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Women's work and its impact on their mental and physical health

A quantitative study of mothers in Tehran

by

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A thesis submitted for the degree of
Doctor of Philosophy

University of Warwick
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February 2000

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To: Ahmad and Nikoo

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Acknowledgments

I would like to express my appreciation for the invaluable help, support and guidance I received from many great people; my supervisors as well as friends, colleagues and relatives, without whom this work could not have been realised.

I was privileged to work with Dr. Ellen Annandale and Dr. Richard Lampard as my supervisors. They spent long hours of their precious time providing me with their helpful ideas, detailed feedback and academic comments and patiently supported me through the ups and downs of this extended project. To both of them, I am sincerely grateful.

A number of Iranian university professors and lecturers provided recommendation letters before the commencement of the Ph.D. programme and encouragement during the course of study, which facilitated the realisation of the project. My thanks go to Dr. M. Chalabi, Dr. E. Fiuzat, Dr. A. Nik-Gohar, Dr. M. Tavakol, Prof. A.H. Mehryar, Dr. Piran and Dr. Abbas-Zadegan.

Dr. Judith Cornell offered help with the purification of the text of this thesis of the mistakes typical of a non-English speaker. I am also deeply grateful to Eng. Amir R. Mamdoohi (Ph.D. student), Mrs. M. Mirkazemi, Dr. B. Nakhaei, Dr. M. Mirkazemi, Eng. M. Mirkazemi, Mrs P. Kashani, Mr and Mrs. Collins, Mrs M. Salarvandi, and A. Canny whose enthusiastic support and help in the most crucial moments of my Ph.D., I highly appreciated. My special thanks go to my dear friends and colleagues Ms M. Kashani, and Ms M. Shiyani who generously volunteered their time and energy for this project and gave me very useful ideas for the improvement of the survey. I am also enormously indebted to Mr. F. Bayat for his tremendous help concerning the realisation of this Ph.D. Many other marvelous people have helped me throughout this project, to all of whom I am heartily thankful.

I was awarded a scholarship from the Iranian Ministry of Culture and Higher Education, to which I am sincerely grateful. In conducting the main survey, I also received help (either financially or administratively) from the Bureau of Women's Participation Affairs, Institute of Research in Development and Planning in Iran and also from the Department of Sociology at Warwick University. A group of social sciences B.A.-graduates or students of the University of Allame-Tabatabai helped to conduct the interviews. In the different stages of the development of the thesis, I was supported and greatly helped by F. and K. Halstead and W. Murray, in the Information Technology department (then Computing Services), B. Horner, A. Arlidge, J. Tyrell and F. Jones in the Sociology Department at Warwick.

Last, but not least, there are my parents, Farkhondeh and Jahangir, my husband architect Ahmad R. Mamdoohi, and my daughter Nikoo, to whom I am enormously thankful and without whose invaluable support and dedication this work would not have been possible.

Abstract

Aims. Research on women's health and the effects of multiple roles is associated with women's increased labour force participation in the post war period in the West. Competing theoretical approaches view women's work out of home either negatively or positively. Developing countries such as Iran, on their way towards industrialisation, are subject to socio-economic changes similar to those in the West. This thesis investigates the extent to which the recently accelerated trend towards women's labour force participation in Iran affects *women's health,* either positively or negatively, and explores the relevance of Western theoretical approaches in a different cultural context. It is the first known study of its kind in Iran.

Method. A primary survey was conducted of a representative sample of working and non-working mothers in Tehran in 1998 (N=1065, 710 working mothers, with a response rate of 84.5% and 355 non-working mothers with a response rate of 88.1%). Three main explanatory factors were examined (socio-demographic, work and work-related, and social-life context variables) alongside a range of mental and physical health outcome variables.

Results. Unlike in the West, where women's paid work is generally associated with better health, statistically significant differences between working and non-working women were not found in Tehran. It is argued that this is a result of the counter-balance of the positive and negative factors associated with paid work, such as increased stress on the one hand and self-esteem on the other. Iranian society's particular socio-cultural climate has contributed to this finding, with its dominant sex-role ideology; the priority and extra weight placed on women's traditional roles as wives and mothers, and the remarkably influential impact of husbands' attitudes on women's health. Among working women, however, significant improvements in health were related to certain factors: better psycho-social and physical conditions in paid work; higher occupational class; higher self-esteem; working outside the home, rather than doing paid work *in* the home; approval of paid work by husbands; and lower levels of role-conflict.

Chapter 1

Women, Health and Work

Changing patterns in women's health, work and roles

Iranian women, like their counterparts in Western countries and in most of the Third World today, enjoy longer life expectancy than men (WHO, 1994). For 1991, the figures were 63.2 years of life for Iranian women compared with 62.4 for Iranian men (Iran Statistical Yearbook, 1995)[1].

The female advantage in life expectancy in Iran is, however, a recent phenomenon. In 1976, men lived a little longer, with life expectancy of 55.75 years compared with 55.04 years for women (Schmittroth, 1991). Official statistics indicate that since then there has been a gradual shift in favour of women such that figures for 1988 and 1993 show that women have gained the advantage. This advantage is more marked in urban areas than rural areas. In 1991, urban women in Iran enjoyed a life expectancy of 66.6 years, while for women from rural areas it was only 60 years (Iran Statistical Yearbook, 1995). By 1996 the figure had increased to around 70 years for urban women, and 67 for rural women (Women's Socio-economic Indexes in the Islamic Republic of Iran, 1997). Table 1-1 shows the level of increase in life expectancy in Iran between 1986 and 1996.

[1] Although it is a lower gap than in most countries.

Table 1-1. Life expectancy at birth in Iran

Year	1986	1991	1996
Both sexes	58.9	62.8	-
Men	58.5	62.4	-
Women	59.2	63.2	68*

Source: (Iran Statistical Yearbook, 1995). * Source: Women's Socio-economic Indexes in the Islamic Republic of Iran (1997)

It is evident that, although *both* sexes have experienced a remarkable improvement in life expectancy over the period, it has been especially marked for women.

Since the early 1970s, inequalities in health, national and international morbidity and mortality rates, and particularly the issue of sex differences in health, have been the subject of widespread interdisciplinary research and debate among scholars in various fields of the health sciences, medicine and medical sociology (see e.g. Townsend and Davidson, 1982; Whitehead, 1987; Verbrugge, 1989; Blaxter, 1990; Fuller *et al.*, 1993; Paellas and Leslie, 1995; Arber, 1997; Hunt and Annandale, 2000). In general, research findings indicate that women outlive men (Nathanson, 1975; Waldron, 1982; Miles, 1991; Macintyre *et al*, 1999). Nevertheless, there is evidence that the lower mortality rate for women is a relatively recent phenomenon, since historical studies indicate that men outlived women in the past and still do in some contemporary societies (e.g. Bangladesh, India, Nepal and Papua New Guinea) where the process of industrialisation is less advanced than in Western countries and higher female mortality rates continue (Waldron, 1982). Longevity has generally been associated with industrialisation.

In comparing the sexes on an international basis, Waldron (1991) refers to a number of ecological analyses, which have explored relationships between labour force participation rates in various regions and longevity in those regions. She writes that 'these analyses indicate that *higher female labor force participation rates* are generally associated with *a greater female longevity advantage'* (Waldron, 1991:30). There are, however, new signs of a recent decline in the gap between the life expectancies of men and women in Western countries, resulting in a shift in favour of men (Annandale, 1998).

In comparison, morbidity rates have long been recognised as higher among women than among men (see for example, Nathanson, 1975; Gijsbers Van Wigk *et al*, 1995). However, it is increasingly emphasised that the higher rates relate specifically to relatively mild forms of illnesses, rather than to the full range of conditions (Gove and Hughes 1979). This is an important factor to consider in addressing the issue of women's and men's morbidity. Drawing on health statistics from the United States, Verbrugge (1988:139) distinguishes between the kinds of health problems involved:

> Women have higher annual incidence rates of most (transitory) illness, higher prevalence rates for most nonfatal chronic conditions, and higher rates of daily symptoms. In contrast, men have higher prevalence rates for fatal conditions, and it is these that ultimately produce their earlier mortality. In simple terms, women's days and years are more filled with discomfort and illness restrictions, but contain less threat of life ending from illness.

As a consequence, it is crucial that we consider *the time frame* (distinguishing between *acute* and *chronic* conditions) and the type of health problem (fatal or non-fatal) when addressing the question of which sex is sicker.

There is now a wide range of studies of differences in health and morbidity among women related to their marital status and their work and employment status (Waldron *et al.*, 1998). In Britain, 'unemployed women and housewives at each age above 30 report more limiting long-standing illness than employed women' (Arber, 1990:51). Health surveys have consistently found higher rates of reported illness among *housewives* than among *employed* women (Gove and Tudor, 1973; Nathanson, 1980; Arber, 1989; Miles, 1991; Radley, 1994; Lee, 1998). Women worldwide are becoming increasingly involved in labour force activities inside as well as outside the home. Women worldwide make up over one third of the paid labour force (United Nations 1991, cited by Doyal, 1995). The increase in levels of women's economic activity internationally is attributed to women's improved educational attainment, societies' changing mores, and changing responsibilities for family welfare (Mehra *et al.* 1995). 'The pressure on women to earn an income has only increased as more economies monetize, as urbanization has spread and - in the 1980's and 1990's - as the strain of recession and economic restructuring affected millions' (Ibid.: 18).

Mehra *et al.* (1995:19) maintain that in many countries of Latin America and Africa, 'economic recession and structural adjustment programmes have compelled women to enter the labour force to compensate for declining household incomes due to male job losses, reduced earnings, and the effects of inflation' although they argue that employment

opportunities for women are often limited to marginal jobs with low wages, few fringe benefits and poor working conditions.

Developed countries are likewise witnessing increases in women's labour force participation. The proportion of economically active women in Britain rose 'from 44 per cent in 1971 to 53 per cent in 1994, and is set to rise to 57 percent by the year 2001' (Annandale, 1998:137, based on CSO-1995).

