | 67.8 . | 14.1 | 24.8 | 35.1 |  | 23.0 |

TABLE 6.46 GOOD COMPOSITE RISK SCORES
WOMEN IN THE PAID LABOUR FORCE, AGED 25-44 YEARS
Percentage of Women with the Lowest Risk Scores (7-10) in the Summary Measure of Risk Behaviours*

|  | FAMILY <br> OF 1 | FAMILY <br> OF 2-3 | FAMILY <br> OF 4-6 | FAMILY <br> OF 7+ | CRUDE <br> RATE | ADJUSTED <br> RATE |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| SOME <br> SECONDARY <br> EDUCATION | 7.7 <br> $(26)$ | 9.7 <br> $(165)$ | 14.5 <br> $(159)$ | 33.3 <br> $(12)$ | 12.4 <br> $(362)$ | 14.3 |
| SOME <br> POST- <br> SECONDARY | 0 <br> $(14)$ | 7.5 <br> $(40)$ | 19.1 <br> $(21)$ | 0 <br> $(0)$ | 9.3 <br> $(75)$ | 15.2 |
| CERTIFICATE | 12.0 <br> OR <br> DIPLOMA | 11.5 <br> $(61)$ | 16.7 <br> $(48)$ | 100.0 | 14.1 | 19.8 |
| UNIVERSITY <br> DEGREE | 10.3 <br> $(29)$ | 17.1 <br> $(88)$ | 25.0 <br> $(24)$ | 0 <br> $(1)$ | 16.9 <br> $(142)$ | 21.7 |
| CRUDE <br> RATE | 8.5 | 11.6 |  |  |  |  |
| $(94)$ | $(354)$ | 16.3 <br> $(252)$ | 35.7 | 13.3 | $(14)$ |  |
| ADJUSTED <br> RATE | 8.1 | 10.4 | 16.0 | 39.7 |  | 15.9 |

\#Rates standardized against the "Women Homemakers" group.

TABLE 6.47 GOOD COMPOSITE RISK SCORES
MEN IN THE PAID LABOUR FORCE, AGED 25-44 YEARS
Percentage of Men with the Lowest Risk Scores (6-9) in the Summary Measure of Risk Behaviours ${ }_{*}$

|  | FAMILY <br> OF 1 | FAMILY <br> OF 2-3 | FAMILY <br> OF 4-6 | FAMILY <br> OF 7+ | CRUDE <br> RATE | ADJUSTED <br> RATE |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| SOME <br> SECONDARY <br> EDUCATION | 15.6 <br> $(32)$ | 7.2 <br> $(180)$ | 7.0 <br> $(285)$ | 0 <br> $(19)$ | 7.4 <br> $(516)$ | 6.7 |
| SOME <br> POST- <br> SECONDARY | 0 <br> $(9)$ | 10.8 <br> $(37)$ | 13.3 <br> $(30)$ | 100.0 <br> $(1)$ | 11.7 <br> $(77)$ | 17.3 |
| CERTIFICATE <br> OR <br> DIPLOMA | 0 | $(14)$ | $(46)$ | 10.6 <br> $(47)$ | 0 |  |
| $(0)$ | 9.4 | 10.1 |  |  |  |  |
| UNIVERSITY <br> DEGREE | 3.0 <br> $(33)$ | 16.5 <br> $(109)$ | 13.3 <br> $(90)$ | 0 | $(2)$ | 13.3 <br> $(234)$ |
| CRUDE <br> RATE | 6.8 <br> $(88)$ | 10.8 <br> $(372)$ | 9.1 | 13.4 |  |  |
| ADJUSTED <br> RATE | 10.8 | 8.8 | 8.6 | 7.6 | 9.4 |  |

* Rates standardized against the "Women Homemakers" group.


### 6.2 HEALTH STATUS INDICATORS

CHRONIC HEALTH PROBLEMS
Almost $50 \%$ of the study group reported at least one chronic health problem. Table 4.23 shows the distribution of chronic health problems across the study group.

Multiple classification analysis of the female data showed the composite risk score, family size and region to be the best predictors of problems. Table 6.48 shows the subgroup means for each of these top three predictors, their beta scores and the percentage of variance in the scores explained by the model.

TABLE 6.48 PREDICTORS OF CHRONIC HEALTH PROBLEMS AMONG WOMEN SUBJECTS

| COMPOSITE RISK SCORE (beta:0.12) | $\begin{aligned} & \text { GROUP } \\ & \text { MEAN } \end{aligned}$ | FAMILY SIZE <br> (beta:0.11) | GROUP MEAN | REGION (beta: 0.10 ) | GROUP MEAN |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 7-10 (good) | 1.07 | One person | 1.31 | Atlantic | 1.05 |
| 11-14 | 1.05 | 2-3 people | 1.13 | Quebec | 0.88 |
| 15-20 (poor) | 1.03 | 4-6 people | 0.97 | Ontario | 1.09 |
|  |  | 7 or more | 0.85 | Prairies | 1.06 |
|  |  |  |  | B.C. | 1.21 |
| grand | 1.05 | percentage | ance | plained 4.1 |  |

Across all subgroups, those exhibiting the highest average number of chronic health problems were from a family of one (group mean 1.31), not married (1.23) and living in British Columbia (1.21). The groups with lowest average number of chronic problems were subjects from large families (0.85), those with a university degree ( 0.88 ) and women living in Quebec ( 0.88 ).

When the workforce groups were standardized against the homemaker group on the basis of composite risk score and family size, workforce men were shown to have the significantly lower rate of chronic health problems ( $44.8 \%$, $p<.002$ for both comparisons) than either of the women's groups for whom the rates were very similar ( $57.8 \%$ and $57.2 \%$ ). (See Tables 6.49-51.) A negative association between health risk scores and chronic health problems among women can be seen in Table 6.49. Such an association is hard to explain unless one believes that people more likely to become health conscious (that is, reduce their risk exposure) after they have experienced some failure in
their health. Among the workforce women (Table 6.50) changes in health risk scores appear to have little effect on the number of chronic health problems reported. For men (Table 6.51), there is at least a lower rate of chronic health problems among those reporting the least risk exposure. This might lead one to ask the question, "Are the health risk factors used in this study reflective of the types of health risks to which men are most commonly exposed and are there some others that would more accurately address the health risks faced by women?"

One other study which included chronic health problems (WHO, 1973) reported much lower rates for problems (13-18\%). This probably reflects only a difference in the definitions used. As can be seen from the list in Table 4.23, conditions such as skin allergies and hayfever have been included in the C.H.S. question regarding chronic conditions whereas the World Health Organization study did not define "long standing health problems or chronic illness" or offer any examples of what might have been expected. The context of the question could have led respondents to consider only functionally limiting conditions.

The higher rate of chronic problems among women subjects living in British Columbia is of interest (Table 6.48). Older people (with and without health problems) are known to retire to the West Coast because the climate is easier but this does not explain a high rate of chronic problems among women aged 25 - 44. An examination of other C.H.S. data showing the types of health problems reported by these women may guide further speculation but cannot address the issue of causality.

Also of interest is the association between dollars per person spent on physician services in the provinces and the average number of health problems reported in each region. British Columbia and Ontario reported the highest average number of problems (see Table 6.48) and also have the highest level of spending per person on physician services (Health and Welfare Canada, 1987). The Atlantic provinces and Quebec spend less on physician services and in this study the subjects from these areas also reported fewer health problems. This again raises the issue of causality which cannot be addressed in this study.

TABLE 6.49 CHRONIC HEALTH PROBLEMS
WOMEN HOMEMAKERS, AGED 25-44 YEARS
Percentage of Women Reporting One or More Chronic Health Problems

|  | FAMILY <br> OF 1 | FAMILY <br> OF 2-3 | FAMILY <br> OF 4-6 | FAMILY <br> OF 7+ | CRUDE <br> RATE | ADJUSTED <br> RATE |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| COMPOSITE <br> RISK <br> $7-10$ (LO) | (0) | 66.7 <br> $(27)$ | 68.8 <br> $(141)$ | 57.1 <br> $(14)$ | 67.6 <br> $(182)$ | 67.0 |
| COMPOSITE <br> RISK <br> $11-14$ | (2) | 62.5 <br> $(136)$ | 54.6 <br> $(370)$ | 50.0 <br> $(28)$ | 56.2 <br> $(536)$ | 55.8 |
| COMPOSITE <br> RISK <br> 15-21 (HI) | 0 | $(0)$ | 58.6 <br> $(29)$ | 51.9 <br> $(54)$ | 47.6 <br> $(42)$ | 52.0 <br> $(125)$ |
| CRUDE <br> RATE | 0 | 62.5 | 57.9 | 50.0 | 58.0 | 52.9 |
| ADJUSTED <br> RATE | 0 | 62.8 | 57.3 | 51.2 |  | 57.8 |

TABLE 6.50 CHRONIC HEALTH PROBLEMS
WOMEN IN THE PAID LABOUR FORCE, AGED 25-44 YEARS
Percentage of Women Reporting One or More Chronic Health Problems*

|  | FAMILY <br> OF 1 | FAMILY <br> OF 2-3 | FAMILY <br> OF 4-6 | FAMILY <br> OF 7+ | CRUDE <br> RATE | ADJUSTED <br> RATE |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| COMPOSITE <br> RISK <br> $7-10$ (LO) | 87.5 <br> $(8)$ | 61.0 <br> $(41)$ | 53.7 <br> $(41)$ | 60.0 <br> $(5)$ | 60.0 <br> $(95)$ | 56.0 |
| COMPOSITE <br> RISK <br> $11-14$ | 66.0 <br> $(53)$ | 61.0 <br> $(251)$ | 59.0 <br> $(188)$ | 42.9 <br> $(7)$ | 60.5 <br> $(499)$ | 57.9 |
| COMPOSITE <br> RISK <br> 15-21 (HI) | 75.8 <br> $(33)$ | 56.3 <br> $(64)$ | 64.0 <br> $(25)$ | 0 <br> $(2)$ | 62.1 <br> $(124)$ | 55.9 |
| CRUDE <br> RATE | 71.3 <br> $(94)$ | 60.1 |  |  |  |  |
| $(356)$ | 58.7 | 42.9 | 60.7 | $(254)$ | $(14)$ | $(718)$ |

Rates standardized against the "Women Homemakers" group.

TABLE 6.51 CHRONIC HEALTH PROBLEMS
MEN IN THE PAID LABOUR FORCE, AGED 25-44 YEARS
Percentage of Men Reporting One or More Chronic Health Problems*

|  | FAMILY <br> OF 1 | FAMILY <br> OF 2-3 | FAMILY <br> OF 4-6 | FAMILY <br> OF 7+ | CRUDE <br> RATE | ADJUSTED <br> RATE |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| COMPOSITE <br> RISK <br> $7-10$ (LO) | 50.0 <br> $(6)$ | 50.0 <br> $(40)$ | 36.6 <br> $(41)$ | 0 <br> $(1)$ | 43.2 <br> $(88)$ | 36.0 |
| COMPOSITE <br> RISK <br> 11-14 | 87.1 <br> $(31)$ | 53.3 <br> $(212)$ | 47.5 <br> $(274)$ | 41.7 <br> $(12)$ | 52.0 <br> $(529)$ | 48.3 |
| COMPOSITE <br> RISK <br> 15-21 (HI) | 56.8 |  |  |  |  |  |
| $(37)$ | 52.3 |  |  |  |  |  |
| $(111)$ | 40.7 | 31.7 | 44.8 <br> $(128)$ | 42.4 |  |  |
| CRUDE <br> RATE | 68.9 <br> $(74)$ | 52.6 | 44.0 | 33.3 | 48.7 |  |
| ADJUSTED <br> RATE | 74.6 | 52.4 | 44.1 | 31.2 |  | 44.8 |

*Rates standardized against the "Women Homemakers" group.

## HEALTH OPINION SCORES

The health opinion scores (possible range $16-48$, see Table 4.26) are a measure of psychophysiological symptoms of anxiety. The lower the score, the more frequently subjects reported experiencing the symptoms. (See Chapter Four for details of questions and scoring.) The mean score for all female subjects was 41.5. Table 4.27 shows the distribution of the scores across the male and female study groups.

Multiple classification analysis of the female data showed composite risk scores, marital status and education to be the best predictors of the women's health opinion scores. Table 6.52 shows the subgroup means for each of these predictors. The percentage of variance in the scores explained by the model was $11.13 \%$.

TABLE 6.52 PREDICTORS OF HEALTH OPINION SCORES AMONG WOMEN SUBJECTS


Across all the female subjects, the subgroups with the poorest scores were those in the highest lifestyle risk group (group mean 40.21), those in the lowest income quintile (40.29) and those not married (40.38). The subgroups reporting the lowest incidence of psychophysiological symptoms were those with post-secondary education (42.39), with the lowest lifestyle risk scores (42.33) and those with a university degree (42.24).

The workforce groups were standardized against the homemaker group on the basis of marital status and composite lifestyle risk scores. Thirty-five
percent (35\%) of the homemaker group reported scores in the lowest range (22-40) compared with $32.5 \%$ of workforce women and $16 \%$ ( $p>.002$ ) of workforce men. Tables 6.53-55 show the rates for each of the groups.