Regarding the division between *formal and informal work*, 'in much of the developing world, the informal sector rivals formal employment as a source of jobs for both men and women' (Mehra, *et al.* 1995:19). In Iran, despite a dearth of statistical information on women's informal engagement in paid work, it is arguable that women's productive work in the informal sector is significant and should not be ignored (see Lahsaei-Zadeh, 1996, Moti', 1997). In agricultural and animal husbandry, 'about half of the work is on women's shoulders, but because women perform these activities alongside their housework duties, these are accounted as housework activities and those women are missed out of the statistics on *working* women' (Women's socio-economic indexes in the Islamic Republic of Iran, 1997:156). Consequently, at least officially, women's employment in the formal sector in Iran represents a relatively low proportion of women's labour (see Table 1-2).

Table 1-2. Economic Activity and Employment Percentages among Women and Men (10 years old and over) in Iran: 1956, 1986 and 1996.

	Women		Men	
Year	Economically active[2]	In paid work[3]	Economically active	In paid work
	%	%	%	%
1956	9.22	99.5	83.9	97.1
1986	8.15	74.6	68.4	87.1
1996	9.10	86.6	60.8	91.5

Source: Iran Statistical Yearbook 1997.

In 1996, the economically active population[4] of Iran was 35.3 per cent of the total population (10 years and older), representing a general reduction since 1957, when it was 47.5 per cent. During this 40 year period, the proportion of 15 to 24 year-olds in the population has increased more than fourfold (Keyhan, 25.10.1999:5). The young population structure has combined with the acute economic and political problems of the post-revolution and war-time period (see chapter 3) to keep economic activity rates low, particularly among women. Nevertheless, there is an observable trend toward increasing involvement in the labour force by women in Iran, as in many other developed and developing countries (see chapter 3).

In reviewing women's significant labour force participation in the post war period in the UK, Coyle (1984) refers to the concept of dual role expressed by Myrdal and Klein (1956), who recognised that:

> The employment of women was not only an established fact of life, but a growing trend, and it was important to make it easier for women to combine their two roles rather than

[2] According to the definitions of the Iranian Statistical Centre, the economically active population refers to those who are either working or unemployed (and seeking work) in the overall population aged 10 years and older.
[3] In paid work: that is those among the economically active population who are not unemployed.
[4] That is, those in paid work or unemployed and seeking work (10 years and older).

> to create the conditions in which they conflicted ... The concept of dual role, ... was a reassurance and restatement of family ... not a degradation of family life, but rather a progressive development, whereby women's role increasingly became a realisation of full individual potential in all spheres (Coyle, 1984:7).

While the growing need for women's waged work may be recognised, it is subject to particular constraints:

> households in every region may need more than one income in order to achieve an acceptable standard of living, but women's ability to join the labour force will be affected by the number of children they have, the domestic obligations they are expected to undertake, and the availability of social supports like dependent care facilities and health and family-planning services (Division for the Advancement of Women, UN office, Vienna, 1991:31).

Despite significant changes in women's working patterns, Abbot and Wallace (1990) point out that little attention has been paid to the health hazards of women's paid and unpaid work. In fact, it is often noted that employed women tend to have safer jobs than men (Verbrugge, 1985). Annandale (1998) addresses the differential impact of the kind of jobs that women and men tend to take on their health. While 'men's jobs' in sectors such as energy, manufacturing and construction are supposedly more dangerous and arduous than 'women's jobs' in the service sector, Annandale (1998:135) reminds us that 'work in the female dominated service sector may be just as unhealthy, but is probably more likely to generate chronic ill health than terminal illness'.

In analysing the changes in women's lives, many social scientists have raised the issue of the increasing involvement of women in new roles outside the home, and the eventual effects that such involvement may have on their well-being. Martikainen (1995:199) articulates a key concern as follows:

> The mortality and morbidity effects of combining work and family life have been at the centre of intensive research in the United States and Great Britain, but it is still not quite clear whether these effects are detrimental or beneficial.

Even in advanced industrial societies, occupations 'are sharply sex-segregated and most occupations are classed as either women's work or men's work in the popular imagination' (Yeandle, 1984:105). 'Women's work' is concentrated in service, clerical, sales, factory, and similar jobs (Sorensen and Verbrugge, 1987, see also Walby, 1997, for recent changes in the pattern of women's employment in Britain). In Iran, too, the range of occupations in the formal sector in which most employed women are found encompasses mostly 'female jobs' such as teaching, clerical and office jobs, nursing and sales (Iran Statistical Yearbook, 1995). The pattern of women's paid work in Iran shows a gradual shift from the industrial and agricultural sectors towards the service sector (see Chapter 3).

Are working women in Tehran any different from non-working women in terms of their health?

Among women in industrialised countries there seems to be a health difference in favour of *working* women compared with *housewives (see e.g.* Waldron and Jacobs, 1989, Arber, 1997, Arber and Cooper, 2000). The important question is whether this difference is also found in societies with different social and cultural backgrounds such as Iran. To date, there has been insufficient research to answer this question. This thesis aims to contribute to the exploration of this issue.

This study poses the question: to what extent would taking up new forms of social involvement and participation beyond the boundaries of home and family life affect Iranian women's health in similar ways to Western women's, bearing in mind Western women's changing positions in terms of social and gender roles?

Iran is among the developing countries of the Middle East, and is on its way towards industrialisation and widespread urbanisation. As Mardookhi (1996: 33) puts it, 'Iran is halfway along the process of industrialisation. Its human and material resources, along with a national commitment for industrialisation, bring much hope for economic and industrial development'. A study by the Economic and Social Commission for Asia and the Pacific (ESCAP) shows that 'Iran is in the middle of the path to industrialisation, considering the four major indicators of hardware, technology, organisation and human resources. Iran is classified

as a nation with production capabilities' (Nasirzadeh:1996: 34). Table 1-3 shows the trend towards urbanisation in Iran over the last decade.

Table 1-3. The relative Distribution of Population in Iran, Resident and Non-resident (nomads).

	Share (%) in years		
	1986	1991	1996
Resident :			
Urban areas	54.3	57.0	61.3
Rural areas	45.2	42.3	38.3
Non-resident:	0.5	0.7	0.4
Total country	100.0	100.0	100.0

Source: Iran Statistical Yearbook, 1997.

Although the current rate of economic activity by Iranian women in the labour-force is still at a relatively low level in comparison with Western countries, according to statistics for the formal sector, there are signs of an increase in their economic activity and employment rates (see Table 1-2 above) as well as in their broader political and social participation rates (Zanan, 1999a) (see chapter 3). This includes an ongoing increase in the rates of literacy for the whole population in general and for women in particular[5], a narrowing gap between the number of girls and boys in higher education in almost all fields (see chapter 3), and an increase in the average age of women at first marriage from 18.4 years in 1966 to 22.4 in 1996 (Iran Statistical Yearbook, 1997). A higher average age at first marriage, entry into the labour-market and increased time spent in education result in a decrease in fertility rates and a decline in the proportion of a woman's life devoted to child-rearing (Division for the Advancement of

[5] There has been a remarkable growth in the nation-wide percentage of literacy, which rose from 47.5 per cent in 1977 to 79.5 per cent in 1996 (Iran Statistical Yearbook, 1997). For Iranian women (6 years old and above), the figures are 35.5 per cent and 74.2 per cent for these years (Ibid.).

Women, UN office, Vienna, 1991). Child-rearing 'now occupies only about seven years of her life in an industrialised country and about 16 to 17 years in a developing country' (Ibid. :40).

Iranian society is no exception to global developments which affect the nations of the world. 'Macro-level economic, political, social, and cultural changes affect the form and functioning of households everywhere. They inevitably alter the pattern of relationships within the household and its relationship with the rest of the society' (Division for the Advancement of Women, UN Office, Vienna, 1991:31). Micro-level relationships at the household level are therefore affected by changing patterns of gender-roles and new definitions of women's roles in society and within the family. The increase in the number of working women in Iran, in both the formal and informal sectors, suggests broader participation of mothers. By taking on working roles, they have started to change the traditional image of a woman. Such women are no longer confined within the boundaries of housewifery and motherhood but firmly linked into broader social spheres of activity and participation. Sometimes attitudinal changes are reinforced by the inevitable need for women's activity to support the household by extra income resources; 'Change has tended to extend women's role by increasing their responsibility for providing household cash income' (Division for the Advancement of Women, UN office, Vienna, 1991:31). Women's work outside the home, their increased socio-economic participation, and the move towards multiple roles for women are, however, sometimes subject to criticism by those who stress that women's household obligations are more crucial and that women's paid work is a threat to traditional values of fulfilled motherhood. Traditional belief, by no means unique to Iran, is that women do not belong in the *public* sphere. This belief is partly reflected in the fact that women still do not occupy a

significant number of key positions in managerial and directing occupations in Iran as well as in many industrialised countries.

Against the background of growing interest in research into the impact of employment on women's health in Western countries, resulting in intensive debates on its positive and negative consequences for their health (see chapter 2), and considering growing labour force participation by women in Iran, my aim in this research on working and non-working mothers in Tehran was to conduct a preliminary investigation into the relative significance of work and other influential factors affecting their health. The research questions are further specified as follows:

(1) If we compare working and non-working mothers in Tehran, how far do we see differences in their mental and physical health status?

(2) If there are any statistically significant differences between working and non-working mothers' mental and physical health, is their 'working-role' (both paid and unpaid work) positively or negatively associated with their health?

(3) Given the broad range of occupations women perform, there are variations in their job-characteristics in terms of the nature of the job as manual or non-manual, part-time or full-time, and the physical and psycho-social conditions associated with different occupations. Consequently, the impact of paid work on mothers' health is expected to vary among women with different working circumstances. Among mothers in general, various living and working

conditions and characteristics may directly and indirectly affect their health. Therefore the focus needs to be further modified to: What other socio-demographic, work-related factors or mechanisms are there which affect mothers' health directly or indirectly, in addition to the specifics related to their paid work role?

The research takes the form of a social survey conducted in Tehran, the capital city of my home country Iran, in the winter of 1998. Hopefully, the research evidence will give the reader new insights into how far Western hypotheses and debates about women's work-health relationships are applicable to Iran, and the extent to which the research results are comparable with research findings in the West. The research explores the extent to which, in Tehran, women's socio-demographic back-ground, individual and household level factors, working conditions and characteristics and social/life context variables affect their mental and physical health.

In the next chapter (chapter 2) I will draw on current debates and evidence on the effects of women's multiple roles on their health in Western countries, where such theories and hypotheses have long been developed and investigated. I will also develop the theoretical model which underpins the concepts and main hypotheses which guide the research.

In chapter 3 the focus shifts to women's political, economic and social status in Iran, exploring religious, cultural and traditional aspects of their lives which may directly or indirectly affect their health. Chapter 4 provides information on the methodological aspects of the survey and details on the operationalisation of the concepts, sampling methods, sample

size, and other methodological issues. Chapter 5 presents univariate and bivariate analyses of the socio-demographic characteristics of women in the sample, and gives information on women's working lives and social/life context variables in relation to their work. Chapter 6 presents bivariate analyses of the effects of women's socio-demographic characteristics, working circumstances and social-life context variables on their mental and physical health. Chapter 7 discusses the results of multivariate analyses on the overall effects of various socio-demographic, working life, and social context variables on women's health. It also reveals the significance and relative importance of each of the main factors with respect to women's mental and physical health status. Finally, in chapter 8, I review, discuss and sum up the evidence and results of the research with respect to the factors influencing women' health in Iran.

Chapter 2

Theories on Women's multiple Roles and their Health

In this chapter a brief summary of the main debates, theories and hypotheses concerning the issue of women's multiple roles and their impact on women's health will be followed by the introduction of the theoretical model of the thesis, based on the theoretical ideas, hypotheses and empirical studies from existing research in the field.

The focus of this research is on the effects of women's paid work, alongside housewifery and motherhood, on their physical and mental health. There is a large body of literature in the West concerning the effects of women's labour force engagement on their well-being. This contains different approaches - both positive and negative - towards women's working role. I turn now to review this research.

Controversial theoretical approaches to work-health relationship

Some sociologists highlight the significance of job-family conflicts for women's health. They argue that combining domestic and work roles may result in *role conflict or role overload* and may, as a consequence, adversely affect women's health (Hibbard and Pope, 1991). This occurs through guilt and anxiety about fulfilling traditional roles (Burke and Weir, 1976) and the role strain that emerges as a consequence of multiple roles (Arber *et al*, 1985). This hypothesis poses that 'there is a danger of 'overload' on individuals who have to balance the demands and obligations of different social roles and suggests that health may suffer in those

with multiple roles' (Bartley, *et al.* 1992:314). Martikainen (1995), among others, refers to the '*multiple role hypothesis*' which argues that since, in the traditional division of household work in industrialised countries, primary responsibility for child-care and household work lies with women, even if they are in waged employment, this may lead to role conflict and role overload. According to this hypothesis, this situation may result in tiredness, exhaustion, and finally in disease and elevated mortality among women compared with men. Referring to women's carer role, Gove and Hughes (1979:144) believe that 'it is an excess of role demands that partially accounts for why women have higher rates of physical illness'.

A similar argument is posed in the '*convergence hypothesis*'. This hypothesis assumes that women will experience the risks of work-related stress as they increasingly enter the 'male world' of employment. Women will gradually adopt 'male life styles' (such as smoking and alcohol consumption) and will therefore suffer the health disadvantages typical of men (Martikainen,1995).

Dennerstein (1995) refers to the '*scarcity hypothesis*' discussed by Barnett (1993) as underlying the theory that multiple roles cause stress, and defines it as 'the assumption that roles drain energy and that women would have insufficient energy for both 'greedy' family roles and paid employment' (Dennerstein, 1995: 507). Waldron *et al.* (1998:218) refer to a similar approach called the '*role strain hypothesis*', which also emphasises the harmful health effects of women's combined roles and argues that 'multiple roles result in role overload and role conflict, each contribute to increased stress and excessive demands on time, energy and psychological resources - resulting in poorer health'.

There are also many hypotheses in favour of multiple roles.[1] Among these are models referred to as *'role enhancement'* (Bartley, *et al.* 1992), *'role expansion'* (Sorensen and Verbrugge, 1987) and *'role accumulation'* (Waldron *et al.* 1998), which overlap to some extent.

According to the *'role enhancement model'*, 'health in both men and women benefits from participation in socially valued activities. Since marriage, parenthood and employment are all socially valued, the more of these an individual participates in, the better their health' (Bartley, *et al.* 1992:314). Sieber (1974:569) emphasises the benefits of multiple roles, recognising four positive outcomes, which are: role privileges, overall status security, resources for status enhancement, and personality enrichment and gratification. Sieber's ideas are based on the *role accumulation hypothesis*, which asserts that employment creates supportive social ties outside the home and marriage. He also asserts that employment can bring self-esteem for women and can free them from possibly tedious and little respected household work.

Waldron *et al.* (1998: 217) add an important modification to the *'role accumulation'* hypothesis which recognises that 'different roles may have a different balance of beneficial and harmful effects'. They argue that, of the three major roles for women, which are marriage, employment and the parental role, it is marriage that may have particularly beneficial effects

[1] As Martikainen (1995) has pointed out, 'Multiple roles' and the 'Multiple role hypothesis' should not be confused with each other: Multiple roles refers to a life situation, where a person has several of the following roles: spouse, parent and employee. The multiple role hypothesis on the other hand is a 'theory' that seeks to explain the effects of multiple roles on mortality.

on women's physical health, but the effects of employment and parental roles may not be as beneficial. Marriage, they argue, could bring benefits such as enhanced social support and financial resources, although there could also be negative effects of marital conflict. With employment, too, there might be expected beneficial effects due to increased income, social support and emotional rewards, along with the negative effects of job-stress and/or occupational hazards. Motherhood would involve both harmful and beneficial effects; 'having children may increase financial difficulties, contribute to either social isolation or social contact, provide both emotional stresses and rewards, and reduce risky behaviour such as cigarette smoking' (Waldron *et al.*, 1998: 217).

Similarly, Nathanson (1980) has referred to the positive effects of employment on health through higher self-esteem and feelings of accomplishment and also favourable social contacts that come from such a socially valued activity (Brown and Harris, 1978; Gore, 1978 cited in Nathanson, 1980).

Sieber (1974) has discussed Merton's (1957) concept of role conflict. This concept, in his definition, 'refers to discrepant expectations irrespective of time pressures. On occasion ego must choose between the expectations of A and B, because compliance with the expectations of one will violate the expectations of the other' (Merton, 1957 cited in Sieber, 1974:567). Sieber continues that, in Metron's opinion, role strain or potential disturbance of a stable role-set is ubiquitous or normal (Ibid.). Sieber (1974) concludes that since, according to Merton (1957), order generally prevails over disorder, then one should seek to identify the social

mechanisms through which a reasonable degree of articulation among the roles in role-sets is secured. In Sieber's view, 'despite the likelihood of role conflict for the working mother, women are seeking a wider role repertoire to increase their resources, privileges and sense of personal worth' (Sieber, 1974: 577). He adds that 'if accumulating roles is sociologically normal and psychologically desirable, it merits far more attention than it has received'.

Providing income and a work identify and structuring one's time are considered to be other advantages of employment (Hibbard and Pope 1991). It is nurturing roles i.e. the roles of wife, parent and caregiver, which have been found to be the most stressful, while paid employment, by contrast, often appears to mediate the health effects of stressful nurturing roles (Ibid.: 218 referring to McKinlay *et al*, 1990).

Dennerstein (1995:507) discusses the '*role expansion hypothesis*' which emphasises the privileges of multiple roles in terms of the effects of rewards such as self-esteem, recognition, prestige and financial remuneration'. Fuller *et al.* (1993:254) have summarised the mechanisms involved as follows:

> Employment may enhance the social contacts of women; employed women may receive social support from co-workers and supervisors and may escape the monotony and low social status of being housewives; and employment tends to be emotionally satisfying, providing both financial security and social resources.

Arber (1991) is of the opinion that women's paid employment should be viewed both as an additional role and as a structural variable. The additional role may result in more demands and responsibilities for women but at the same time, by rewarding them with a position in the labour market, it could enhance their command over financial resources and give them a chance to influence both their own life chances and those of their family. She believes that failing to analyse the effects of roles within the structural context of women's lives is the problem with many 'role based' analyses; 'it is essential to consider *both* women's roles *and* the material circumstances within which those roles are enacted' (Arber, 1990: 41).

Concerning diverse evidence and research around the debate of whether multiple role occupancy is detrimental or beneficial for women, Hunt and Annandale (1993: 635-6) support Arber's argument and remind us that:

> Conflicting evidence has highlighted the complexity of the issue as the debate has evolved (...) and there is evidence that the balance of benefits, on the one hand, and strains and conflicts, on the other, is more *context specific.*

Going on to refer to the example of the Health and Lifestyle Survey, Hunt and Annandale (1993: 635-6) summarise research which suggests that:

> Paid employment (and particularly part-time work) is associated with good physical health in *middle class women*, but not amongst *working class women* (although when mental health was considered, the presence of young children was an important correlate

of poor mental health in both groups) (Elliot and Huppert, 1991). Thus the impact of multiple roles will be mediated by *women's structural position.*

In terms of the opposition between 'role enhancement' and 'role overload' hypotheses, Bartley *et al.*'s (1992: 339) findings show some evidence that 'in relation to physical health state, full-time paid work is associated with work overload for women in professional and managerial jobs, and with no benefit in relation to malaise. In this group only part-time work would appear to involve any possibility of role enhancement, and this only in relation to the experience of malaise'. Therefore as Sorenson and Verbrugge (1987) have pointed out, there is a need to take account of the importance of the differential job conditions and role configurations, which actually lead to positive or negative health consequences.

In their paper on the interacting effects of women's roles, Waldron *et al.* (1998) have highlighted other hypotheses which are considered to be important in discussions on women's roles and their impact on women's health. They refer to the '*role complementation hypothesis*', which proposes that 'some pairs of roles may have complementary, synergistic, or buffering effects so that the benefits of one role may be greater for women who also have the other role' (Waldron *et al.* 1998: 218). As an example, they refer to the financial and psychological effects gained by marriage, which may be of particular benefit for women with parental responsibilities, in the same way as motherhood could bring more beneficial health effects for married women. As to women's employment, Waldron *et al.* (1998:218) refer to scholars' (see Waldron and Jacobs, 1989 Ross *et al.* 1990) suggestions that 'employment may buffer the stresses of child-rearing by providing social support and time away from children's

demands as well as needed financial resources, so employment may have a more beneficial health effect for mothers, and motherhood may have a less harmful health effect for employed women'. They also consider the relevance of the '*age-related parental role strain hypothesis*', which proposes that 'the ages of a woman's children and the woman's age when she has her first child can influence the extent of role strain, and thus can influence whether the parental role has harmful effects on health'(Waldron *et al.* 1998:218). Therefore, they argue that 'the combination of employment and motherhood may have particularly harmful health effects for women who combine full-time employment with parental responsibility for young children and/or many children' (Ibid.: 218).