The significant difference between male and female scores for this variable again raises the issues of illness perceptions and behaviours; questions of personal awareness and willingness to report symptoms. For example, do scores on instruments such as this truly reflect variations in the presence of psychophysiological symptoms or are they indicators of the presence of some intervening variable(s). Several researcers (Gove \& Hughes, 1979; Waldron, 1983; Verbrugge, 1983), have attempted to address this question. Generally these studies support the contention that there are real differences in morbidity between the sexes. However, Gove and Hughes found that when one controls for marital status, living arrangements, psychiatric symptoms and nurturant role obligations, the health differences between men and women disappear.

TABLE 6.53 HEALTH OPINION SCORES
WOMEN HOMEMAKERS, AGED 25-44 YEARS
Percentage of Women with Poorest Scores in the Health Opinion Questionnaires

|  | COMPOSITE <br> RISK 7-10 <br> (LO) | COMPOSITE <br> RISK 11-14 | COMPOSITE <br> RISK 15-21 <br> (HI) | CRUDE <br> RATE | ADJUSTED <br> RATE |
| :--- | :---: | :--- | :--- | :--- | :--- |
| NOT <br> MARRIED | 75.0 <br> $(4)$ | 53.3 <br> $(15)$ | 66.7 <br> $(3)$ | 59.1 <br> $(22)$ | 59.5 |
| MARRIED | 23.5 <br> $(119)$ | 32.7 <br> $(352)$ | 68.8 <br> $(48)$ | 33.9 <br> $(519)$ | 34.0 |
| CRUDE <br> RATE | 25.2 <br> $(123)$ | 33.5 <br> $(367)$ | 68.6 <br> $(51)$ | 34.9 <br> $(541)$ |  |
| ADJUSTED <br> RATE | 25.6 | 33.5 | 68.7 |  | 35.0 |

TABLE 6.54 HEALTH OPINION SCORES
WOMEN IN THE PAID LABOUR FORCE, AGED 25-44 YEARS
Percentage of Women with Poorest Scores in the Health Opinion Questionnaires*

|  | COMPOSITE <br> RISK 7-10 <br> (LO) | COMPOSITE <br> RISK 11-14 | COMPOSITE <br> RISK 15-21 <br> (HI) | CRUDE <br> RATE | ADJUSTED <br> RATE |
| :--- | :---: | :--- | :--- | :--- | :--- |
| NOT <br> MARRIED | 22.2 <br> $(9)$ | 37.3 <br> $(75)$ | 46.0 <br> $(37)$ | 38.8 <br> $(121)$ | 34.7 |
| MARRIED | 38.6 <br> $(44)$ | 29.2 <br> $(281)$ | 40.4 <br> $(47)$ | 31.7 <br> $(372)$ | 32.4 |
| CRUDE <br> RATE | 35.9 <br> $(53)$ | $(30.9$ | 42.9 <br> $(84)$ | 33.5 <br> $(493)$ |  |
| ADJUSTED <br> RATE | 38.0 | 29.5 | 40.7 |  | 32.5 |

* Rates standardized against the "Women Homemakers" group.

TABLE 6.55 HEALTH OPINION SCORES
MEN IN THE PAID LABOUR FORCE, AGED 25-44 YEARS
Percentage of men with Poorest Scores in the Health Opinion Questionnaires*

|  | COMPOSITE <br> RISK 7-10 <br> (LO) | COMPOSITE <br> RISK 11-14 | COMPOSITE <br> RISK 15-21 <br> (HI) | CRUDE <br> RATE | ADJUSTED <br> RATE |
| :--- | :---: | :--- | :--- | :--- | :--- |
| NOT <br> MARRIED | 0 <br> $(9)$ | 31.4 <br> $(51)$ | 37.5 <br> $(32)$ | 30.4 <br> $(92)$ | 24.8 |
| MARRIED | 5.5 <br> $(55)$ | 18.3 <br> $(328)$ | 22.2 <br> $(162)$ | 18.2 <br> $(545)$ | 15.7 |
| CRUDE <br> RATE | 4.7 <br> $(64)$ | 20.1 <br> $(379)$ | 24.7 <br> $(194)$ | 19.9 |  |
| ADJUSTED <br> RATE | 5.2 | 18.8 | 22.9 |  | 16.1 |

[^9]
## AFFECT BALANCE

Affect balance scores were derived from Bradburn's measure of pleasant and unpleasant subjective states. Subjects' scores could be classified as positive, negative or neutral. Table 4.28 lists the questions used to develop subjects' affect balance scores and Table 4.29 shows the distribution of the scores for this study group.

The multiple classification analysis of the women's affect balance scores showed that subject's composite risk scores, marital status and family size were the best predictors of those scores. Table 6.56 lists the subgroup means for each of these variables. The closer the mean score is to 3 , the more subjects in the group reporting a negative affect balance.

TABLE 6.56 PREDICTORS OF AFFECT BALANCE SCORES AMONG WOMEN SUBJECTS


Among the female subjects, the subgroups with the poorest affect balance scores were unmarried women (group mean 1.62), women in the lowest income quintile (1.62) and women with the poorest lifestyle risk scores (1.63). The groups reporting most positive affect balance scores were those with the lowest lifestyle risk scores (1.39), and those with post-secondary or diploma level education (1.44). One apparently contradictory situation is the high score of the 'not married' women (1.62) and the low score of women living alone (1.49). Since unmarried (including divorced, widowed and


#### Abstract

separated) women with families appear in the first group but not in the second, one has to surmise that as a group these women report many more negative affect balance scores.


The workforce groups were standardized against the women's homemaker group on the basis of lifestyle risk scores and marital status. Because a very limited number of subjects had negative scores, the rates for positive scores were compared. Tables 6.57-59 show the rates for each of the three subject groups. Fewer homemaker women reported positive scores (53.5\%) compared with the workforce women's ( $56.2 \%$, n.s.) and the workforce men's groups (58.5\%, $\mathrm{p}<.05$ ). The tables demonstrate the constantly positive effect of marriage and the positive relationship with good lifestyle risk scores.

When the very small groups of subjects with negative affect balance scores were compared, controlling only for composite health risk scores, there was no significant difference between the two women's groups (homemakers $4.9 \%$, workforce women $3.0 \%$ ) but significantly fewer men ( $1.2 \%$, $p<.01$ ) had negative affect scores. (See Table 6.60)

These results are in keeping with other findings which suggest that the traditional female role as homemaker and the absence of a partner are associated with higher psychosocial stress (Cleary \& Mechanic, 1983; Gore \& Mangione, 1983).

TABLE 6.57 AFFECT BALANCE
WOMEN HOMEMAKERS, AGED 25-44 YEARS
Percentage of Women Recording a Positive Affect Balance Score*

|  | COMPOSITE <br> RISK 7-10 <br> (LO) | COMPOSITE <br> RISK 11-14 | COMPOSITE <br> RISK 15-21 <br> (HI) | CRUDE <br> RATE | ADJUSTED <br> RATE |
| :--- | :---: | :--- | :--- | :--- | :--- |
| NOT <br> MARRIED | 50.0 <br> $(6)$ | 38.9 <br> $(18)$ | 0 <br> $(6)$ | 33.3 <br> $(30)$ | 37.5 |
| MARRIED | 62.0 <br> $(171)$ | 52.5 <br> $(497)$ | 48.6 <br> $(72)$ | 54.3 <br> $(740)$ | 54.3 |
| CRUDE <br> RATE | 61.6 <br> $(177)$ | 52.0 <br> $(515)$ | 44.9 <br> $(78)$ | 53.5 <br> $(770)$ |  |
| ADJUSTED <br> RATE | 61.5 | 52.0 | 46.7 |  | 53.7 |

TABLE 6.58 AFFECT BALANCE
WOMEN IN THE PAID LABOUR FORCE, AGED 25-44 YEARS
Percentage of Women Recording a Positive Affect Balance Score*

|  | COMPOSITE <br> RISK 7-10 <br> (LO) | COMPOSITE <br> RISK 11-14 | COMPOSITE <br> RISK 15-21 <br> (HI) | CRUDE <br> RATE | ADJUSTED <br> RATE |
| :--- | :---: | :--- | :--- | :--- | :--- |
| NOT <br> MARRIED | 55.6 <br> $(18)$ | 46.7 <br> $(107)$ | 43.6 <br> $(55)$ | 46.7 <br> $(180)$ | 48.5 |
| MARRIED | 70.1 <br> $(77)$ | 54.1 <br> $(379)$ | 41.8 <br> $(67)$ | 54.9 <br> $(523)$ | 56.5 |
| CRUDE <br> RATE | 67.4 <br> $(95)$ | 52.5 <br> $(486)$ | 42.6 <br> $(122)$ | 52.8 <br> $(703)$ |  |
| ADJUSTED <br> RATE | 69.6 | 53.8 | 41.9 |  | 56.2 |

[^10]TABLE 6.59 AFFECT BALANCE
MEN IN THE PAID LABOUR FORCE, AGED 25-44 YEARS
Percentage of Men Recording a Positive Affect Balance Score*

|  | COMPOSITE <br> RISK 7-10 <br> (LO) | COMPOSITE <br> RISK 11-14 | COMPOSITE <br> RISK 15-21 <br> (HI) | CRUDE <br> RATE | ADJUSTED <br> RATE |
| :--- | :--- | :--- | :--- | :--- | :--- |
| NOT <br> MARRIED | 45.5 <br> $(11)$ | 59.2 <br> $(76)$ | 35.3 <br> $(51)$ | 49.3 <br> $(138)$ | 53.6 |
| MARRIED | 71.1 <br> $(76)$ | 56.0 <br> $(455)$ | 47.9 <br> $(238)$ | 55.0 <br> $(769)$ | 58.7 |
| CRUDE <br> RATE | 67.8 | 56.5 <br> $(87)$ | 45.7 <br> $(289)$ | 54.1 <br> $(907)$ |  |
| ADJUSTED <br> RATE | 70.1 | 56.2 | 47.4 |  | 58.5 |

TABLE 6.60 AFFECT BALANCE
ALL SUBJECTS, AGED 25-44 YEARS
Percentage of All Subjects Recording a Negative Affect Balance Score*

| GROUP | COMPOSITE <br> RISK 7-10 <br> (LO) | COMPOSITE <br> RISK 11-14 | COMPOSITE <br> RISK 15-21 <br> (HI) | CRUDE <br> RATE | ADJUSTED <br> RATE |
| :--- | :---: | :---: | :---: | :---: | :---: |
| HOMEMAKERS | 2.3 <br> $(177)$ | 3.3 <br> $(515)$ | 9.0 <br> $(78)$ | 4.9 <br> $(770)$ | 4.9 |
| WORKFORCE <br> WOMEN | 3.2 <br> $(95)$ | 2.7 <br> $(486)$ | 4.1 <br> $(122)$ | 3.0 <br> $(703)$ | 3.0 |
| WORKFORCE <br> MEN | 0 |  |  |  |  |
| $(87)$ |  |  |  |  |  |

* Rates standardized against the "Women Homemakers" group.


### 6.3 HEALTH CARE CONSEQUENCES

## DISABILITY DAYS

The number of disability days reported by the subjects was the number of days during a two week period on which they experienced any level of decreased activity as a result of their health. Table 4.30 lists the questions used to generate the scores and Table 4.31 shows the distribution of the scores across the subject groups.

Multiple classification analysis of the female scores using the intervening variables shown in Figure 4.3 showed that number of health problems, health opinion scores and composite lifestyle risk scores were the best predictors of the number of disability days. Table 6.61 shows the subgroup means for each of these top three predictors, their beta scores and the percentage of variance in the scores explained by the model.

TABLE 6.61 PREDICTORS OF DISABILITY DAYS AMONG WOMEN SUBJECTS

| HEALTH PROBLEMS (beta:0.32) | $\begin{aligned} & \text { GROUP } \\ & \text { MEAN } \end{aligned}$ | HEALTH OPINION (beta:0.22) | GROUP MEAN | COMPOSITE RISK (beta:0.16) | GROUP MEAN |
| :---: | :---: | :---: | :---: | :---: | :---: |
| No problems | 0.0 | 22-40 (poorer) | 0.67 | 7-10(better) | 0.57 |
| One problem | 0.48 | 41-44 | 0.39 | 11-14 | 0.36 |
| > one problem | 1.06 | 45-48 (better) | 0.19 | 15-20 | 0.69 |

Among the female study group, the subgroups with the greatest number of disability days were those with more than one chronic health problem (group mean 1.06 disability days), those with negative affect balance scores (average 0.76 days) and those with some post-secondary education ( 0.72 days). The subgroups with the lowest average number of disability days were women with no chronic health problems (reporting no disability days), those with high health opinion scores ( 0.19 days) and those in the second quintile for family income (0.23).

The workforce groups were standardized against the homemaker group on the basis of health opinion scores and numbers of chronic health problems. Tables 6.62-64 show the rates for each of the groups. A higher percentage of women in the workforce ( $15.7 \%$ compared with $12.5 \%$ of homemakers and $12.7 \%$ of men) rerorted one or more disability days but the differences were not significant at the . 05 level.

One explanation for a higher number of disability days among the workforce women might be that the separation of the workplace from the resting place, makes a reduced activity day more identifiable for persons in the workforce. Especially with proxy reporting, it is possible that reduced days for homemakers could go unrecognized at least by anyone other than the homemaker. Alternatively one could argue on the basis of Gove's fixed role study (1984) that if a fixed and well defined role has a health protective effect, then women in the workforce may be suffering the consequences of having conflicting roles (nurturant homemaker versus employee). The similarly low rates for homemakers and men in the workforce further support Gove's hypothesis. The work of Meissner (1975) and similar studies by other researchers show that the total work week for women in the workforce is much longer than for men and women homemakers. The longer work days and fewer hours of rest may lead to a higher illness rate.

TABLE 6.62 DISABILITY DAYS WOMEN HOMEMAKERS, AGED 25-44 YEARS

Percentage of Women Reporting One or More Disability Days in the Previous Two Weeks

|  | O CHRONIC <br> HEALTH <br> PROBLEMS | 1 CHRONIC <br> HEALTH <br> PROBLEM | $>$ 1 CHRONIC <br> HEALTH <br> PROBLEM | CRUDE <br> RATE | ADJUSTED <br> RATE |
| :--- | :---: | :---: | :---: | :---: | :--- |
| BETTER <br> H.0.S. <br> $45-48$ | 15.0 <br> $(80)$ | 14.3 <br> $(49)$ | 29.4 <br> $(17)$ | 16.4 <br> $(146)$ | 18.6 |
| H.0.S. <br> $41-44$ | 0 |  |  |  |  |
| $(105)$ |  |  |  |  |  |

TABLE 6.63 DISABILITY DAYS
WOMEN IN THE PAID LABOUR FORCE, AGED 25-44 YEARS
Percentage of Women Reporting One or More Disability Days in the Previous Two Weeks*

|  | 0 CHRONIC HEALTH PROBLEMS | 1 CHRONIC HEALTH PROBLEM | > 1 CHRONIC HEALTH PROBLEM | $\begin{aligned} & \text { CRUDE } \\ & \text { RATE } \end{aligned}$ | $\begin{aligned} & \text { ADJUSTED } \\ & \text { RATE } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{aligned} & \text { BETTER } \\ & \text { H. } 0 . \mathrm{S} . \\ & 45-48 \end{aligned}$ | $\begin{aligned} & 0 \\ & (55) \end{aligned}$ | $18.8$ | $\begin{aligned} & 50.0 \\ & (22) \end{aligned}$ | $\begin{aligned} & 15.6 \\ & (109) \end{aligned}$ | 19.3 |
| $\begin{aligned} & \text { H. } 0 . S . \\ & 41-44 \end{aligned}$ | $\begin{aligned} & 0 \\ & (92) \end{aligned}$ | $\begin{aligned} & 18.4 \\ & (76) \end{aligned}$ | $\begin{aligned} & 34.1 \\ & (44) \end{aligned}$ | $\begin{aligned} & 13.7 \\ & (212) \end{aligned}$ | 14.9 |
| $\begin{aligned} & \text { POORER } \\ & \text { H.O.S. } \\ & 16-40 \end{aligned}$ | $\begin{aligned} & 0 \\ & (51) \end{aligned}$ | $\begin{aligned} & 14.3 \\ & (56) \end{aligned}$ | $\begin{aligned} & 37.3 \\ & (59) \end{aligned}$ | $\begin{aligned} & 18.1 \\ & (166) \end{aligned}$ | 14.5 |
| $\begin{aligned} & \text { CRUDE } \\ & \text { RATE } \end{aligned}$ | $\begin{aligned} & 0 \\ & (198) \end{aligned}$ | $\begin{aligned} & 17.1 \\ & (164) \end{aligned}$ | $\begin{aligned} & 38.4 \\ & (125) \end{aligned}$ | $\begin{aligned} & 15.6 \\ & (487) \end{aligned}$ |  |
| ADJUSTED RATE | 0 | 17.1 | 38.7 |  | 15.7 |

Rates standardized against the "Women Homemakers" group.

TABLE 6.64 DISABILITY DAYS
MEN IN THE PAID LABOUR FORCE, AGED 25-44 YEARS
Percentage of Men Reporting One or More Disability Days in the Previous Two Weeks*

|  | O CHRONIC <br> HEALTH <br> PROBLEMS | l CHRONIC <br> HEALTH <br> PROBLEM | > I CHRONIC <br> HEALTH <br> PROBLEM | CRUDE <br> RATF | ADJUSTED <br> RATE |
| :--- | :---: | :---: | :---: | :---: | :---: |
| BETTER <br> H.0.S. <br> $45-48$ | 0 <br> $(117)$ | 14.9 <br> $(67)$ | 15.2 <br> $(33$ | 6.9 <br> $(217)$ | 8.7 |
| H.0.S. <br> $41-44$ | 0 <br> $(161)$ | 21.1 <br> $(95)$ | 34.2 <br> $(38)$ | 11.2 <br> $(294)$ | 15.7 |
| POORER <br> H.0.S. <br> $16-40$ | 0 | $(54)$ | 18.0 <br> $(39)$ | 22.2 <br> $(45)$ | 12.3 <br> $(138)$ |
| CRUDE <br> RATE | 0 | $(332)$ | 18.4 <br> $(201)$ | 32.8 | 11.6 |
| ADJUSTED <br> RATE | 0 | 18.6 | 25.8 | 10.0 <br> $(649)$ |  |

*Rates standardized against the "Women Homemakers" group.

## HEALTH PROFESSIONAL CONSULTATIONS

This score represents the number of health professional contacts that the subjects reported for a two week period, converted to an annual rate. Table 4.33 shows the distribution of consults reported by this group.

Multiple classification analysis of the female scores using the intervening variables shown in Figure 4.3, identified number of health problems, health opinion scores and the composite lifestyle scores as the best predictors of professional health consults. Table 6.65 shows the subgroup means for these predictors, their beta scores and the percentage of variance in the scores explained by the model. It is of interest, but not surprising, that women's scores for professional services (female consults) was the fourth best predictor. (See Table 6.78)

TABLE 6.65 PREDICTORS OF HEALTH PROFESSIONAL CONSULTATIONS BY WOMEN SUBJECTS

| HEALTH PROBLEMS (beta: 0.29) | GROUP MEAN | HEALTH OPINION (beta:0.19) | GROUP MEAN | COMPOSITE RISK <br> (beta:0.17) | GROUP MEAN |
| :---: | :---: | :---: | :---: | :---: | :---: |
| No problems | 3.95 | 21-40 (poorer) | 5.93 | 7-10 (better) | 5.22 |
| One problem | 6.38 | 41-44 | 5.63 | 11-14 | 5.75 |
| > 1 problem | 7.59 | 45-48 (better) | 5.01 | 15-21 (poorer) | 6.11 |
| grand mean 5.7 - percentage variance explained 21.8 |  |  |  |  |  |

The subgroup reporting more than one chronic health problem reported the highest number of health consultations (7.6). Other high groups were those from the Atlantic Provinces, those with more than one disability day, with a university degree or from a family of two or three (all reporting an average of 6.4 consultations for a year).

The subgroups reporting low numbers of health professional contacts were people from large families (2.84), people with no chronic health problems (3.95) and women from the lowest income quintile (4.24 visits).

The two workforce groups were standardized against the homemaker group on the basis of health problems and health opinion. Tables 6.66-68 show the rates for the three groups of subjects reporting more than five health professional contacts in a year. The rate for workforce women was greater than for the homemaker group ( $39.3 \%$ compared with $35.4 \%$ ), but the difference was not significant at the . 05 level. The men's rate ( $26.9 \%, \mathrm{p}<.002$ ) for five or more consults was considerably lower than the homemakers' rate (35.4\%).

In keeping with their higher rate of health consultations, workforce women had a higher rate for female health related professional services (preventive as well as prescriptive for hormones), had more disability days and as can be seen from the next section, also reported a greater use of medications. This might lead one to believe that they are less healthy, however homemaker and workforce women reported similar numbers of chronic health problems. An examination of the relationship between number of health problems and consultations (see Tables 6.66-68) shows that it is workforce women with more than one chronic problem who use professional health services the most. There is no apparent explanation for this. Medication taking, although higher for workforce women than for either of the other two groups does not rise disproportionately for women with more than one chronic health problem. The C.H.S. data on reasons for health professional consultations (not included in this study) might provide some explanations. The inverse relationship between health opinion and consultations among homemaker women may be a reflection of visits associated with childbearing. For both workforce groups, a poorer health opinion is associated with a higher number of consultations.

TABLE 6.66 HEALTH PROFESSIONAL CONSULTATIONS WOMEN HOMEMAKERS, AGED 25-44 YEARS

Percentage of Women Reporting More than Five Health Professional Consultations in the Previous Year

|  | 0 CHRONIC HEALTH PROBLEMS | 1 CHRONIC HEALTH PROBLEM | > 1 CHRONIC HEALTH PROBLEM | $\begin{aligned} & \text { CRUDE } \\ & \text { RATE } \end{aligned}$ | ADJUSTED RATE |
| :---: | :---: | :---: | :---: | :---: | :---: |
| BETTER <br> H.O.S. <br> 45-48 | $\begin{aligned} & 26.5 \\ & (67) \end{aligned}$ | $\begin{aligned} & 40.9 \\ & (44) \end{aligned}$ | $\begin{aligned} & 61.1 \\ & (18) \end{aligned}$ | $\begin{aligned} & 36.4 \\ & (129) \end{aligned}$ | 40.5 |
| H.O.S. | $\begin{aligned} & 27.6 \\ & (105) \end{aligned}$ | $\begin{aligned} & 36.6 \\ & (71) \end{aligned}$ | $\begin{aligned} & 41.7 \\ & (60) \end{aligned}$ | $\begin{aligned} & 33.9 \\ & (236) \end{aligned}$ | 34.3 |
| POORER <br> H.O.S. <br> 16-40 | $\begin{aligned} & 16.0 \\ & (50) \end{aligned}$ | $\begin{aligned} & 44.2 \\ & (52) \end{aligned}$ | $\begin{aligned} & 45.1 \\ & (71) \end{aligned}$ | $\begin{aligned} & 36.4 \\ & (173) \end{aligned}$ | 32.8 |
| CRUDE RATE | $\begin{aligned} & 24.8 \\ & (222) \end{aligned}$ | $\begin{aligned} & 40.1 \\ & (167) \end{aligned}$ | $\begin{aligned} & 45.7 \\ & (149) \end{aligned}$ | $\begin{aligned} & 35.3 \\ & (538) \end{aligned}$ |  |
| ADJUSTED RATE | 23.6 | 40.1 | 47.5 |  | 35.4 |

TABLE 6.67 HEALTH PROFESSIONAL CONSULTATIONS WOMEN IN THE PAID LABOUR FORCE, AGED 25-44 YEARS

Percentage of Women Reporting More than Five Health Professional Consultations in the Previous Year*

|  | O CHRONIC <br> HEALTH <br> PROBLEMS | l CHRONIC <br> HEALTH <br> PROBLEM | $>$ l CHRONIC <br> HEALTH <br> PROBLEM | CRUDE <br> RATE | ADJUSTED <br> RATE |
| :--- | :---: | :---: | :---: | :---: | :--- |
| BETTER <br> H.0.S. <br> $45-48$ | 14.8 <br> $(55)$ | 31.3 <br> $(32)$ | 57.9 <br> $(19)$ | 27.4 <br> $(106)$ | 31.8 |
| H.0.S. <br> $41-44$ | 28.6 <br> $(91)$ | 40.2 <br> $(82)$ | 65.2 <br> $(46)$ | 40.6 <br> $(219)$ | 42.3 |
| POORER <br> H.0.S. <br> $16-40$ | 23.5 <br> $(51)$ | 50.9 <br> $(55)$ | 54.4 <br> $(57)$ | 43.6 <br> $(163)$ | 40.6 |
| CRUDE <br> RATE | 23.4 <br> $(197)$ | 42.0 |  |  |  |
| $(169)$ | 59.0 |  |  |  |  |
| $(122)$ | 38.8 <br> $(488)$ |  |  |  |  |
| ADJUSTED <br> RATE | 23.7 | 41.6 | 60.0 |  | 39.3 |

* Rates standardized against the "Women Homemakers" group.

TABLE 6.68 HEALTH PROFESSIONAL CONSULTATIONS
MEN IN THE PAID LABOUR FORCE, AGED 25-44 YEARS
Percentage of Men Reporting More than Five Health Professional Consultations in the Previous Year*

|  | 0 CHRONIC HEALTH PROBLEMS | 1 CHRONIC HEALTH PROBLEM | > 1 CHRONIC HEALTH PROBLEM | $\begin{aligned} & \text { CRUDE } \\ & \text { RATE } \end{aligned}$ | ADJUSTED RATE |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{aligned} & \text { BETTER } \\ & \text { H.O.S. } \\ & 45-48 \end{aligned}$ | $\begin{aligned} & 14.5 \\ & (117) \end{aligned}$ | $\begin{aligned} & 26.9 \\ & (67) \end{aligned}$ | $\begin{aligned} & 12.5 \\ & (32) \end{aligned}$ | $\begin{aligned} & 18.1 \\ & (216) \end{aligned}$ | 17.8 |
| $\begin{aligned} & \text { H.O.S. } \\ & 41-44 \end{aligned}$ | $\begin{aligned} & 10.0 \\ & (160) \end{aligned}$ | $\begin{aligned} & 29.4 \\ & (92) \end{aligned}$ | $\begin{aligned} & 42.1 \\ & (38) \end{aligned}$ | $\begin{aligned} & 20.3 \\ & (290) \end{aligned}$ | 24.9 |
| $\begin{aligned} & \text { POORER } \\ & \text { H. O.S. } \\ & 16-40 \end{aligned}$ | $\begin{aligned} & 20.4 \\ & (54) \end{aligned}$ | $\begin{aligned} & 53.9 \\ & (39) \end{aligned}$ | $\begin{aligned} & 40.0 \\ & (35) \end{aligned}$ | $\begin{aligned} & 35.9 \\ & (128) \end{aligned}$ | 36.2 |
| $\begin{array}{\|l\|l} \text { CRUDE } \\ \text { RATE } \end{array}$ | $\begin{aligned} & 13.3 \\ & (331) \end{aligned}$ | $\begin{aligned} & 33.3 \\ & (198) \end{aligned}$ | $\begin{aligned} & 32.4 \\ & (105) \end{aligned}$ | $\begin{aligned} & 22.7 \\ & (634) \end{aligned}$ |  |
| $\begin{aligned} & \text { ADJUSTED } \\ & \text { RATE } \end{aligned}$ | 14.4 | 36.7 | 34.4 |  | 26.9 |

* Rates standardized against the "Women Homemakers" group.