Recent research of the 1990s on health and role-occupancy has moved on to include the issues of people's role-*quality* and role *experiences* rather than merely looking at role-occupancy, as noted by Annandale and Hunt (2000) who have highlighted findings on the importance of the experienced quality of a single role as well as a combination of roles as better predictors of health. Role quality is therefore associated with women's health outcomes. Barnett and Marshal (1991:112) write: 'role quality refers to the relative rewards and concerns a woman experiences in a given role'. We can expect it to be positive 'as long as her level of reward exceeds her level of concern' (Ibid.:112).

Dennerstein (1995:507), referring to accumulating research evidence (Barnett, 1993) writes that 'women's job-roles are central to their psychological well-being' and continues that 'it is women's family roles, generally the role of mother', which are high strain roles' by being both

low in control and high in demand. 'The role of mother' she continues 'may be women's primary source of stress' (Ibid.: 507). Referring to Barnett and Baruch's study (1985), Dennerstein (1995:507) reminds us that 'only the role of mother (not that of wife or paid worker) was related to the experience of role strain - that is, role overload and role conflict'. In general agreement, Barnett and Marshal (1991:112) relate that 'role quality is an important predictor of mental health'.

In sum, the various theories and hypotheses which have so far been reviewed have proposed both positive (role accumulation, role-enhancement) and negative (role strain) health outcomes in relation to women's engagement in multiple roles. As far as Western societies are concerned, seemingly evidence on the positive effects of role occupancy outweighs the negative. Annandale and Hunt (2000) in their recent review stress multiple roles as an influential framework, which is still developing as new more complex hypotheses emerge with regard to various specific roles and role combinations and their experience by women.

The hypotheses considered each seem to highlight a different aspect of the reality of women's lives and their roles. Thus, each is concerned with only *part* of the reality, whereas the whole picture might be more complex and multi-faceted. The different approaches do not actually contradict each other, but rather speak of different phenomena existing side by side. Thus, for example, women who work may gain self-esteem from the jobs they perform (as suggested by role-enhancement hypothesis), but on the other hand the increased work-load (responsibilities towards the home *and* workplace) inevitably increases the risks of suffering stress and

subsequent mental or physical problems (as posed by role overload hypothesis). Therefore, I do not limit the scope of this research to this or that approach, but open-mindedly try to examine the dimensions of various approaches.

The relevance of applying theses approaches to women in Iranian society with its particular historical and cultural background requires further exploration. Basically, however, in this research I rely on this assumption that women's main gender roles (wife and mother), and even the new role (of paid work), are experienced by women in a more or less similar manner throughout the whole world. Why should we for example expect 'motherhood' to be remarkably less demanding in an Eastern society, the job-role to be markedly more stressful in a Western society or visa versa! Therefore I begin by looking at the hypotheses as if they are equally true for Iranian women and for Western women, and then, having taken account of various factors involved in the work-health relationship in different levels, evaluate the potential role of cultural background and societal differences.

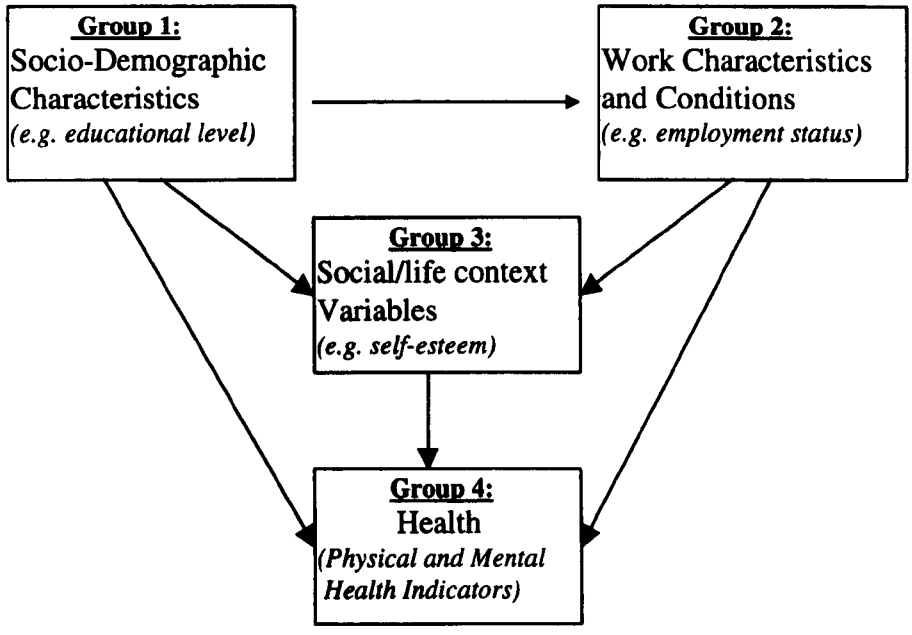
The focus of this study

Having reviewed the theoretical and empirical literature in the West, I categorised the different factors assumed to be involved in the multifaceted relationship of working role and health, put together the key concepts, and developed a model suggesting links and interconnections.

The factors and variables of interest are at different levels, both structural and individual, and they are multi-dimensional. The basic model upon which I built the hypotheses for this survey

consists of several main components each including a series of variables, which are presented in Figure 2-1.

Figure 2-1. Theoretical model of potential factors influencing women's health



I assume that, in general, the group of socio-demographic factors (Group-1) is related to the group of work characteristics and conditions (Group 2). Both Group 1 and 2 influence Group 3 variables which are a set of life/social context variables, which in turn are assumed to affect Group 4 variables (indicators of women's mental and physical health). There could be potential recursive effects and relationships among these sets, but I limit my hypotheses to some of the relationships and/or covariations, elements of which have already been discussed in the relevant literature. After introducing the main variables in each main group in the theoretical model, I refer to the relevant literature to explain why these particular concepts or factors are chosen and I present my own hypotheses on probable relationships between the

variables from my research which appear not to have been discussed in the literature. The variables within each main group are as follows:

Group 1:

In the first group, namely socio-demographic and back-ground factors, variables of interest are: respondent's age and educational level[2], husband's education and income, the household material resources and socio-economic status, respondent's father's and her husband's occupational class, the family-size, age of children and the role of care-taker.

i) Age

The impacts of socio-demographic factors on women's health have already been referred to in the literature. Among hypotheses concerning the impact of parenthood on health, researches have discussed the effects of number of children and their age[3] on women's health (see Sorenson and Verbrugge, 1987). A woman's age and the number of her dependants are among factors Arber *et al.* (1985) considered as influential on the relationship between women's employment and her well-being.

[2] Since the research concerns the effects of multiple roles on women's health, the unit of observation in this survey is married women who are also mothers, in or out of paid work.

[3] As for the age of children, Rivkin (1972) found that women with pre-school children and employed women report less morbidity than their counterparts with older or no children. A study by Elliot and Huppert (1991) showed that signs of psychological disturbance were more likely to be found in married women with small children than among those with older children. According to Dennerstein (1995:506), specific conditions may increase the stressfulness of employment and reduce its positive effects. These include the presence of very young children and a large number of children among other factors.

ii) Education

Arber (1997:776) has highlighted the determinant role of education in relation to health; 'the key structural factors which influence the individual's health are occupational class and employment status, both of which are influenced by the individual's level of educational qualifications'. In her British study she found that 'educational qualifications are particularly good predictors of women's self-assessed health' (Ibid.:785).

Although Stein (1997:190) points out that globally 'there has been little more than speculation about the ways in which education improves health', there is research evidence on the effects of differential educational achievements on individual's health outcomes. According to Williams *et al.* (1997:827), 'among women, research suggests that low educational achievement is associated with poorer psychological health'. Research by Costello (1991) has shown that 'being in paid employment reduced the risk of psychological morbidity among those with poor education' (cited in Williams *et al.* (1997:827). Reminding us of the limiting consequences of low education on employment chances, Williams *et al.* (1997) also refer to the results from Verbrugge's (1989) study which revealed that 'low education and consequent restricted employment opportunities are associated with poor mental health among women' (Williams *et al.*, 1997:827).

iii) Other background factors

It seems that a woman's father's socio-economic status may deeply affect her chances of positive social mobility in adulthood by, for instance, providing her with a good financial basis to pursue higher educational qualifications (as well as enhancing her chances of getting married to a higher status spouse). Her own educational achievement may, in turn, influence her chances of holding a higher status job. In terms of her spouse's demographic characteristics, having a husband of higher educational achievement tends to be associated with higher household income, better material resources and, in the case of working women, perhaps a more equitable division of domestic labour. According to Baxter and Western (1998:102) 'as women's economic resources increase in comparison to their husbands', women spend less time on domestic labour and men spend more time on domestic labour'.

I assume that academically qualified husbands, and/or younger husbands are more liberal or less traditional in respect to gender-role views and beliefs and therefore are likely to be inclined to show more affection, appreciation and companionship to their wives. They may be more supportive of their wives pursuing a career besides their traditional roles of mother and wife.

Higher education is usually associated with smaller family-size, may lead to a higher health awareness and positive health behaviours, enhancing women's chances of developing and maintaining a healthy lifestyle.

As education increasingly has a determinant effect on individual's chances of taking on a career (Arber and Cooper, 2000), women's educational level will influence their labour market position, in spite of factors such as job-segregation and socio-cultural barriers. That is why the work and work related group of variables is put next to the socio-demographic group of variables and the mutual relationship between the two in the model has been emphasised.

iv) Women's caring role

The perceived image of carers is predominantly a female one, and women are more likely than men to look after someone sick, handicapped or elderly among family members, relatives or friends. Gove and Hughes (1979:143) hypothesised that 'the sex differences in health are largely due to the nurturant role demands confronting women which prevent them from taking good care of themselves and their relatively poor mental health which, based on the literature, also was assumed to be largely associated with the women's role'. The overall results of their studies indicated that 'the sex differences in physical health largely reflect real differences in physical health, and this difference can be attributed to women confronting more nurturant role demands and generally being in poorer mental health'. Women's caring role besides their housewifery, motherhood and work roles will be examined to see how it affects their health outcomes. Waldron (2000:176), referring to her USA study on aspects of gender roles, notes that,

> Women have been more likely to adopt behaviours which can contribute to care of the family in the modern context, and have been less likely to adopt behaviours which are perceived as incompatible with women's responsibility for family care.