## MEDICATIONS

Subjects were asked to report the variety of medications they had consumed in the previous two days. As can be seen from Table 4.34, subjects were to include every type of medication from vitamins and over-the-counter drugs, to prescribed medications.

In this model, chronic health problems, health opinion scores and composite health risk scores were the best predictors of medication consumption. Table 6.69 shows the subgroup means for each of these top three predictors, their beta scores and the percentage of variance in the scores explained by the model. The percentage of variance explained by the model was higher for medication use ( $27.5 \%$ ) than for any other variable except seat belt use (30.0\%).

TABLE 6.69 PREDICTORS OF MEDICATION USE BY WOMEN SUBJECTS

| HEALTH | GROUP | HEALTH | GROUP | RISK | GROUP |
| :---: | :---: | :---: | :---: | :---: | :---: |
| PROBLEMS | MEAN | OPINION | MEAN | SCORE | MEAN |
| (beta:0.34) |  | (beta:0.20) |  | (beta:0.18) |  |
| No problems | 0.52 | 45-48 (better) | 0.66 | 7-10 (better) | 0.78 |
| One problem | 0.88 | 41-44 | 0.85 | 11-14 | 0.82 |
| > 1 problem | 1.40 | 21-40 (poorer) | 1.04 | 15-21 (poorer) | 1.06 |
| grand mean 0.85 - percentage variance explained 27.5 |  |  |  |  |  |

Subjects reporting more than one health problem and those reporting more than one disability day also reported the highest average consumption of medications (1.4). Those with no health problems and those with a good health opinion score reported the lowest levels of medication use ( 0.52 and 0.66 respectively). The positive correlation of health risk scores with medication consumption is interesting to note although this model is unable to provide any indication of causality.

The rates of consumption of more than one medication were compared across all three groups. The two workforce populations were standardized against
the homemaker group on the basis of health problems and health opinion scores. Tables 6.70-72 show the rates for each of the study groups as well as the consistent relationships of fewer health problems and better health opinion scores with lower rates of medication consumption. It is of interest that when variations in health problems and health opinion were controlled, the men's consumption of medications was not significantly different from the homemaker women's group ( $16.6 \%$ compared with $17.8 \%$ ). The workforce women however still had a significantly higher rate of consumption than either group (24.1\%, p<.02).

These findings of higher rates for women that become nearly equal when the populations are controlled for morbidity, are similar to reports in the literature (Verbrugge, 1982). The higher rate of medication consumption among workforce women compared with homemaker women could not however be validated against reports in the literature. In one study (Jennings, Mazaik and McKinlay, 1984) the use of tranquilizers was highest among the unemployed (18\%) and lowest among the employed women (10\%) with homemakers (14\%) in the middle. The level of medication taking by workforce men is nearly the same as for homemaker women, yet their number of health professional consultations are significantly ( $p<.002$ ) lower. Does this mean that men use more over-the-counter drugs than women? The inability of this study to distinguish between preventive and curative drug consumption has to be recognized in the interpretation of this study's findings.

TABLE 6.70 REGULAR TAKING OF MEDICATIONS
WOMEN HOMEMAKERS, AGED 25-44 YEARS
Percentage of Women Reporting the Regular Taking of One or More Medication

|  | 0 CHRONIC HEALTH PROBLEMS | 1 CHRONIC HEALTH PROBLEM | > 1 CHRONIC HEALTH PROBLEM | $\begin{aligned} & \text { CRUDE } \\ & \text { RATE } \end{aligned}$ | ADJUSTED RATE |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{aligned} & \text { BETTER } \\ & \text { H. } 0 . \mathrm{S} . \\ & 45-48 \end{aligned}$ | $\begin{aligned} & 2.9 \\ & (68) \end{aligned}$ | $\begin{aligned} & 13.6 \\ & (44) \end{aligned}$ | $\begin{aligned} & 33.3 \\ & (15) \end{aligned}$ | $\begin{aligned} & 10.2 \\ & (127) \end{aligned}$ | 14.6 |
| $\begin{aligned} & \text { H. } 0 . S . \\ & 41-44 \end{aligned}$ | $\begin{aligned} & 6.7 \\ & (105) \end{aligned}$ | $\begin{aligned} & 15.5 \\ & (71) \end{aligned}$ | $\begin{aligned} & 26.2 \\ & (61) \end{aligned}$ | $\begin{aligned} & 14.4 \\ & (237) \end{aligned}$ | 14.7 |
| $\begin{aligned} & \text { POORER } \\ & \text { H. } 0 . S . \\ & 16-40 \end{aligned}$ | $\begin{aligned} & 14.8 \\ & (54) \end{aligned}$ | $\begin{aligned} & 23.1 \\ & (52) \end{aligned}$ | $\begin{aligned} & 39.7 \\ & (73) \end{aligned}$ | $\begin{aligned} & 27.4 \\ & (179) \end{aligned}$ | 24.2 |
| $\begin{aligned} & \text { CRUDE } \\ & \text { RATE } \end{aligned}$ | $\begin{aligned} & 7.5 \\ & (227) \end{aligned}$ | $\begin{aligned} & 17.4 \\ & (167) \end{aligned}$ | $\begin{aligned} & 33.6 \\ & (149) \end{aligned}$ | $\begin{aligned} & 17.7 \\ & (543) \end{aligned}$ |  |
| ADJUSTED RATE | 8.5 | 17.6 | 32.3 |  | 17.8 |

TABLE 6.71 REGULAR TAKING OF MEDICATIONS WOMEN IN THE PAID LABOUR FORCE, AGED 25-44 YEARS

Percentage of Women Reporting the Regular Taking of One or More Medication*

|  | 0 CHRONIC HEALTH PROBLEMS | 1 CHRONIC HEALTH PROBLEM | > 1 CHRONIC HEALTH PROBLEM | $\begin{aligned} & \text { CRUDE } \\ & \text { RATE } \end{aligned}$ | ADJUSTED RATE |
| :---: | :---: | :---: | :---: | :---: | :---: |
| BETTER <br> H.O.S. <br> 45-48 | $\begin{aligned} & 9.1 \\ & (55) \end{aligned}$ | $\begin{aligned} & 18.8 \\ & (32) \end{aligned}$ | $\begin{aligned} & 40.9 \\ & (22) \end{aligned}$ | $\begin{aligned} & 18.4 \\ & (109) \end{aligned}$ | 20.8 |
| $\begin{aligned} & \text { H.O.S. } \\ & 41-44 \end{aligned}$ | $\begin{aligned} & 9.8 \\ & (92) \end{aligned}$ | $\begin{aligned} & 25.3 \\ & (83) \end{aligned}$ | $\begin{aligned} & 47.8 \\ & (46) \end{aligned}$ | $\begin{aligned} & 23.5 \\ & (221) \end{aligned}$ | 25.0 |
| $\begin{aligned} & \text { POORER } \\ & \text { H.0.S. } \\ & 16-40 \end{aligned}$ | $\begin{aligned} & 17.7 \\ & (51) \end{aligned}$ | $\begin{aligned} & 25.0 \\ & (56) \end{aligned}$ | $\begin{aligned} & 37.3 \\ & (59) \end{aligned}$ | $\begin{aligned} & 27.1 \\ & (166) \end{aligned}$ | 25.3 |
| $\begin{aligned} & \text { CRUDE } \\ & \text { RATE } \end{aligned}$ | $\begin{aligned} & 11.6 \\ & (198) \end{aligned}$ | $\begin{aligned} & 24.0 \\ & (171) \end{aligned}$ | $\begin{aligned} & 41.7 \\ & (127) \end{aligned}$ | $\begin{aligned} & 23.6 \\ & (496) \end{aligned}$ |  |
| ADJUSTED RATE | 12.2 | 23.7 | 42.7 |  | 24.1 |

[^11]TABLE 6.72 REGULAR TAKING OF MEDICATIONS
MEN IN THE PAID LABOUR FORCE, AGED 25-44 YEARS
Percentage of Men Reporting the Regular Taking of One or More Medication*

|  | O CHRONIC <br> HEALTH <br> PROBLEMS | L CHRONIC <br> HEALTH <br> PROBLEM | > I CHRONIC <br> HEALTH <br> PROBLEM | CRUDE <br> RATE | ADJUSTED <br> RATE |
| :--- | :---: | :---: | :---: | :---: | :--- |
| BETTER <br> H.0.S. <br> $45-48$ | 1.7 <br> $(117)$ | 14.9 <br> $(67)$ | 24.2 <br> $(33)$ | 9.2 <br> $(217)$ | 12.0 |
| H.0.S. <br> $41-44$ | 2.5 <br> $(161)$ | 20.0 <br> $(95)$ | 36.8 <br> $(38)$ | 12.6 <br> $(294)$ | 17.3 |
| POORER <br> H.0.S. <br> $16-40$ | 7.4 <br> $(54)$ | 25.6 <br> $(39)$ | 29.4 <br> $(34)$ | 18.9 <br> $(127)$ | 19.1 |
| CRUDE <br> RATE | 3.0 <br> $(332)$ | 19.4 <br> $(201)$ | 30.5 <br> $(105)$ | 12.7 <br> $(638)$ |  |
| ADJUSTED <br> RATE | 3.9 | 20.7 | 31.4 |  | 16.6 |

* Rates standardized against the "Women Homemakers" group.


## HOSPITALIZATION

Subjects had been asked to report the number of nights in the previous year that they had been a patient in a hospital, a nursing home or a convalescent home. Table 4.32 shows the distribution of the number of nights of hospitalization for the study group. It should not be surprising that for this childbearing age group, the women reported more hospitalization than the men.

Multiple classification analysis of the women's data showed disability days, chronic health problems and health opinion scores to be the best predictors of hospitalization. Table 6.73 shows the subgroup means for each of these variables, their beta scores and the percentage of variance in the scores explained by the model.

TABLE 6.73 PREDICTORS OF NIGHTS IN HOSPITAL FOR WOMEN SUBJECTS

| DISABILITY DAYS <br> (beta: 0.20 ) | $\begin{aligned} & \text { GROUP } \\ & \text { MEAN } \end{aligned}$ | HEALTH PROBLEMS (beta: 0.17) | Group MEAN | HEALTH OPINION (beta: 0.13) | GROUP MEAN |
| :---: | :---: | :---: | :---: | :---: | :---: |
| None | 0.73 | None | 0.50 | 45-48 (better) | 0.71 |
| One | 1.49 | One | 1.03 | 41-44 | 0.74 |
| $>1$ | 1.32 | $>1$ | 1.02 | 22-40 (poorer) | 0.97 |

Among the female subjects, the subgroups reporting the highest average number of nights in hospital were those with one or more disability days (averages 1.49 and 1.32 ) and those in the second percentile for family income (average 1.14 nights). As seen in Table 6.73 there was a positive correlation between disability days and hospitalization.

The women's groups reporting the lowest average number of nights in hospital were those that were not married (average 0.18 nights), those with a
negative affect score (average 0.32 nights) and those from a family of one (average 0.41 nights). These findings are in keeping with an earlier finding that negative affect balance is well correlated with not being married and with the argument that hospitalization for this age group of women is associated with their childbearing role (a role not usually assumed by unmarried women).

When the rates of hospitalization for the two work groups were standardized against the homemaker group on the basis of disability days and chronic health problems, the homemaker group had the highest rates. Eighteen percent (18\%) of the homemaker group reported one or more night in hospital compared with $11 \%$ ( $p<.002$ ) of workforce women and $5 \%$ ( $p<.002$ ) of workforce men. Tables $6.74-76$ show the standardized rates, as well as the hospitalization trends associated with disability days and health problems. It is interesting to note that for workforce women there was a linear association between chronic health problems and hospitalization but for the homemaker group, this association was 'U'-shaped. This observation would support the suggestion that further study should include a comparison of reasons for hospitalization among the women's groups. Higher rates of hospitalization for women regardless of occupation, is in keeping with findings of other studies (WHO, 1973; Lewis \& Lewis, 1977; Statistics Canada, 1984).

It is worthy of note that this method of assessing hospitalization neglects the use of hospital services on a day-care basis. As this form of service provision is rapidly expanding, particularly for gynaecological procedures, its use should be included in any further study of hospital service use.

TABLE 6.74 NIGHTS IN HOSPITAL
WOMEN HOMEMAKERS, AGED 25-44 YEARS
Percentage of Women Reporting Any Nights in Hospital in the Previous Year

|  | O CHRONIC <br> HEALTH <br> PROBLEMS | L CHRONIC <br> HEALTH <br> PROBLEM | > I CHRONIC <br> HEALTH <br> PROBLEM | CRUDE <br> RATE | ADJUSTED <br> RATE |
| :--- | :--- | :--- | :--- | :--- | :--- |
| NO <br> DISABILITY <br> DAYS | (585) | 21.2 <br> $(368)$ | 17.0 <br> $(283)$ | 17.6 <br> $(1236)$ | 17.6 |
| ONE <br> DISABILITY <br> DAY | 0 <br> $(0)$ | 44.0 <br> $(25)$ | 24.1 <br> $(54)$ | 30.4 <br> $(79)$ | 19.9 |
| DISABILITY <br> DAY | 0 <br> $(0)$ | 50.0 <br> $(24)$ | 27.8 <br> $(36)$ | 36.7 <br> $(60)$ | 22.7 |
| CRUDE <br> RATE | 15.6 <br> $(585)$ | 24.2 <br> $(417)$ | 19.0 <br> $(373)$ | 19.1 <br> $(1375)$ |  |
| ADJUSTED <br> RATE | 14.0 | 23.8 | 17.8 |  | 18.0 |

TABLE 6.75 NIGHTS IN HOSPITAL
WOMEN IN THE PAID LABOUR FORCE, AGED 25-44 YEARS
Percentage of Women Reporting any Nights in Hospital in the Previous Year*

|  | O CHRONIC <br> HEALTH <br> PROBLEMS | 1 CHRONIC <br> HEALTH <br> PROBLEM | $>1$ CHRONIC <br> HEALTH <br> PROBLEM | CRUDE <br> RATE | ADJUSTED <br> RATE |
| :--- | :---: | :---: | :---: | :--- | :--- |
| NO <br> DISABILITY <br> DAYS | 8.4 <br> $(452)$ | 12.3 <br> $(268)$ | 15.5 <br> $(193)$ | 11.1 <br> $(913)$ | 11.5 |
| ONE <br> DISABILITY <br> DAY | 0 <br> $(0)$ | 8.9 <br> $(45)$ | 6.9 <br> $(58)$ | 7.8 <br> $(103)$ | 4.6 |
| DISABILITY <br> DISYS | 0 <br> $(0)$ | 17.1 <br> $(35)$ | 18.9 <br> $(37)$ | 18.1 <br> $(72)$ | 10.4 |
| CRUDE <br> RATE | 8.4 <br> $(452)$ | 12.4 <br> $(348)$ | 14.2 <br> $(288)$ | 11.2 <br> $(1088)$ |  |
| ADJUSTED <br> RATE | 7.6 | 12.3 | 15.2 |  | 11.1 |

* Rates standardized against the "Women Homemakers" group.

TABLE 6.76 NIGHTS IN HOSPITAL
MEN IN THE PAID LABOUR FORCE, AGED 25-44 YEARS
Percentage of Men Reporting Any Nights in Hospital in the Previous Year*

|  | O CHRONIC <br> HEALTH <br> PROBLEMS | 1 CHRONIC <br> HEALTH <br> PROBLEM | > I CHRONIC <br> HEALTH <br> PROBLEM | CRUDE <br> RATE | ADJUSTED <br> RATE |
| :--- | :--- | :--- | :--- | :--- | :--- |
| NO <br> DISABILITY <br> DAYS | 2.8 <br> $(1108)$ | 7.0 <br> $(503)$ | 6.1 <br> $(229)$ | 4.4 <br> $(1840)$ | 5.0 |
| ONE <br> DISABILITY <br> DAY | 0 <br> $(0)$ | 7.8 <br> $(47)$ | 9.8 <br> $(51)$ | 4.1 <br> $(98)$ | 5.0 |
| DISABILITY <br> DISA <br> DAYS | 0 <br> $(0)$ | 13.8 <br> $(29)$ | 26.3 <br> $(19)$ | 18.8 <br> $(48)$ | 11.3 |
| CRUDE <br> RATE | 2.8 <br> $(1108)$ | 6.0 <br> $(579)$ | 7.7 <br> $(299)$ | 4.7 <br> $(1986)$ |  |
| ADJUSTED <br> RATE | 2.5 | 7.3 | 7.2 |  | 5.2 |

[^12]
## SUMMARY

Using the model shown in Figure $4.3, \mathrm{M} . \mathrm{C} . \mathrm{A}$. were used to identify the variables most able to explain variations in health risk behaviour, health status and health care consequence scores. Tables $6.77-78$ summarize the results which have been discussed in detail throughout the chapter. The tables reflect the ability of all the predictor variables provided in the model to explain variations in the dependent variable scores. In Table 6.77, using cigarette smoking as an example, the reader can read down the chart and identify that,

- the model was able to explain only $3.9 \%$ of the variation in smoking scores,
- there were 3176 female subjects who reported on their smoking behaviour,
- the mean score for all the subjects was 2.10 with a range of possible scores from 'l' for non-smokers through to ' 3 ' for current regular smokers,
- education was the best predictor (beta score 0.16) out of the seven demographic variables shown in Figure 4.3 and economic responsibility the worst (beta score 0.02 ).

Among the health risk behaviours, (Table 6.77 ) the model was most effective at explaining variations in seat belt use (30\% explained) with region of residence (beta 0.52 ) being the best predictor. Physical activity was the health risk behaviour least able to be explained by the model (3\% explained) and along the bottom row of the chart it can be seen from the ' 0.00 ' beta scores that in some instances some of the predictor variables showed no correlation with the dependent scores.

Table 6.78 shows the results of M.C.A. for health status and health care consequence scores. The model was most effective in explaining variations in disability days (19.8\% explained), health professional consultations (21.8\% explained) and the regular taking of medications (27.5\% explained). Number
of chronic health problems was a strong predictor (beta 0.3 approx) for disability days, health professional consultations and medication use. From the bottom row of the chart it can again be seen that there were some predictors with beta scores of ' $0.00^{\prime}$ showing no correlation with the dependent variable scores.

Tables 6.79-81 summarize the rates found in the standardized tables. For all the variables except Affect Balance ${ }^{1}$, the rates for poor health risk behaviour, poor health status or high use of the health care system were compared. Higher rates indicate a higher percentage of subjects engaging in the behaviour. Using smoking as an example (see Table 6.79), the rates for regular or occasional smokers were compared across the three subject groups which had been standardized on the basis of the top two predictors, namely Education and Marital Status. For smoking there were no significant difference among the three groups. Across the various health risk behaviours, the workforce women did differ significantly from the homemaker group, as seen by the asterisks, sometimes being exposed to less risk (companionship and screening for breast and cervical cancers) but more often exposed to more risk (less exercise, more life events, regular taking of hormone pills and less frequent use of seat belts). In health status (Table 6.80) the two groups of women were very similar although if there was a trend, it was for workforce women to report slightly better health than their homemaker counterparts. In health care related behaviours (Table 6.81) except for hospitalization, workforce women reported more - more disability days, more contact with health professionals and more use of medications.

1 For Affect Balance, because of the low number of negative affect scores, the percentages of positive affect scores were compared. Therefore, a higher score is considered desirable.

Generally, although men reported much higher consumption of alcohol and more motor vehicle travel (often without seat belts) they reported better health and less use of the health care system.

### 6.4 DEMOGRAPHIC VARIABLES

In summarizing the results it is also interesting to separate out each of the demographic variables and identify behaviours for which it served as a good predictor. Tables $6,82-88$ show the demographic variables, the dependent variables for which they are one of the top three predictors and the subgroup means for each category of the demographic variable. For example, from Table 6.82 it can be seen that region was one of the top three predictors for all health risk behaviours except companionship, life change events and composite risk scores. It was also one of the top three predictors for chronic health problems and this is included in the table. Throughout Tables 6.82-88 low subgroup means are more desirable except for health opinion scores. B.C. had the lowest and therefore the best scores for four out of the seven health risk behaviour variables for which region was a top predictor. On the other hand B.C. subjects reported the greatest number of chronic health problems. The data in this study do not provide any indication of why this strange juxtaposition of healthier behaviours with poorer health status should exist. Tables 6.83 and 6.85 show a consistently protective effect of being married and living in a large family. Table 6.84 shows only a weak trend toward better scores with higher education but those with secondary education only, consistently report higher risk behaviours.

Tables 6.86-88 show other demographic predictors which feature as one of the top three predictors for one or more variable. The three variables associated with economic responsibility (Table 6.86 ) should not be
surprising. Women with economic responsibility for their family are less likely to want to have more children, may do a large part of the family driving as well as driving to and from work and as women in the workforce have more opportunity to experience life change events.

Table 6.88 showing that more people report spending leisure time alone between October and December is interesting, especially as December tends to be a time of increased social activity. The model does not provide any explanation but one could speculate that December celebrations may be more family centred and there may be less casual socializing at night school classes and clubs etc.

The following chapter provides further comment on the findings reported in Chapter Six and attempts to put them in perspective with regard to the health of women in the workforce. Implications for further study also are discussed.

TABLE 6.77 MULTIPLE CLASSIFICATION ANALYSIS OF HEALTH RISK BEHAVIOURS FOR ALL FEMALE SUBJECTS

| DEPENDENT variable | CIGarette SHORING | ALCOHOL CONSUMPTION | HORMONE PILIS | PHYSICAL <br> activity | COMPANION- SHIP | LIFE CHANGE EVENTS | FEMALE PREVENTIVE | MOTOR vehicle. travel. | $\begin{aligned} & \text { USE OF } \\ & \text { SEAT } \\ & \text { BELTTS } \end{aligned}$ | COMPOSITE RISK SCORES |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| PERCENTAGE EXPLAINED | 3.9 | 4.7 | 4.2 | 3.0 | 3.2 | 3.6 | 7.0 | 4.0 | 30.0 | 7.7 |
| - Of SUBNECTS | 3176 | 2395 | 3273 | 2973 | 3262 | 3239 | 3261 | 2451 | 1724 | 1462 |
| MFAN SCORE RANGE | $\begin{aligned} & 2.10 \\ & (1-3) \end{aligned}$ | $\begin{aligned} & 2.04 \\ & (1-3) \end{aligned}$ | $\begin{aligned} & 1.34 \\ & (1-3) \end{aligned}$ | $\begin{aligned} & 1.99 \\ & (1-3) \end{aligned}$ | $\begin{aligned} & 1.53 \\ & (1-3) \end{aligned}$ | $\begin{aligned} & 1.27 \\ & (1-3) \end{aligned}$ | $\begin{aligned} & 4.43 \\ & (3-9) \end{aligned}$ | $\begin{aligned} & 1.98 \\ & (1-3) \end{aligned}$ | $\begin{aligned} & 1.9 \\ & (1-3) \end{aligned}$ | $\begin{aligned} & 12.31 \\ & (7-21) \end{aligned}$ |
| PREDICTMR <br> VARIABLES IN <br> ORDER OF <br> THEIR <br> ABIIITY TO <br> EXPLAIN <br> VARIATION IN <br> THE DEPENDENT <br> VARIABLE. | Educa- <br> tion 0.16 <br> Beta  | Family  <br> Income Beta <br> 0.12  |  <br> Famt1y  <br> Size Beta <br> 0.10  | Survey $\quad$Beta <br> 0.11 | Month of <br> Survey <br> 0.10 |   <br> Fam11y  <br> Size Beta <br>  0.12  | RegionBeta <br> 0.18 |   <br> Family Beta <br> Income 0.08 | Region $\begin{array}{r}\text { Beta } \\ 0.52\end{array}$ | $\begin{array}{\|ll\|} \hline \text { Femily } & \text { Beta } \\ \text { Size } & 0.15 \\ \hline \end{array}$ |
|  | $\begin{array}{\|ll\|} \hline \begin{array}{ll} \text { Marital } \\ \text { Status } & 0.10 \\ \hline \end{array} \\ \hline \end{array}$ | Region 0.09 | Region 0.08 | Restion 0.11 | $\begin{array}{\|ll\|} \hline \text { Family } & \\ \text { Size } & 0.08 \\ \hline \end{array}$ | Famlly <br> Income 0.10 | Marital  <br> Status 0.13 | Economic <br> Respons. 0.08 | Educa- <br> tion 0.14 | Educa- <br> tion 0.11 |
|  |  | Marital  <br> Status 0.08 | $\begin{array}{\|l\|} \text { Econoinc } \\ \text { Respons. } 0.07 \end{array}$ | Educa- tion 0.06 | Marital  <br> Status 0.08 | Economic | $\begin{array}{ll}\text { Educa- } \\ \text { tion } & 0.11\end{array}$ |  | $\begin{array}{\|ll\|} \hline \left.\begin{array}{ll} \text { Marital } & \\ \text { Status } & 0.06 \\ \hline \end{array} \right\rvert\, \end{array}$ | Marital |
|  | Region 0.07 <br> Month of | $\begin{array}{\|l\|l\|} \hline \text { Status } & 0.08 \\ \hline \text { Family } & \\ \hline \end{array}$ | $\left\lvert\, \frac{\text { Respons. } 0.07}{\text { Month of }}\right.$ | $\text { Eion } \quad 0.06$ | Status 0.08 | Respons. 0.07 | $\left\|\frac{\text { tion }}{\text { FBmily }} 0.11\right\|$ | $\frac{\text { Region }}{\text { Family }}$ | $\left\lvert\, \begin{array}{ll} \text { Status } & 0.06 \\ \hline \text { Family } \end{array}\right.$ | $\left\lvert\, \begin{array}{\|ll\|} \text { Status } & 0.07 \\ \hline \text { Family } & \end{array}\right.$ |
|  | Surver 0.02 | Size 0.07 | Surver 0.05 | Size 0.05 | Resion 0.04 | Region 0.06 | Income 0.06 | Size 0.06 | Size 0.06 | Income 0.06 |
|  | $\begin{array}{\|ll\|} \hline \begin{array}{l} \text { Family } \\ \text { Size } \end{array} & 0.02 \\ \hline \end{array}$ | $\begin{array}{\|l\|} \hline \text { Month of } \\ \text { Surver } \end{array}$ | $\begin{array}{\|cc\|} \hline \text { Educa- } \\ \text { tion } & 0.04 \\ \hline \end{array}$ | Economic <br> Respons. 0.04 | Family  <br> Income 0.03 | $\begin{array}{cc} \begin{array}{c} \text { Educa- } \\ \text { tion } \end{array} & 0.04 \\ \hline \end{array}$ | Economic <br> Respons. 0.05 | $\begin{array}{\|cc\|} \hline \text { Educa- } \\ \text { tion } & 0.04 \\ \hline \end{array}$ | $\begin{array}{\|ll\|} \hline \text { Family } & \\ \text { Incorme } & 0.05 \\ \hline \end{array}$ | Region 0.05 |
|  | Famxly Income 0.020 | Educs- <br> tion | Famlly  <br> Income 0.03 | Famlly  <br> Income 0.03 | Educa- <br> tion 0.02 | Month of Surver 0.00 | Family  <br> Size 0.04 | Marital  <br> Status 0.02 | Month of Survey 0.05 | Economic <br> Respons. 0.03 |
|  | $\begin{array}{\|l\|} \hline \text { Economic } \\ \text { Respons. } 0.02 \\ \hline \end{array}$ | Economic <br> Respons. 0.00 | $\begin{array}{\|l\|} \hline \text { Marital } \\ \hline \text { Status } \\ \hline \end{array}$ | $\begin{array}{\|l\|} \hline \begin{array}{l} \text { Marital } \\ \text { Status } \end{array} \\ \hline \end{array}$ | $\begin{array}{\|l\|} \hline \text { Economic } \\ \text { Respons. } 0.00 \\ \hline \end{array}$ | $\begin{array}{\|ll\|} \hline \text { Marital } \\ \text { Status } & 0.00 \\ \hline \end{array}$ | $\begin{array}{\|l\|} \hline \begin{array}{l} \text { Month of } \\ \text { Surver } \end{array} \\ \hline \end{array}$ | $\begin{array}{\|l\|} \hline \begin{array}{l} \text { Month of } \\ \text { Survey } \end{array} \\ \hline \end{array}$ | $\begin{array}{\|l\|} \hline \text { Economic } \\ \text { Respons. } 0.03 \\ \hline \end{array}$ | $\begin{aligned} & \begin{array}{l} \text { Month of } \\ \text { Survey } \end{array} \quad 0.03 \\ & \hline \end{aligned}$ |