Group 2:

In the second group of explanatory variables (work and work-related variables), the respondent's occupation, her paid work characteristics such as employment status, income, her occupational class (according to the International Standard Classification of Occupations) and her physical and psycho-social perceived work conditions are all believed to influence women's health.

Doyal (1995) refers to studies which show that employed women as a group have better mental health than those remaining outside the labour force (See also Repetti *et al*, 1989, Waldron and Jacobs, 1989; Doyal, 1995; Dennerstein, 1995). 'A growing body of evidence suggests that full-time housewives have poorer health than employed women, which cannot be explained by health selection of women with poor health into the housewife role' (Arber, 1997:775).

Doyal (1995) recognises that financial need, personal preference, domestic circumstances and job opportunities are factors which could motivate women to take paid work. Concerning the importance and impact of attitudes toward employment, which seem to be linked with health, Waldron and Herold (1986 cited in Hibbard and Pope, 1993:218) found in the USA that 'for women with favourable attitudes towards employment, being a housewife had more detrimental health effects than being employed'. Arber *et al.* (1985) consider women's skills, attitudes to employment and the nature of the job as factors which influence the relationship between women's employment and well-being.

Here I highlight some of the research evidence on different aspects and characteristics of women's work which lead to particular beneficial or detrimental effects on their health and/or factors associated with poorer or better health at work.

i) Job-conditions:

The key question is not, as Doyal (1995:155) stresses, 'whether paid work in general is good for all women, but rather what the conditions are under which specific types of work will be harmful or beneficial for particular women in particular circumstances'. In this respect Lennon (1994) considers the need to examine specific aspects of the lives of employed women more closely, such as the conditions of their jobs (Lennon and Rosenfield, 1992; Loscosso and Spitze, 1990; Lowe and Northcott, 1988 cited in Lennon, 1994:236) among others. In short, according to Lennon (1994), the evidence shows that an excess of family demands and poor job situations combine to reduce the beneficial effects of employment on wives' well-being and therefore suggests investigating the ways in which social roles organise daily life. According to Sorenson and Verbrugge (1987:235), 'due to the likelihood of the fact that all of the models [theoretical approaches concerning women's multiple roles and work-health relationship] contain some truth ... the scientific task, therefore, is to identify the job conditions and role configurations, that lead to positive or negative health consequences'. I consider some of the working conditions and characteristics, which are expected to affect health:

a) Part-time/full-time

Arber *et al.* (1985) point out some advantages of part-time work for women, since full-time work among young married women with children may have detrimental effects on self-reported restricted activity days due to illness. Elsewhere, Arber (1997:775) refers to British research findings which show that the health of women who worked part-time was somewhat better than women working full-time and 'much better than full-time housewives'.

As for women's health status, Arber (1990:51-52) has found 'among married women, the best health status is reported by those working full-time in non-manual jobs, and the worst by unemployed women previously working in manual jobs.... Women working part-time in manual jobs have better health than those working full-time. In all other cases manual women report poorer health than non-manual [women]'.

Bartley *et al.*'s (1992: 338) British research confirms that 'women with full-time and part-time paid work are more likely to experience lower levels of physical and psychological symptoms than housewives'. They found part-time work to be more advantageous than full-time, and that 'the benefit is greater in terms of psychological than physical well-being' (Bartley *et al.* 1992: 338).

b) Working in and out of the home

Lennon (1994: 235) reviewed early studies of the psychological consequences of wives' employment, and the comparison of working in and out of the home, which indicated that 'working outside the home generally benefited women emotionally'.

Apart from mental health risks, there are some work-related physical health hazards which are known to affect women particularly those of lower socio-economic groups engaged in traditional home-based [paid] work such as carpet and rug weaving (Ahmad-Nia, 1996). Working at home is associated with poorer physical job-conditions such as inadequate light, damp and unsafe equipment (Ghavamshahidi, 1995).

c) High-income/high status jobs

Some evidence confirms that managerial and professional jobs provide a better opportunity for women, through higher pay, to reduce the burden of homework and child-care, thus alleviating fatigue and stress (Doyal, 1995).

Bartley *et al.*'s (1992: 317) British findings suggest that 'having a high income influences the individual's sense of personal efficacy'. Here it was income rather than employment itself which improved psychological health.

Comparing higher status jobs and lower status ones, Dennerstein (1995: 506) believes that 'although being employed is beneficial even to women in low-level jobs, viewing one's work

as a career rather than a job is associated with greater work satisfaction and less role conflict'. Others have emphasised employment-related stress, which can harm the well-being of workers, and have referred to specific work environments and tasks which are by themselves injurious to health (see Miles, 1991; Doyal 1995). As Doyal (1995:165) considers,

> they are poorly paid, low status jobs that make high demands but offer little opportunity for control. Most factory work fits into this category since it involves monotonous, uncreative, rigid tasks with a high level of supervision, sometimes carried out by machines. Even those works dominated generally by women, which were assumed to be less stressful (such as nursing and clerical jobs) have proven to be in fact causing tension and distress for women much more than expected.

This stresses the importance of the way a worker herself perceives her own working conditions regardless of objective characteristics. The way the working environment and conditions are subjectively perceived by women (or men) seems to have an important influence on their role-quality and the satisfaction they get from work, which in turn affects their well-being.

Concerning work related health hazards, Emslie, *et al.* (1999:36) point to considerable research evidence in studies of both white collar and blue collar workers that 'various job-related factors (such as work related self-esteem, work pressure, job satisfaction, physical working environment, degree of variety, and challenge in work, decision latitude) are extremely powerful predictors of physical and psychological morbidity'.

Obviously the above mentioned factors are mostly overlapping and interconnected so that it is difficult to draw a clear line to distinguish their boundaries. It is important to note that women's working role may vary remarkably in relation to these factors, with consequent modifications of the impact on their health, and thus that consideration of all working conditions is vital in the analysis.

Group 3:

The third group of explanatory factors includes a wide range of variables, which are expected to be affected by both groups of demographic and work-related variables and also themselves to affect health outcomes. These include negative factors such as role conflict and stress, and positive ones such as self-esteem, social support, economic independence and satisfaction (with its various dimensions). Variables such as satisfaction, the division of household responsibilities, and health behaviours are also considered among this group of variables:

i) Social support:

Studies concerned with role characteristics frequently consider social support and its linkage to health outcomes. Social support and social relationships are believed by Frankish *et al.* (1998) to be key aspects of a person's life circumstances and major influences on health and well-being.

On the importance of emotional support from family-members, Doyal (1995) believes that the home can be a source of companionship and provide a network of relationships to alleviate the isolation and feeling of worthlessness commonly expressed by women at home. Miles

(1991) reminds us of the importance of social support in influencing the progression of disease. Thus 'good social support can improve adjustment, lessen the risk of complications, and increase the chances of recovery' (Miles, 1991: 93) (see also Vaughn and Leff, 1976; Venters, 1981; Funch and Mettlin, 1982).

Lack of a strong network of social relationships has been identified as a major risk factor for health, with implications as serious as those for cigarette smoking and high blood pressure. 'Such risk factors are often clustered in population groups with lower socio-economic status and this has led to the hypothesis that social support constitutes a causal link between poverty and poorer health, particularly in cases when a disease is stress related' (Baker, 1997: 1325). 'This assumption', Baker adds, 'is built on the premise that social support acts as a 'buffer', by decreasing vulnerability to stress and increasing host resistance to disease'.

> Supportive relationships are likely to be particularly important in relation to health at times when additional emotional and physical demands are made (Baker. 1997:1325).

Bowling (1997:25) also explains that 'social support affects health by protecting the person against the negative impact of stress, through, for example, the potential for offering resources such as financial or practical assistance and/or emotional support'.

Social support is also believed to be provided by working outside the home, promoting women's mental and physical health (Doyal, 1995). Dennerstein (1995) refers to research by Parry and Shapiro (1986) which found that, in the case of working class women, working

outside the home was associated with *less depression* where there was good social support, but *more depression* where there was not good support (Dennerstein, 1995: 506).

Macintyre (1986) also reminds us that lack of social support and isolation for married women who do not work outside the home may be stressful and affect their health. Social interaction with co-workers has been expressed by women workers as a major benefit of employment. Such interaction may fulfil needs for affiliation and support.

By highlighting the important role of male partners, Dennerstein (1995:508) believes that 'increased instrumental and emotional support by male partners would help maximise the potential beneficial effects of work outside the home for women'.

ii) The domestic division of responsibilities and women's work role

Undertaking new role obligations has resulted in more responsibilities for women to bear, since in most Western countries, as well as in the Third World, the first responsibility of housekeeping and child-caring is still upon women's shoulders, whether or not they are employed. As Hunt and Annandale (1993:633) have remarked, 'whilst women's involvement in the sphere of paid work has increased, there is little evidence of a more equitable division of domestic labour'. Martin and Roberts (1984) have also argued that, although the majority of married women are economically active for most of their employable years, the jobs that they take are often designed to fit in with their domestic duties.

Arber *et al.* (1985) have considered women's marital status and the domestic division of labour in the household along with other factors such as a woman's age and the number of her dependants as factors which would influence the relationship between women's employment and their well-being. They explain that 'the extent to which partners contribute to the domestic division of labour will influence a woman's ability to manage the demands of the number of roles, and the likelihood of role-overload and poor health state' (Arber, 1990: 54).

Speakman and Marchington (1999:83) believe that 'changes in employment patterns, such as increasing numbers of working women, changes in hours of work and the distribution of hours, appear to have had little (if any) effect upon the gender distribution of activities in the home'. However there are assumptions that 'a more equal distribution of housework is likely where there is a more equal distribution of paid work activity within individual households' (Ibid.: 83-4). Globally, 'inequitably shared domestic responsibilities and the constrains of male-dominated systems inhibit women's participation in many of the benefits of change in every part of the world' (Division for the Advancement of Women, UN office, Vienna, 1991:31).

iii) Economic independence and autonomy

Doyal (1995) believes that by earning their own income women enjoy autonomy which reduces their dependence on male partners. I assume economic independence to be influential on women's mental well-being and perhaps positively associated with their self-esteem (also hypothesised to affect health positively). However, since it is not just waged working women

who may enjoy economic independence, i.e. non-working women also might prefer to act independently when it comes to taking financial decisions concerning their own wealth and commodities, this factor may potentially be associated with paid work as well as with many other relevant factors such as, for example, a woman's educational achievement, husband's attitudes, or socio-economic status.

iv) Role quality

Muller (1986) found that better health is associated with desired, positive roles such as marriage and married parenthood, while worse health is associated with unwelcome and more burdensome roles such as single-parenthood, child disability, having a sick spouse, and marital dissolution. Similar ideas have been stated by Hibbard and Pope (1991: 810), emphasising the quality of performing roles:

> Also worthy of further investigation is the extent to which the quality of roles is related to morbidity and mortality. As several researchers (see Muller, 1986; Waldron and Herold, 1986; Verbrugge, 1986) have noted, the quality of roles, the degree to which roles are willingly assumed, and the subjective evaluation of role may be much more important predictors of health than simply role occupancy.