TABLE 6.78 MULTIPLE CLASSIFICATION ANALYSIS OF REPORTED HEALTH STATUS AND HEALTH CARE RELATED BEHAVIOURS FOR ALL FEMALE SUBJECTS

| DEPENDENT VARIABLE | CHRONIC HEALTH PROBLEMS | $\begin{aligned} & \text { HEALTH } \\ & \text { OPINION } \end{aligned}$ | $\begin{aligned} & \text { AFFECT } \\ & \text { BALANCE } \end{aligned}$ | $\begin{aligned} & \text { DISABILITY } \\ & \text { DAYS } \end{aligned}$ | HEALTH PROFESSIONAL CONSULTS | MEDICATIONS | HOSPITALIZATION |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| PERCENTAGE EXPLAINED | 4.1 | 11.1 | 5.8 | 19.8 | 21.8 | 27.5 | 14.5 |
| - OF SUBJECTS | 1462 | 991 | 1422 | 968 | 954 | 965 | 965 |
| MEAN SCORE RANGE | $\begin{aligned} & 1.05 \\ & (0-10) \end{aligned}$ | $\begin{aligned} & 41.50 \\ & (16-48) \end{aligned}$ | $\begin{aligned} & 1.51 \\ & (1-3) \end{aligned}$ | $\begin{aligned} & 0.44 \\ & (0-14) \end{aligned}$ | $\begin{aligned} & 5.7 \\ & (0-50) \end{aligned}$ | $\begin{aligned} & 0.85 \\ & (0-4) \end{aligned}$ | $\begin{aligned} & 0.81 \\ & (0-22) \end{aligned}$ |
| PREDICTOR <br> Variables In <br> ORDER OF <br> THEIR <br> ABILITY TO <br> EXPLAIN <br> Variation in <br> THE DEPENDENT <br> Variable | Composite Beta <br> Risk Score 0.12  |   <br> Composite Beta <br> R1sk Score 0.23 | Composite Beta Risk Score 0.17 |   <br> Health Beta <br> Problems 0.32  | Heslth Beta Problems 0.29 | Health Beta Problems 0.34 |   <br> Disability <br> Days 0.20 |
|  | $\begin{array}{\|ll\|} \hline \begin{array}{l} \text { Family } \\ \text { Size } \end{array} & 0.11 \\ \hline \end{array}$ | $\begin{array}{ll} \hline \text { Marital } & \\ \text { Status } & 0.18 \\ \hline \end{array}$ | $\begin{array}{\|ll} \hline \begin{array}{l} \text { Marital } \\ \text { Status } \end{array} & 0.12 \\ \hline \end{array}$ | Health <br> Opinion 0.22 | $\begin{array}{ll} \hline \text { Health } \\ \text { Opinion } & 0.19 \\ \hline \end{array}$ | $\begin{aligned} & \text { Health } \\ & \text { Opinion } \quad 0.20 \end{aligned}$ | $\begin{array}{ll} \begin{array}{l} \text { Heslth } \\ \text { Problems } \end{array} & 0.17 \\ \hline \end{array}$ |
|  | Region 0.10 | Education 0.15 | $\begin{array}{\|ll} \hline \text { Pamily } & \\ \text { Size } & 0.09 \\ \hline \end{array}$ | $\begin{array}{ll} \hline \text { Risk } \\ \text { Score } & 0.16 \\ \hline \end{array}$ | Risk  <br> Score 0.17 | $\begin{array}{\|ll} \hline \text { Risk } & \\ \text { Score } & 0.18 \\ \hline \end{array}$ | $\begin{array}{ll} \begin{array}{l} \text { Health } \\ \text { Opinion } \end{array} & 0.13 \\ \hline \end{array}$ |
|  | Education 0.08 | Family  <br> Size 0.11 | Education 0.09 | Region 0.09 | $\begin{array}{ll} \text { Female } \\ \text { Consults } & 0.12 \\ \hline \end{array}$ | $\begin{array}{\|lr} \hline \text { Disability } \\ \text { Days } & 0.17 \\ \hline \end{array}$ | Family  <br> Income 0.12 |
|  | $\begin{array}{ll} \begin{array}{ll} \text { Month of } \\ \text { Survey } \end{array} & 0.04 \\ \hline \end{array}$ | Region 0.07 | Region 0.07 | Education0. 07 | $\begin{array}{\|ll} \hline \text { Family } & \\ \text { Size } & 0.10 \\ \hline \end{array}$ | Region 0.14 | $\begin{array}{\|ll} \hline \text { Composite } & \\ \text { Risk } & 0.11 \\ \hline \end{array}$ |
|  | $\begin{array}{\|ll\|} \hline \text { Marital } & \\ \text { Status } & 0.03 \\ \hline \end{array}$ | Family  <br> Income 0.06 | Family  <br> Income 0.06 | Family  <br> Income 0.06 | $\begin{aligned} & \hline \text { Disability } \\ & \text { Days } \quad 0.10 \\ & \hline \end{aligned}$ | $\begin{array}{ll} \text { Female } & \\ \text { Prevent } & 0.09 \end{array}$ | $\begin{array}{\|ll\|} \hline \begin{array}{l} \text { Pemale } \\ \text { Prevent } \end{array} & 0.11 \\ \hline \end{array}$ |
|  | Economic  <br> Respons. 0.02 | Month of  <br> Surveg 0.04 | Month of Surver 0.04 | $\begin{array}{\|ll} \hline \text { Family } & \\ \text { Size } & 0.06 \\ \hline \end{array}$ | Region 0.09 | $\begin{array}{ll} \text { Family } & \\ \text { Income } & 0.05 \\ \hline \end{array}$ | $\begin{array}{\|ll\|} \hline \begin{array}{ll} \text { Marital } \\ \text { Status } \end{array} & 0.11 \\ \hline \end{array}$ |
|  | Family 0.02 <br> Income 0.0 | Economic  <br> Respons. 0.02 | $\begin{array}{ll} \hline \text { Bconomic } \\ \text { Respons. } & 0.00 \\ \hline \end{array}$ | Affect  <br> Balance 0.06 | Family  <br> Income 0.08 | $\begin{array}{\|ll} \hline \text { Family } & \\ \text { Size } & 0.04 \\ \hline \end{array}$ | $\begin{array}{\|ll} \hline \begin{array}{l} \text { Family } \\ \text { Size } \end{array} & 0.06 \\ \hline \end{array}$ |
|  |  |  |  | Month of Survey 0.01 | Education0. 07 | Education0. 04 | Region 0.04 |
|  |  |  |  | Marital  <br> Status 0.01 | $\begin{array}{\|ll} \hline \begin{array}{l} \text { Female } \\ \text { Prevent } \end{array} & 0.07 \\ \hline \end{array}$ | $\begin{array}{ll} \hline \begin{array}{l} \text { Marital } \\ \text { Status } \end{array} & 0.02 \\ \hline \end{array}$ | $\begin{array}{\|ll} \hline \begin{array}{l} \text { Affect } \\ \text { Balance } \end{array} & 0.03 \\ \hline \end{array}$ |
|  |  |  |  | Economic Reapons. 0.01 | $\begin{array}{ll} \hline \text { Affect } \\ \text { Balance } & 0.03 \\ \hline \end{array}$ | Economic Respons. 0.02 | Education 0.02 |
|  |  |  |  |  | Month of Surver 0.00 | Affect  <br> Balance 0.02 | Month of Surver 0.02 |
|  |  |  |  |  | $\begin{array}{\|ll} \hline \begin{array}{ll} \text { Marital } \\ \text { Statue } \end{array} & 0.00 \\ \hline \end{array}$ | Month of Surveg 0.00 | $\begin{array}{ll} \hline \begin{array}{l} \text { Rconomic } \\ \text { Respons. } \end{array} & 0.00 \\ \hline \end{array}$ |
|  |  |  |  |  | Economic Respons. 0.00 |  |  |

## TABLE 6.79 PREVALENCE OF HEALTH RISK BEHAVIOURS

A Comparison Between Men and Women in the Paid Labour Force and Women Homemakers

|  |  |  | PREVALENCE |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| RISK <br> FACTOR | DESCRIPTION | TOP PREDICTORS IN THE MODEL | $\begin{aligned} & \text { WOMEN AT } \\ & \text { HOME } \end{aligned}$ | WOMEN IN THE PAID LABOUR FORCE | $\begin{aligned} & \text { MEN IN THE } \\ & \text { PAID LABOUR } \\ & \text { FORCE } \\ & \hline \end{aligned}$ |
| SMOXING | Current Regular or Occasional Smokers | Education <br> Marital Status | 45.2 | 44.8 | 52.4 |
| ALCOHOL | More than 7 Alcoholic Drinks in One Week | Family Income Region | 19.6 | 21.0 | 49.7*** |
| EXERCISE | Less than 1749 on the Physical Activity Index | Time of Year Region | 35.6 | 40.1*** | 37.4 |
| COMPANY | Leisure Time Spent Mostly Alone | Time of Year Family Size | 12.2 | 8.1 ${ }^{* * *}$ | $7.3^{* * * *}$ |
| HORMONE <br> PILLS | Any Type of Hormone 'Medication' | $\begin{aligned} & \text { Family Size } \\ & \text { Region } \\ & \hline \end{aligned}$ | 13.6 | $16.8{ }^{* * * *}$ | N/A |
| LIFE <br> EVENTS | > 1 Major Life Change Event in the Previous Year | Family Size Family Income | 17.6 | $29.0{ }^{* * * *}$ | 23.9* |
| $\begin{aligned} & \text { M.V. } \\ & \text { TRAVEL } \end{aligned}$ | More than $11,000 \mathrm{Km}$ in the Previous Year | Family Income Economic Respons. | 29.0 | 33.7 | 40.5** |
| $\begin{aligned} & \text { SEAT BELT } \\ & \text { USE } \\ & \hline \end{aligned}$ | NO use of Seat Belt on a Regular Basis | Region <br> Education | 41.1 | 48.1 ${ }^{\text {**** }}$ | 47.6*** |
| FEMALE PREVENT | Infrequent or no BSE, BPE or Pap Smear | Region <br> Marital Status | 14.3 | $9.8{ }^{* * * *}$ | N/A |
| $\begin{aligned} & \text { COMPOSITE } \\ & \text { RISK } \end{aligned}$ | Combined Score of Above Except Female Prevent \& Seat Belt Scores | Family Size Education | 10.5 | 11.8 |  |



TABLE 6.80 SELF REPORTED HEALTH STATUS
A Comparison between Men and Women in the Paid Labour Force and Women Homemakers

| HEALTH STATUS MEASURE | DESCRIPTION | TOP PREDICTORS | PREVALENCE (\%) |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | $\begin{array}{\|l\|} \hline \text { WOMEN AT } \\ \text { HOME } \end{array}$ | WOMEN IN THE PAID LABOUR FORCE | MEN IN THE PAID LABOUR FORCE |
| HEALTH OPINION | Scoring 40 or Less on a 16-48 Range ${ }_{1}$ | Composite Risk Marital Status | 35.0 | 32.5 | $16.1{ }^{* *}$ |
| AFFECT <br> baLANCE | Reporting More Pleasant than Unpleasant Subjective Feelings | Composite Risk Marital Status | 53.7 | 56.2 | 58.5* |
| CHRONIC HEALTH PROBLEMS | More than One Chronic Health Problem | Composite Risk <br> Family Size | 57.8 | 57.2 | 44.8** |

${ }^{*} \mathrm{P}<.05$; ${ }^{* *} \mathrm{P}<.002 \quad 1^{\text {See text for full details of Health Opinion Measure }}$

TABLE 6.81 HEALTH CARE RELATED BEHAVIOURS
A Comparison between Men and Women in the Paid Labour Force and Women Homemakers

| INDICATORS | DESCRIPTION | TOP PREDICTORS | PREVALENCE (\%) |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | $\begin{array}{\|l\|} \hline \text { WOMEN AT } \\ \text { HOME } \end{array}$ | WOMEN IN THE PAID LABOUR FORCE | MEN IN THE PAID LABOUR FORCE |
| DISABILITY DAYS | Days of Reduced Activity <br> Due to Illness | ```Number of Health Problems Health Opinion Score``` | 12.5 | 15.7 | 12.7 |
| HEALTH CONSULTS | More than 5 Health <br> Professional Consults in <br> Previous Year | ```Number of Health Problems Health Opinion Score``` | 35.4 | 39.3 | 26.9** |
| MEDICATIONS | More than One Medication Regularly | ```Number of Health Problems Health Opinion Score``` | 17.8 | 24.1 * | 16.6 |
| $\begin{aligned} & \text { HOSPI'TAL- } \\ & \text { IZATION } \end{aligned}$ | Any Nights in Hospital in Previous Year | Number of Disability Days Number of Health Problems | 18.0 | 11.1 ** | $5.2^{* *}$ |

* $\mathrm{P}<.02$; ** $\mathrm{P}<.002$

TABLE 6.82 SELECTED LIFESTYLE AND HEALTH SCORES FOR WOMEN IN THE STUDY GROUP, BY REGION OF RESIDENCE

| SUMMARY OF REGIONAL VARIATIONS*... <br> ...among those dependent variables for which 'region' was one of the top three Predictors |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| FACTOR | ATLANTIC REGIONS | QUEBEC | ONTARIO | PRAIRIES | B.C. |
| ALCOHOL | 1.91 | 2.01 | 2.10 | 2.08 | 2.11 |
| CIGARETTES | 2.14 | 2.16 | 1.99 | 2.12 | 2.11 |
| PILLS | 1.31 | 1.45 | 1.31 | 1.35 | 1.29 |
| M.V. TRAVEL | 2.04 | 1.90 | 1.95 | 2.04 | 1.98 |
| EXERCISE | 2.14 | 1.99 | 1.94 | 1.93 | 1.85 |
| SEAT BELTS | 2.62 | 1.51 | 1.47 | 2.35 | 1.43 |
| FEMALE PREVENTIVE | 4.55 | 4.83 | 4.42 | 4.10 | 4.08 |
| HEALTH PROBLEMS | 1.08 | 0.86 | 1.09 | 1.06 | 1.21 |

The higher the score, the less desirable the behaviour or status.

TABLE 6.83 SELECTED LIFESTYLE AND HEALTH SCORES FOR WOMEN IN THE STUDY GROUP, BY MARITAL STATUS

| VARIATIONS ASSOCIATED WITH MARITAL STATUS.... <br> $\ldots$..among those dependent variables for which 'marital <br> status' was one of the top three predictors. |  |  |
| :--- | :---: | :---: |
| FACTOR | NOT <br> MARRIED | MARRIED |
| ALCOHOL | 2.15 | 2.02 |
| CIGARETTES | 2.32 | 2.07 |
| SEAT BELT USE | 2.06 | 1.89 |
| FEMALE PREVENTIVE | 12.67 | 12.25 |
| COMPOSITE RISK SCORE | 39.76 | 41.79 |
| HEALTH OPINION SCORE* | 1.68 | 1.48 |
| AFFECT BALANCE | 1.65 | 1.51 |
| COMPANY FOR LEISURE TIME |  | 4.35 |

For all except Health Opinion Score, a lower score should be considered more desirable.

TABLE 6.84 SELECTED LIFESTYLE AND HEALTH SCORES FOR WOMEN IN THE STUDY GROUP, BY LEVEL OF EDUCATION

| VARIATIONS ASSOCIATED WITH EDUCATION.... ng those dependent variables for which 'education s one of the top three predictors. |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| FACTOR | $\begin{aligned} & \text { SECON- } \\ & \text { DARY } \end{aligned}$ | $\begin{aligned} & \text { POST } \\ & \text { SECON- } \\ & \text { nARY } \end{aligned}$ | DIPLOMA | DEGREE |
| ALCOHOL | 2.04 | 2.09 | 2.01 | 2.05 |
| CIGARETTES | 2.20 | 2.00 | 1.95 | 1.78 |
| EXERCISE | 2.02 | 2.02 | 1.89 | 1.92 |
| SEAT BELT USE | 2.01 | 1.89 | 1.78 | 1.65 |
| FEmaLE PREVENTIVE | 4.54 | 4.12 | 4.15 | 4.33 |
| COMPOSITE RISK SCORE | 12.41 | 12.72 | 12.08 | 11.91 |
| HEALTH OPINION SCORE * | 41.02 | 42.68 | 41.90 | 42.13 |

* For all except Health Opinion Scores, a lower score should be considered more desirable.

TABLE 6.85 SELECTED LIFESTYLE AND HEALTH SCORES FOR WOMEN IN THE STUDY GROUP, BY FAMILY SIZE

| VARIATIONS ASSOCIATED WITH FAMILY SIZE.....* <br> ong those dependent variables for which 'family ze' was one of the top three predictors. |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| FACTOR | FAMILY 0 F 1 | FAMILY OF 2-3 | FAMILY OF 4-6 | FAMILY <br> $0 F$ <br> $7+$ |
| HORMONE PILLS | 1.57 | 1.40 | 1.30 | 1.20 |
| LIFE EVENTS | 1.30 | 1.36 | 1.23 | 1.20 |
| COMPOSITE RISK | 12.98 | 12.57 | 12.10 | 11.64 |
| HEALTH PROBLEMS | 1.33 | 1.16 | 0.95 | 0.79 |
| AFFECT BALANCE | 1.49 | 1.52 | 1.49 | 1.58 |
| COMPANY FOR LEISURE TIME | 1.63 | 1.59 | 1.50 | 1.40 |

* Lower scores should be considered more desirable.

TABLE 6.86 SELECTED LIFESTYLE SCORES FOR WOMEN IN THE STUDY GROUP ACCORDING TO FINANCIAL RESPONSIBILITY FOR ECONOMIC FAMIL̇Y UNIT

| VARIATIONS ASSOCIATED WITH <br> FINANCIAL RESPONSIBILITY...* <br> .. among those dependent variables for which <br> 'economic responsibility' was one of the <br> top three predictors |  |  |
| :--- | :---: | :---: |
| FACTOR | RESPONSIBLE | DEPENDENT |
| HORMONE PILLS | 1.46 | 1.32 |
| M.V. TRAVEL | 2.13 | 1.95 |
| LIFE EVENTS | 1.34 | 1.25 |

TABLE 6.87 SELECTED LIFESTYLE SCORES FOR WOMEN IN THE STUDY GROUP, BY FAMILY INCOME

| VARIATIONS ASSOCIATED WITH INCOME FAMILY.....* two dependent variables for which 'family income' was one p three predictors. |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \text { 1ST } \\ & \text { QUINTILE } \\ & \text { (LOWEST) } \end{aligned}$ | $\begin{aligned} & \text { 2ND } \\ & \text { QUINTILE } \end{aligned}$ | $\begin{aligned} & \text { 3RD } \\ & \text { QUINTILE } \end{aligned}$ | $\begin{aligned} & 4 \mathrm{TH} \\ & \text { QUINTILE } \end{aligned}$ | 5TH QUINTILE (HIGHEST) |
| M.V. TRAVEL | 1.73 | 1.86 | 1.99 | 2.04 | 2.17 |
| LIFE EVENTS | 1.34 | 1.30 | 1.30 | 1.23 | 1.21 |

* Lower scores should be considered more desirable.

TABLE 6.88 COMPANIONSHIP SCORES FOR WOMEN IN THE STUDY GROUP, BY THE SEASON OF THE SURVEY

| $\|$VARIATIONS ASSOCIATED WITH THE SEASON OF <br> THE SURVEY....* |
| :--- |
| ...for the one variable for which 'time <br> of year' was one of the top three <br> predictors. |
| FACTOR |
| COMPANY FOR <br> LEISURE TIME |

* Lower scores should be considered more desirable.


## DISCUSSION

### 7.1 THE QUESTION

Since the 1950's there has been a dramatic increase in the number of women in the paid labour force in Canada. Table 2.9 shows that the increase has been greatest among women with children and especially among those with children under six years of age. The health of a society's mothers has an impact not only on the women themselves but also on their families because as discussed in Chapter Two, women still are responsible for the nurturing and day-to-day care of the family. Reduced time for mothers with their children can probably be compensated by 'quality time' after work hours but if the mother is very tired and suffering chronic aches and pains, then the after-work hours with the family may not be very satisfactory for any of its members and the general domestic environment may be quite stressed. Such a scenario, if it exists, has implications for society in terms of the nature and role of the family group which in turn influences the next generation's hopes and expectations regarding marriage and family life.

The questions posed in this thesis:

1. Do women who participate in the paid labour force report poorer health status than their counterparts who are homemakers?
2. Do women who participate in the paid labour force exhibit lifestyle patterns significantly different from their counterparts who are homemakers?
3. Do women in the paid labour force exhibit health care utilization patterns significantly different from their homemaker counterparts? and,
4. Do women's lifestyles, reported health status and health care utilization patterns differ from those of their male counterparts in the paid labour force?
attempt to address some of these issues. Further, the research was designed to examine the implications of women's changing roles in terms of their health care needs.

### 7.2 THE MODEL

The C.H.S. data were chosen primarily because they provided a broad data base immediately available for analysis. Although there were limitations imposed on the study because the data base did not address all the issues, it nevertheless offered an opportunity to become familiar with the issues and to do some preliminary hypothesis testing. The limitations of the C.H.S. data in terms of building the most complete model possible for this study, included:

- a lack of employment history information. Women tend to move in and out of the workforce more than men and the fact that they reported being in the workforce in the previous twelve months does not permit one to assume anything about work experience in the years previous to the one reported.
- the absence of some health behaviours identified as important by other researchers. These were diet and promiscuity (Lalonde, 1974); eating habits and sleep patterns (Belloc and Breslow, 1972).
- the inability to identify disability days, health professional consultations and hospitalizations associated with childbirth and reproductive functioning in general. For any study on the health of women, it is important to be able to identify these items especially if comparisons are being drawn against male or older populations.
- the use of proxy reporting for health related behaviours including disability days, health professional consultations and medication consumption. This must surely reduce the accuracy of the data to varying degrees. Parents may be able to report accurately on behalf of children but is it reasonable to believe that one adult, answering on behalf of other adults or adolescents in the house, would know about and remember visits by these others, to doctors and dentists? Would a man who is at work all day know whether his wife had a rest in the middle of the day because she wasn't feeling well? He probably would be better able to report her lifestyle such as drinking, smoking, exercise and companionship but these were part of the survey that had to be filled in by each subject personally.
- missing data in the Lifestyle and Health Questionnaire. For example, a high percentage of women subjects ( $91.5 \%$ ) answered the question about hormone pill consumption but a much lower percentage of the women (54.5\%) reported on their alcohol consumption and only $36.3 \%$ of men answered all the questions concerning motor vehicle travel. This lack of answers could be attributed to:
- reluctance to report what might be perceived as socially undesirable behaviour;
- inability to recall the information easily;
- a perception that the question does not apply to the respondent, hence failure to provide any response.

The high level of missing data for some of the lifestyle questions reduced by more than $50 \%$ the number of subjects for which a composite risk score could be developed.

Given these limitations, a model was developed (Figures 4.1-3) and
despite its inability to explain high proportions of variations in scores, some interesting patterns emerged.

### 7.3 HEALTH RISK BEHAVIOURS

Workforce women generally reported health risk behaviours significantly different from their homemaker counterparts (see Table 6.78). On the positive side, they had more company during leisure time and they more consistently availed themselves of female screening behaviours. On the negative side, they did less exercise, were more likely to take hormone pills, had more life change events and were less likely to wear their seat belt.

For two variables, workforce women also reported higher health risk behaviour than their male counterparts; they reported less exercise and more life change events. The percentage of men reporting seven or more drinks in the previous week was the one aspect of their health risk behaviour that was overwhelmingly different from women's, ( $\mathrm{p}<.002$ ). Not as marked but still significant was the men's higher rate for life events and motor vehicle travel. These three factors resulted in a significantly greater percentage of men (30.5\%, p<.002) than homemakers (10.5\%) or workforce women (11.8\%) being in the highest risk group.