Later, they also argue that

> The role occupancy approach fails to examine how the nature of a particular role might enhance or impair health. A clear assessment of the effect of multiple roles on health must investigate the inherent characteristics of roles and how those roles are

experienced: the privileges, disadvantages and stresses, as well as satisfactions'(Hibbard and Pope, 1993:217).

As Hibbard and Pope (1993), have noted, role quality depends on both subjective experience of the role, and the objective characteristics of the role.

v) Health selection

Studies by Baruch and Barnett (1986) and Kendel *et al.* (1985) support the idea that the characteristics of roles and how individuals perceive their roles are related to health and well-being. But, as mentioned by Hibbard and Pope (1993), they show, at the same time, that alternative interpretations of the findings are possible due to the fact that the majority of studies are cross-sectional (and not longitudinal, which would show causal relationships). Referring to health selection, they argue that 'poor health, rather than a result of unsatisfying or low quality role characteristics, may be a deterrent to the establishment of such roles (Hibbard and Pope, 1993:217). Arber (1990) too has questioned the direction of causation between role occupancy and health status. She writes, 'the pattern of associations suggests that the predominant direction of influence is from poor health status to reduced participation in the labour market. Poor health is likely to affect whether a woman re-enters paid employment after childbearing, and women may be particularly likely to leave employment because of ill health' (Arber, 1990:51).

On the mutual effects of roles and health, particularly employment, Waldron *et al.* (1998:219) write, 'current research evidence demonstrates that women in good health are more likely to

get a job and less likely to leave employment'. 'This selection effect' they argue, 'appears to make a substantial contribution to the association between employment status and health, which is observed in cross-sectional data'. Bartley *et al.* (1992:340-1) conclude, however, that 'when selection is controlled for, and when the amount of domestic labour is taken account of, there remains a strong case for arguing that paid employment is associated with role enhancement in terms of women's experience of malaise symptoms'.

vi) Illness and health behaviour

In the context of employment and health, it has been found that women's responses to symptoms of ill health vary with the number and the character of their other role obligations (Nathanson, 1980). Thus, 'women with heavier role obligations will respond to perceived symptoms by visiting a physician, while fewer responsibilities will be associated with self-treatment at home' (Nathanson, 1980:463).

Health behaviours have been an important element of research on health status in recent years. Here the distinction between health behaviour and illness and sick role behaviour is important. Bowling (1997:33) reminds us of this by referring to Kasl and Cobb's (1996) definition of *health behaviour* as

> An activity undertaken by a person who believes him or herself to be healthy for the purpose of preventing disease or detecting it at an asymptomatic stage. Other conceptualisations of health behaviour incorporate actions undertaken regardless of

health status to prevent disease, actions undertaken to promote health and both medically approved and lay actions, regardless of their effectiveness'.

On the other hand, illness behaviour is defined by Kasl and Cobb (1996) as behaviour aimed at seeking treatment (e.g. consulting a doctor), and sick role behaviour as activity aimed at recovery (e.g. taking medication).

I reviewed Group-3 variables, i.e. life/social context variables, in this section. Concerning this group, it can be concluded that for women in general and for women in high-income or high-status jobs in particular, working is expected to be associated with higher self-esteem and a sense of worth. Paid work may improve their well-being and enhance their social support through mechanisms such as broadening their social contacts and friendship opportunities. On the other hand, women working in disadvantageous conditions, for instance in lower status jobs or poorer work environment, or women who have smaller children, and/or a caring role besides their housewifery, motherhood and the working role, may experience increased levels of stress.

Heavy responsibilities at work as well as at home, - since the responsibilities of child-care and housewifery even in highly industrialised societies still fall mainly on women's shoulders-, may bring about feelings of guilt, overload, and role conflict for working mothers. These are expected to be experienced especially by mothers from lower socio-economic groups whose prime motive for working is financial need, who are often recruited into manual, service or manufacturing jobs. In such situations evidently one can not always expect women to

experience much of the presumed rewards a working role would otherwise promise. A job may bring also the fulfilling sense of financial independence and the feeling of being more in control of one's life, as well as feelings of self-enhancement and role-satisfaction. For some, it is not merely financial reward which motivates them in taking a job, but also the positive feelings of self-realisation, enhanced social life and opportunities for making a difference in their own and their families' lives.

Support from family-members and marital companionship also play a crucial role in determining women's health. Husbands' support for women's working role is realised through positive attitude and appreciation, or through greater practical help and participation in the housework and child-care responsibilities (so that the burden of household responsibilities and the amount of role-conflict for working mothers can be lessened). This seems to be influential in women's well-being. Therefore, there are prerequisites for the working role in order for it to be beneficial in terms of mental as well as physical health, otherwise the connection may not be maintained. Health and illness behaviours, which are believed to be affected by both demographic factors and working role, will also be examined among this group of variables.

Group 4:

A range of indicators of physical and mental health form the components of Group-4 variables in the theoretical model. The conceptualisation of Group-4 variables will be discussed in the forthcoming methodology chapter.

The review of the main theoretical debates over the work-health relationship in this chapter resulted in the formation and discussion of the general theoretical model of this research and its components which, as noted earlier, is largely Western-based. The sets of hypotheses, which derive from the theoretical model are listed here, the concepts of which will be discussed methodologically in chapter 4 and the analyses of which will be discussed in detail in chapters 5 and 6:

Category-A hypotheses (the associations between Group-1 and Group-2 i.e. socio-demographic and work-related variables):

a-1. Women with higher educational levels are more likely to be in paid work.

a-2. Women with husbands with higher educational levels are more likely to be in paid work.

a-3. Women with husbands of higher educational level are more likely to be in non-manual jobs.

a-4. Women of higher educational levels are more likely to have high-income jobs.

a.5. Working women are more likely to be of higher age at first pregnancy.

a-6. Women who are in paid work are more likely to have fewer children.

a-7. Women with fathers of higher occupational class are more likely to be married to husbands of higher occupational classes.

Category-B hypotheses (the associations between Group-2 variables, i.e. women's work and its conditions and characteristics', and Group-3 variables i.e. life/social context variables)

b-1. Working women in full-time jobs are likely to experience more stress than part-timers.

b-2. Working women in full-time jobs are likely to experience more role-conflict.

b-3. Working women with higher incomes are likely to have higher self-esteem.

b-4. Working women in non-manual jobs (nature of the job) are more likely to perceive better psycho-social job conditions.

b-5. Working women in non-manual jobs are likely to perceive better physical job conditions.

b-6. Working women in non-manual jobs are likely to have higher satisfaction (with respect to their main roles as mothers, housewives and work role).

b-7. Working women are more likely to have financial independence than non-working women.

b-8. Working women enjoy broader social support.

b-9. Women workers whose husbands disagree with their working role, are more likely to experience role-conflict.

Category-C hypotheses (the associations between Group-1 i.e. 'socio-demographic factors' and Group-3 i.e. a number of 'life/social context variables)

c- 1. Working women with husbands of higher education are more likely to enjoy greater agreement from their husbands on their working.

c-2. Women of higher educational level are more likely to engage in health-promoting behaviour

The category-D hypotheses (the relationships between group 3 and 4 (health outcome variables):

d-1. Women with higher self-esteem are likely to be in better health.

d-2. Women with broader social support are likely to be in better health.

d-3. Women experiencing more stress are likely to be in worse health.

d-4. Women with higher satisfaction are more likely to be in better health.

d-5. Women experiencing role-conflict are likely to be in worse health.

d-6. Women with better behaviours are likely to be in better health.

d-7. Women from households with a more equitable division of household responsibilities are more likely to be in good health.

Category E-hypotheses: (the associations between Group-1 and Group-4 variables)

e-1. Younger age is associated with better health.

e-2. Women with a care-taker role are more likely to be in worse health.

e-3. Working women with under-school age children are more likely to be in worse health.

e-4. Women from households with better material resources/ higher socio-economic status are more likely to be in better health.

Category F-hypotheses: (The associations between Group-2 and Group-4 variables)

f-1. Women with better psycho-social conditions at work are more likely to report better mental health.

f-2. Women with worse physical conditions at work are likely to be in worse health.

Before considering the methodological details of this research, the following chapter will provide the reader with a general introduction to the socio-cultural aspects of women's lives

as well as highlighting some facts about women's work, education, leisure and family relations in Iran.

Chapter 3

Women in Iran

In this chapter I look at general aspects of Iranian women's lives in terms of their social, political, economic and cultural circumstances. This is to provide the reader with an idea of how far the Western-based theoretical framework I have been using in this research may be feasible in studying women in Iran. A brief introduction to Iran sets the context.

The Iranian context

The Islamic Republic of Iran was established following the victory of the Islamic Revolution in 1979 under the leadership of Ayatollah Khomeini. This revolution dethroned Mohammad Reza Pahlavi, the Shah (king) of Iran.

Iran is a large Muslim (Shia') country in the Middle-East with some 66 million people and an area of 1.648 million square kilometers, which encompasses several ethnic groups with Persians as the majority, followed by Azerbaijani (Turks), Gilaki and Mazandarani, Kurds, Arabs and a few others. Of the overall population in 1996, 61.3 per cent lived in urban areas, compared to only 31 per cent in 1955 (Iran Statistical Yearbook. 1997). Iran is a developing country, which is rapidly undergoing an urbanisation process. 'Iranian urbanization in recent decades has accelerated to become among the most rapid in the World outside Africa' (McLachlan, 1992:219). Tehran, the capital city, 1100 meters above sea level, is the largest and most populated city in Iran and one of the world's mega-cities. Today Tehran, with an

area of 625 square kilometers, has a population of some 10 million. Around 60 percent of the total country's industry is based in Tehran (Eslami-Nodushan, 1997).

Debates over Iranian women's roles and their status

Since the revolution of 1979, women's status and the evaluation of changes to their situation as a result of the establishment of the post-revolutionary regime have been subject to a large body of literature developed by both Iranians and foreign scholars.. Najmabadi (1991), an Iranian scholar, has reviewed such literature, and classifies it into several major approaches. According to this classification, pro-Pahlavi sources point to the [pre-1979] growing participation of women in the workplace, the increasing rate of literacy and the more prominent profile of women within higher education and in professional careers:

> They point to the increasing integration of women into political life, evidenced by the granting of female suffrage by the Shah in 1963, the election of women to the Majlis (parliament) and the Senate, their appointment as judges and members of the cabinet. They refer to 8 Jan, 1936 (when Reza Shah decreed the compulsory unveiling of women in all public places) as the day of women's liberation in Iran, as a feminist holiday (Najmabadi, 1991:49 drawing upon Pakizegi, 1978, Afkhami, 1984, and Elwell-Sutton, 1978).

On the other hand, there are secular critics of the Pahlavis who, according to Najmabadi (1991:49-50), emphasise the 'limited nature of these reforms, the continued legal, economic and social inequalities of women' under that regime and argue that 'these reforms were more

cosmetic than substantive, and that the overall economic and social changes under the Pahlavis intensified women's oppression in Iran, except possibly for a small minority of upper class women'.

'Islamic critics' also, according to Najmabadi (1991:50), 'share the opinion that the changes under the Pahlavis were undesirable and responsible for moral corruption and the subordination of an Islamic society to neo-colonialist powers'. This group 'refers to 8 January, 1936, as the day of shame, symbolising the assault of corrupt Western culture upon Islamic values, the effect of which has been the undermining of public morality (Najmabadi, 1991:50 referring to Vahed, 1982).

As for post-revolutionary (1979 onwards) Iran, again there are opinions for and against. Those critical of the Islamic regime, according to Najmabadi (1991:50), refer to 'compulsory veiling, barring of women from the judiciary, segregation in transport, sports and many public places and the introduction or re-imposition of discriminatory laws'. She furthermore quotes from Afshar (1985) who believe that, under the Islamic republic, "women have become second class citizens, who have no place in the public arena and no security in the domestic sphere" (cited in Najmabadi, 1991:50).

There are also 'writers sympathetic to the Islamic republic', Najmabadi continues, who argue that:

> what is upheld as equality of rights in Western societies is in fact similarity of rights, and that women's quest for such similarity of rights is both immoral and unjust, running contrary to the divine plan as well as the natural disposition of women. In their view, women and men are created differently and are suitable for different roles in their social and private lives. Given such differences, equality between the sexes becomes injustice (Yegane, 1982 cited in Najmabadi, 1991:50).

This approach believes that under the Islamic regime, with the social atmosphere purified of the old corrupt practices, Iranian women are capable for the first time of finding 'meaningful social involvement without demeaning themselves by becoming exposed to non-Muslim practices' (Najmabadi, 1991:50).

There is also a literature on the impact of the Revolution (1979) on gender relations in Iranian society. Paidar writes (1995:217):

> Mass demonstrations shouted slogans against the conception of women as 'sex-objects' and demanded 'respect' and 'social value' for women. The Pahlavi dynasty was labeled as the 'spreader of prostitution' and the 'corrupter of women and family'. It was demanded that 'alien Western culture' adopted by the regime of the Shah be uprooted.

Women's active participation during the period of the Revolution is also appreciated in the Constitution of the Islamic Republic of Iran (1999) as it states,

> the wide-spread solidarity of men and women of all segments of society and of all political and religious factions played a clearly determining role in the struggle. Especially the women were actively and massively present in a most conspicuous manner at all stages of this great struggle.

Referring to male-female interaction during the Revolutionary period, Paidar (1995:218) furthermore believes,

> women who in the past could not walk in the streets on their own without being accosted or physically molested, were now able to move about freely. They now participated in huge mixed demonstrations when before they had dreaded using mixed public transport. To a lot of women, the most liberating experience of the Revolution was the sense of freedom to mix with men without being harassed. Women were now addressed as sisters, and treated as such.

This large and supportive participation of Iranian women in the Revolution of 1979 has also been highlighted in reviews by a number of Western writers. Higgins (1985:486) for example writes,

> women in provincial towns and cities as well as in Tehran - women of ... [different] social classes, those who were newly urbanised as well as those of established urban background - did engage in public political activity during the revolution.

Higgins (1985) refers to some unexpected positive effects on women's lives. Thus, 'many observers have noted the increased sense of power and self-confidence, the expanded political consciousness, and the perception of greater respect many women experienced as a result of these activities' (see also Haines, 1980; Mahdi, 1981; Farhang, 1979 cited in Higgins, 1985). Higgins (1985: 490) goes further by putting forward the question of competing ideologies of 'sex roles' and suggests that 'Iranian women, although politicised by the revolution, would not likely campaign *en masse* for equal rights in the Western sense even if more immediate economic and physical needs were met'. 'Such protest', she continues, 'is unlikely because most Iranian women do not share the definition of equality or the vision of an ideal society, on which Western feminism is based (Ibid.: 490.). According to Higgins (1985:491), 'some women (and men) objected to the Pahlavi reforms because they found them 'meaningless "paper" changes, or worse, as the source of new Western forms of women's degradation and exploitation. Others were opposed because, in their view, equality of the sexes should be sought within the framework of a sex-segregated society.' (Ibid.:490).

Higgins (1985:491) describes the various roles of Iranian women as the ideals of different groups. For example, she refers to 'established middle-class families' who support 'an image of the Iranian woman as educated and employed, comfortable in mixed social groups, sophisticated, and a consumer of all the material luxuries of the developed world'. She also refers to others from the same class, who 'have adopted leftist models', and look for a 'revolutionary' woman, 'struggling with men on an equal basis, scornful of material luxury and physical comforts and expecting the liberation of women ...' (1985:491). However, 'neither of these images can have much meaning', she believes, 'for the bulk of Iranian women' i.e. in her definition 'the rural, recently urbanised, or petite bourgeoisie' (Ibid.:590). For these women, as Higgins suggests, 'the most meaningful model for the future society is based on the Islamic ideology reflected in the *Shari'a* (Islamic law), in which men and women are viewed as being equal before God, but as having somewhat different physical, mental and emotional qualities, somewhat different responsibilities in the family and society, and therefore somewhat different rights and prerogatives' (Ibid.:590).

Regarding Iran's dominant sex role ideology, which emphasises the basic differences between men and women, Higgins (1985:494-5) believes that

> the major components of this ideology are quite familiar to most Iranians; they have been present as part of the Islamic world view for centuries and have been reported in the folk belief systems of many village, tribal, and urban groups. Furthermore, the component propositions of this sex role ideology are not seriously contradicted by the daily life experiences of most Iranians. They find that extramarital sex is disruptive, see

> men and women playing very different roles in the family, and observe men and women reacting and behaving differently in similar situations. It is, rather, the Western ideology emphasising the similarity of the sexes and their interchangeability in most roles that requires them to suspend disbelief.

Comparing Western feminism with Islamic feminism, Higgins (1985: 495) is of the opinion that

> while Western feminists have largely adopted the position that separate is necessarily unequal, *Islamic feminists* base their movement squarely on an ideology that stresses male and female distinctiveness and the desirability of separate spheres. If Islam were perfectly realised, they argue, there could be true equality between the sexes, despite differences in rights, roles and spheres of activity.

According to Ayatollah Khomeini, men's and women's roles in society are complementary (Higgins, 1985).

Moti' (1997), an Iranian sociologist, is critical of current feminist movements in Iran, which she believes are mistakenly influenced by Western feminists. She rejects their emphasis on the official employment of women outside the home as a means of emancipation, their condemnation of housewifery and their scorn for women's domestic occupations.

Referring to women's productive work in rural areas and its underestimation in official statistics of economic activity, Moti' (1997) asserts that women's traditional roles do not mean they do not play an important role in the household's economic life. She stresses the importance of housewifery and childcare and highlights the fact that the domestic engagements of women contribute to the process of economic and social development.

Moti' (1997) argues that being a housewife, particularly in urban areas, does not always mean suffering from overwhelming chores since, normally, women from high and medium income families employ servants to help them permanently or temporarily in their household duties; under-school age children are sent to kindergarten; and time-consuming and tedious household tasks are greatly reduced by the use of modern goods such as washing machines, dish washers, electric sweepers and the purchase of ready-made food. As to housewives from moderate income or poor families, many are engaged in informal home-based occupations such as sewing, embroidery, flower decoration, weaving, working as maids, cooking sweetmeats, hair dressing, painting, etc. to help their families financially. Furthermore, Moti' (1997) rejects the idea that, by earning an income, an employed woman in Iran can become a major decision maker in the family as claimed by some, instead of being subservient and subordinate like housewives.

Moti' (1997:24) concludes that instead of fully rejecting the traditional role of women, the feminist movement in Iran must build its policies and perspectives on appreciating, examining, and recognising the real status of the majority of women [housewives] in the Iranian community. 'Such an understanding', she writes, 'is necessary for us because the

established opinion which holds that a housewife is a humiliated, weak, dependent and vulnerable person, should be carefully reconsidered' (Ibid:25). Revitalising the traditional role of the woman must be one of the objectives of feminists in Iran, she argues, recognising equal values for mother's sentiments and men's performance in the society and in this connection 'turning to Islamic teachings which give special value to women's feelings and men's capabilities' (Ibid.:25).

Having reviewed the various views on Iranian women's status, we can see that the spectrum of different viewpoints on women's reality is very broad and the positions controversial. Some have valued and insisted on the continuity of traditional roles for Iranian women and some on the other hand try to associate these women with radical changes, moving towards new roles and in a way justifying women's grasp of new social, modern and public-sphere roles. Given that the real status of a woman's life in Iran must be therefore found somewhere along this spectrum, it still seems practical to apply the theoretical model of this research and examine the feasibility of Western hypotheses used in exploring women's 'work-health relationship' in Iran (see chapter 2). In other words, it seems that the issues of self-esteem, work-conditions, marital support and economic independence seem to be as important in women's lives in Iran as they are in a Western society. There might, however, be differential levels of significance and importance, which we may expect to vary among the two, which will of course be analysed and reviewed later in the thesis. There might also be factors outside the observation or scope of this study which affect the relationships, as is usually the case with social surveys. In the next section we will look further into details of the various aspects of women's recent living situation in Iranian society to give the reader more material for a better insight.