These findings raise the question of what constitutes major health risk behaviours for women and are they different from those reported for men? The work by Breslow and Enstrom (1980) showed female mortality rates to be less affected by the non-observance of the seven health practices they had identified (see Table 2.4). Stamler and Epstein (1972) evaluated the relative risks of coronary heart disease from cigarette smoking, hypercholesterolemia
and hypertension, but worked only with male subjects. There would seem to be a need for more research into the possibility either that women's behaviour is less strongly related to their mortality (but possibly related to morbidity) or that there are other factors in women's lifestyles (such as role responsibilities and perceptions of autonomy) which have not yet been incorporated into the health risk model. The findings of this study, that B.C. women often reported the best scores for risk avoidance behaviours but still reported the highest proportion with one or more chronic health problems, should confirm that more research is needed to explain health risk behaviours for women in terms of morbidity as well as mortality.

The model was able to explain only very small percentages of variance (around 4\%) in the health risk behaviour scores, but some of the demographic variables fairly consistently appeared as the best predictors. As Table 6.81 shows, region was associated with six out of eight of the health risk behaviour scores (not life events or companionship). The issues surrounding these regional differences are ones of health promotion, education and service provision. As noted earlier, although health services within Canada are broadly legislated under the Canada Health Act, within and across provinces the range of health promotion and health care services varies greatly. One important question is whether in a longitudinal study these variations in provision of services can be shown to affect morbidity and/or mortality patterns. For example, will the emphasis on cervical screening in B.C. provide that region with a mortality rate from cervical cancer that is less than the national average? Data from Kurlen and Doll (1973) showed that
in the ten years previous to their study the rate for 45-64 year olds was lower in B.C. than in the rest of Canada. More data like these are required if service providers are to assign society's health care resource to the most effective programmes.

The other demographic variables that were among the best predictors of health risk behaviour were marital status, family size and education. None of these is surprising. The protective effect of living with a family (except possibly as a single parent) has consistently been documented, (Anesheuel, Frerichs and Clark, 1981; Gore and Mangione, 1983). The significance of this finding to this study is that as mothers move into the workforce it would seem important that the institutions of marriage and family not be altered to the extent that they become a burden more than a benefit for family members.

The education effect shown by these data was not always consistent but generally, higher education was associated with lower rates of high risk behaviour. The benefits of more women seeking higher education should be, therefore, not only improved work opportunities but also healthier lifestyles.

### 7.4 HEALTH STATUS

There was no significant difference between the reported health status of the two women's groups but the men's group showed significantly better rates ( $p<.05$ ) on all three measures. The better male scores are consistent with the findings of other studies (Gove and Hughes, 1979; Waldron, 1983(b)), and this study offers no additional insight into why such a consistent difference exists.

The lack of difference between the two women's groups may be a question of age. First, as it was noted earlier, the consequences of health risk events and behaviours are not always immediate. Therefore although the groups showed different risk behaviours, the women may have been too young for the consequences to have become apparent. Second, the use of an age group as wide as 25 - 44 years may have diluted the consequences being experienced by women in the top end of the age span.

One more convoluted possibility is that women in the workforce may be experiencing more stresses and strains but their very busy, involved lives may reduce their willingness to acknowledge and report chronic problems (supermom syndrome). Two such factors, if they existed, could negate each other.

### 7.5 HRALTH CARE BEHAVIOURS

There was no significant difference between the number of disability days or health professional consultations reported by the three groups. These findings are in keeping with those of Cleary, Mechanic and Greenley (1982) who found that when adjusted for differences in health status, health care utilization by men and women was similar. Contrary to this Verbrugge (1984)
reported lower health care utilization among employed women. In this study the percentage of employed women taking medications (24.1\%, p<.02) was higher than for either homemaker women (17.8\%) or workforce men (16.6\%).

Women use health care seivices for reasons other than illness. For example, cervical screening, professional breast examinations, hormone pill prescriptions and childbearing care all require regular health professional consultations but are not associated with poor health. Without more information regarding the nature of the consultations, it is not possible to assess what proportion of the differences in the scores might be explained on these grounds. Another explanation for the greater use of consultations and medications by workforce women may be their need to maintain their busy work schedules. For example, for minor acute episodes such as throat infections, the workforce women may seek antibiotics rather than take days off work. This idea may appear at odds with the fact that workforce women report more disability days but as argued earlier, the higher score for workforce women may be an artifact of proxy reporting.

### 7.6 LIMITATIONS

There were several limiting factors in this study beyond those imposed by the C.H.S. data.
. The age range 25 - 44 was too broad. During that age span women's responsibilities range from young very dependent families to independent children living at home; the not married status is likely to be more common among younger members of the age group; and physical activity patterns are known to become more sedentary as people move into middle age.

Unfortunately, all age-related data were discarded when the data base was set up for this study.
. The high number of subjects excluded from the analyses on health status and health care consequences because they failed to provide sufficient data to generate a composite risk score raises the question of whether these people were different from those who answered all the questions. This study did not address this question.

- To know the reasons for subjects' health professional consultations and use of medications, although not required for the model, would have been very valuable for interpreting the results. These data were available on the C.H.S. tape but were not extracted when the data base was set up for this study.
- The study questions were very broad. While it offered an overview of the many issues surrounding studies in women's health, it provided no definite results. This was in part because no issue was explored in any great depth. The thesis leaves unanswered many more, and more complicated questions than it answers. Despite this, it allowed the student to become familiar with the issues and provided information which could help with, or even stimulate further study.


### 7.7 ISSUES FOR FUTURE STUDY

For further study, three particular issues would seem to have greatest relevance.

1. What are the health risk behaviours for women? Are there factors such as role responsibility or perceptions of autonomy which could have a significant impact on women's health? What part does self-selection play in the apparent ability of some women to successfully enjoy multiple roles while
others struggle to cope with just one? Only a comprehensive longitudinal study can address these questions.
2. To what extent does health status reporting as done in the C.H.S., reflect perceptions and attitudes toward heal. th rather than health status itself? Are men socialized to ignore aches and pains or do they deny them because they are at odds with the male image? If so, do women who are in the workforce with men learn to ignore (or take a pill and ignore) their minor symptoms? An attitude-to-illness questionnaire in conjunction with a health status questionnaire and an objective measure of functional status might answer some of these questions.
3. If women in the workforce have a high need for health professional services, how are these best provided? Serious thought must be given to the type of services required and their availability. Could non-traditional, health professional-type clinics meet most of the women's needs? Would employer sponsored clinics be effective for both the employer and the employee? To answer questions such as these, much more information is required about the health care needs of women in the paid labour force.

### 7.8 CONCLUSION

There are many other questions which when answered, would further our knowledge of women's health issues. This thesis has addressed just one aspect of an interesting, large and important topic.

Men and women experience health differently. In Chapter 2.3 some of the biological and social reasons for this difference were discussed and it was
noted that many of the social reasons previously identified are associated with women in traditional lifestyles. But women's options have expanded enormously in the past 30 or 40 years and many women choose to, and are able to, exercise those options. Others are required to, or prefer to, stay in traditional roles. This juxtaposition of women exer:ising different social and lifestyle options provides a nation-wide opportunity for further exploration of the social factors influencing the health related experiences and behaviours of women.

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## APPENDIX

DATA ITEMS FROM THE C.H.S. USED IN THIS STUDY
The following data for all men and women aged $25-44$ were extracted.
From the Interviewer Administered Questionnaire:
Region of
Residence 10 Atlantic Provinces
20 Quebec
30 Ontario
40 The Prairies
50 British Columbia
Month of
Survey 01 July 78 Recoding:
02 August 78
03 September 78 01-03 - Summer 1978 (01)
04 October 78
05 November $78 \quad 04-06$ - Fall 1978 (02)
06 December 78
07 January 79 07-09 - Winter 1979 (03)
08 February 79
09 March 79
Marital
Status 01 Single (never married) Recoding:
02 Married (including common law) Not married
03 Widowed married (02)

04 Separated/divorced
Size of
Economic 01 Unattached individual
Family 02 2-3 people
03 4-6 people
04 Separated/divorced
Family Income 01-05 Income quintiles adjusted to reflect the size of the family and the municipality of residence.

Principal Income
Earner 01 Principal earner for the economic family
02 Not principal income earner
Education 02 Secondary (some or complete)
03 Some post-secondary
04 Post-secondary certificate or diploma
05 University degree

| Major Activity |  |
| :---: | :---: |
| in past year | 01 Working |
|  | 02 Keeping house |
|  | 03 Going to school 03-06 not included |
|  | 04 Retired or not working (health) in this study. |
|  | 05 Retired or not working (other) |
|  | 06 Baby or child |
| h.tivity | 01 None 01 only included in this study |
| Limitations | 02 Some |
|  | 03 Major Activity Limitations |
|  | 04 Cannot do Major Activity |
| Disability |  |
| Days in Previous |  |
| Two Weeks 01 - 14 This is the sum of all days spent away from normal activity (whether in bed or not) and days of reduced activity due to poor health. |  |
| Number of visits in previous year to: |  |
| Doctor | 00-24+ Recoding: |
| Dentist | 00-12+ These numbers of visits were combined to create |
| Nurse | 00-12+ an 'Annual number of health professional visits'. |
| Opt'rist | 00-06+ |
| Other | 00-06+ |
| Number of nights spent as a hospital patient in the previous year:$00-22+$ |  |
| An accident in the previous twelve months: Yes/No |  |
| (Included only those accidents which resulted in injury and a limitation of normal activities.) |  |
| Number of chronic health problems:$00-04+$ |  |
| Variety of medi | ications taken at least once a week during the previous month 00-04+ |

From the self-administered Lifestyle Questionnaire:


Level of Physical

| Activity | 01 | Sedentary | Recoding: |  |
| :--- | :--- | :--- | :--- | :--- |
|  | 02 | Moderately inactive | $01-02$ - little | $(03)$ |
|  | 03 | Moderate | 03 - moderate | $(02)$ |
|  | 04 | Moderately active | $04-05$ - active | $(01)$ |
|  | 05 | Very active |  |  |

(Based on reported leisure and work time activites)


[^13]| Data points for women subjects only. |  |  |  |
| :---: | :---: | :---: | :---: |
| Most Recent |  |  |  |
| Pap Smear | 01 Less than 12 months ago | Recoding: |  |
|  | 02 1-2 years ago | 01-02 - Good | (01) |
|  | 03 More than 2 yrs ago | 03 - Moderate | (02) |
|  | 04 Never | 04-05 - Poor | (03) |
|  | 05 Not sure |  |  |
| Most Recent |  |  |  |
| Professional <br> Breast Exam | 01 Less than 12 months ago | Recoding: |  |
|  | 02 1-2 years ago | 01-02-0.R. | (01) |
|  | 03 More than 2 yrs ago | 03 - So, so | (02) |
|  | 04 Never | 04-05 - Poor | (03) |
|  | 05 Not sure |  |  |
| Frequency of |  |  |  |
| Breast Self | 01 Once a month | Recoding: |  |
| Exam | 02 Once every 2-3 months | 01-02 - Good | (01) |
|  | 03 Less often | 03 - So, so | (02) |
|  | 04 Never | 04-05 - Bad | (03) |
|  | 05 Don't know how |  |  |
| Taking of Hormone/Birth Control Pills: 01-02 Yes/No |  | Recoding: |  |
|  |  | No | (01) |
|  |  | Yes | (02) |


[^0]:    ${ }^{1}$ Census data failed to account for women doing piecework, housecleaning or having a boarder (Phillips and Phillips, 1983).

[^1]:    'in order of importance the major contributions to improvement in health in England and Wales were limitation of family size (a behavioural change), increase in food supplies and a healthier physical environment (environmental influences), and specific preventive and therapeutic measures.' (McKeown, 1973)

[^2]:    'Past improvement has been due mainly to modification of behaviour and changes in the environment and it is to these same influences that we must look particularly for further advances.'(McKeown, 1972)

[^3]:    1 Department of Health Care and Epidemiology, Division of Preventive Medicine \& Health Promotion

[^4]:    2 In 1979 only $8.6 \%$ of the male work force worked in agriculture.

[^5]:    1 This description of the C.H.S., unless indicated otherwise, is taken from the Data User's Guide which is provided with the computer data file. The major printed report on the Canada Health Survey is The Health of Canadians: A Report on the Canada Health Survey. Statistics Canada and Health and Welfare, Catalogue 82-538E, Ottawa, 1981.

[^6]:    ${ }^{1}$ The C.H.S. data available to the public, in order to provide the highest possible level of anonymity to the subjects, have been organized so it is not possible to infer the actual composition of each woman's household.

[^7]:    3 Each two-week report of kilometres driven was multiplied by 6.5 to represent the winter, summer or autumn travelling distance according to the season in which the data were actually collected. To each of these estimates was added the average seasonal estimate for respondents in the same age-sex-community size category for each of the other three seasons. As there were no data collected in the spring, autumn data were used in place of spring travelling estimates.

[^8]:    * Rates standardized against the "Women Homemakers" group.

[^9]:    *Rates standardized against the "Women Homemakers" group.

[^10]:    Rates standardized against the "Women Homemakers" group.

[^11]:    Rates standardized against the "Women Homemakers" group.

[^12]:    * Rates standardized against the "Women Homemakers" group.

[^13]:    Life Events in
    Past Year 00 - 05+