Women's political, economic, cultural and social activities

Political activities

Since the time of the Revolution in 1979, women have increasingly participated in socio-political elections. In elections since the Revolution, the number of women members of parliament (MPs) 'has increased from 1 in the first election to 4, 9 and finally 20 in the second, third and forth parliamentary elections respectively' (Ettela'at International, 1.5.96)[1]. In the 1999 nationwide rural and city council elections, 297 women representatives were elected in the cities, and 484 women in the rural areas (Zanan, 1999a: 62). In 56 cities, women obtained the highest votes and in 58 cities the second highest. In five cities both the highest and second highest votes were obtained by women (Ibid.:62).

In the government sector, various organisations have been set up to tackle the question of women's participation, such as the Bureau of Women's Participation Affairs at the Office of the President; the Women's Society of the Islamic Republic of Iran; the Women's Coordination Bureau; and other official women's organisations which are either totally or partly affiliated to the government departments set up to promote women's rights (Moti', 1997).

[1] Quoted from an Interview with Mrs Fatemeh Hashemi, ex-president Rafsandjani's eldest daughter.

Women's paid work

The pattern of women's paid work in Iran has shown a gradual shift from the industrial and agricultural sectors towards the service sector since the mid 1970s (see Table 3-1) in a manner similar to the West (see for example Annandale and Hunt, 2000, in reference to Britain).

Table 3-1. Relative Distribution of Women in Economic Activity Sectors in Iran, 1976-1996

Year	**1976**	**1996**
	%	%
Agriculture	19.04	16.68
Industry	54.47	35.50
Service	26.49	45.86

Source: Women's Socio-economic Indexes in Islamic Republic of Iran (1997), based on Census data from the Statistical Centre of Iran.

According to official statistics just 9.1 per cent of women (10 years old and over defined as the age of activity) in Iran are economically active (see Table 1-2 in chapter 1 and later in this chapter for an explanation).

Moayedi (1994: 64) gives several reasons for the low rate of employment among Iranian women:

1) *Illiteracy and lack of skills.* Moayedi (1994:64) argues that literacy is a prerequisite for women to work in service-related or industrial sectors in urban areas, whereas for women workers in agricultural sector it is not an issue (because of traditional agricultural methods applied in the country). He continues: 'despite having an upward trend in recent years,

women's literacy rate is still at a very low level, something that can affect their employment rate' (see later in this section).

2) *Legal support for women workers.* Moayedi (1994:64) considers the case of women manual workers: 'under the law, women workers are prohibited from engaging in hard and hazardous jobs. Moreover, mothers who breast feed are given half an hour break every three hours at work in order to feed their babies. The breaks are calculated as their working hours. Those employers who deny women workers such rights are fined the first time and if they repeat the offense they will receive prison terms ranging from 91 to 180 days. The law has given almost complete support to women's rights'. Paidar (1995) has also discussed this issue, 'the Labour Law was amended in 1987 to include clauses related to women's health and safety. According to Article 75 of the new law, carrying of heavy weights and undertaking dangerous work for women workers was prohibited' (Ettela'at, 27.10.87 cited in Paidar, 1995:327). 'Article 76 prohibited night shifts for women except in relation to educational, health and medical work. Maternity leave was specified as ninety days, half of which should be taken after the child's birth (article 77). Companies were obliged to provide the type of nursery suitable to the age and requirements of the worker's pre-school children' (Ettela'at, 27.10.87 cited in Paidar 1995 :327). The fees for such nurseries are often low.

Such laws, which support the rights of women, can cause private employers and even government organisations to be reluctant to employ women. 'Employers and even the state show less interest in employing women since their employment requires higher expenses in terms of welfare expenditure' (Women's Socio-economic Indexes in Islamic Republic of

Iran:158). Moreover, 'in any crisis or war situation women - rather than men - are left out from the labour market more readily' (Ibid:158). As a consequence, women in need are happy to undertake jobs which offer poor conditions and ignore the legal support provided for them (Ebadi, 1999:9).

'In seeking a job, in comparison to men, only when they have higher level of education or skills women can win jobs' (Ebadi.:159) This is also reflected in the slightly higher percentage of literate female compared with literate male employees in 1996; that is, 79.86 per cent of women, compared with 78.39 per cent of men. For urban areas, the difference is more marked (92.7 per cent and 86.57 per cent respectively)(Women's Socio-economic Indexes in the Islamic Republic of Iran, 1997). This is said to be due to differential job-opportunities for women and men. Usually the percentage of literate women in the whole population is lower than that of men, and when there are equal conditions, men have a greater chance of getting the job. Therefore, women can get a job only when they have higher levels of qualifications and expertise (Ibid.).

3) *Being considered a 'housewife'* is given by Moayedi (1994) as another dimension of his explanation for women's relatively low employment rates. He writes that, 'most rural women are engaged in agricultural activities, besides their housework' (Moayedi, 1994 : 64). Neither in Pahlavi's era, nor in the Islamic republic, has women's employment in the non-formal economic sector been appropriately reflected in official statistics and consequently women's significant engagement in income-generating activities has always been underestimated (Lahsai-Zadeh, 1996; Paidar,1995). As Lahsai-Zadeh (1996:12) points out, 'most of the

women in rural areas of the country are classified into the economically inactive population, while in most of the rural regions housewifery includes work, which is actually income-generating economic activity'. According to the statistics highlighted by Moayedi (1994:65), 'women account for 60 per cent of rice production, 90 per cent of vegetable growing, 50 per cent of oil seed production, 30 per cent of horticultural production and 90 per cent of carpet production' (Ibid.). Jamshidian (1994:19) also stresses that 'in Iran, over 62 per cent of exports (apart from oil) are agricultural products and handicrafts. Women greatly contribute to preparing both of these exports'.

Moayedi (1994: 64) refers to the Ministry of Education and the Ministry of Health where women are employed in large percentages because of their perceived efficiency in certain jobs (in the educational and medical fields). 'Between 1982 and 1991, 63.6 per cent of female civil service employees were employed by the Education Ministry, while the Health Ministry accounted for 20.3 per cent of employed women, other ministries employed the remaining 16.1 per cent.'

In 1996, 86.6 per cent of economically active women were paid job-holders, 74 per cent of whom were literate (Ettela'at International, 6.8.96). The Iranian presidential advisor in charge of women's affairs declared that women constituted 15.3 per cent of the total administrative personnel nationwide (Ettelaat International, 22.7.98:2).

Moayedi (1994: 65) concludes that, 'the majority of employed women in urban areas between 1956 to 1986 were working in service-related and industrial sectors. Jobs occupied by women

in the service sector fall into the three categories of education, medical fields and civil servants (secretaries and other office jobs)'. 'Statistics pertaining to the 1991-92 educational year show that among all members of full-time academic staff of the medical universities, 29-53 per cent were women and more than 40 per cent of medical sciences university professors were women. This is alongside a figure for non-medical sciences professors in state universities of 17 per cent' (Jamshidian, 1994:18). Referring to the Ministry of Culture and Higher Education Yearbook (1992 - 1993), Jamshidian (1994) relates that 18.3 per cent of all university lecturers were female. On this point, Jamshidian (1994) refers to a degree of discrimination against women engaging in management positions. According to her, women conduct research, teach, write books and pamphlets, but only in rare instances are they given high-level jobs such as executive and key posts in higher education.

Regarding facilities and wages, however, Jamshidian (1994:19) stresses, 'there is no difference between men and women'. In spite of problems such as job-segregation, it can be emphasised that 'among the laws approved since the victory of the Islamic Revolution in Iran, the Labour Law (approved by the Islamic Parliament of Iran in 1990) is the only one which stresses the safeguard and application of women's rights and recognises equal or even higher rights and privileges for women than for men' (Ebadi, 1999: 9) . According to Article 38 of the Labour Law, 'for the same job within the same circumstances in a workplace, equal payment must be paid to women and men' (Women's Status in Law, 1994:230). It continues, 'discrimination in pay in terms of age, sex, race, ethnicity, political and religious ideas is forbidden' (Ibid.: 230).

Women's education

In the highly competitive scene of higher education in Iran, female students constituted 29.1 per cent of total students in 1995, rising to 36.1 per cent in 1996 (Iran Statistical yearbook, 1997). Among students in higher education, female students make up 52.6 per cent of total students in arts; 52.1 per cent in medical sciences; and 43.3 per cent of students in basic/exact sciences. Then comes social science and humanities with 39.6 per cent female students. Agricultural sciences and engineering come last with 24.3 and 11.6 per cent of women respectively (Iran Statistical Yearbook, 1997). Women's recent rapid gains in educational spheres in Iran, in spite of general educational system differences, are somewhat similar to the trend seen in Britain (Walby, 1997).

Women have a major contribution to implementing scientific and technical projects that promote the country's development, according to Ms. Fatemeh Shabani, head of the Board of Directors of the Parsco Women's Engineering and Research Institute, affiliated to the Cooperatives Ministry. She notes that some 40 per cent of graduates of technical and engineering courses are women (Ettelaat International, 14.8.96:10).

Housewifery and motherhood

Family relations and women's roles as wives and mothers are highly valued and stressed by religious leaders in Iran, as reflected in the following quote:

> Women's main duty is home-keeping and child-rearing and this is in itself a full-time job. We should not expect women to add generating of income to their tasks. Of course women can engage in side activities such as knitting, sewing and even research and

writing. But it should not be forgotten that neither husband nor wife can dismiss their main responsibilities (Ettela'at, 17.11.83 cited in Paidar, 1995:323).

Many women themselves believe in motherhood as their most important role in life and this feeling becomes even stronger when in socio-economic difficulties (Moti', 1999). On the other hand, society is in need for women's skills and expertise in jobs known as female jobs (such as teaching and nursing). The increase in women's economic activity in recent decades is related to the growing number of educated women, along with financial pressures and the increasing need for women's income-generating activities, as well as women's own determination to realise their talents and capabilities in line with new ideas of gender equality and women's rights and the related call for women's more active involvement in public activities. Nevertheless, there are still debates about the probable conflicts between women's traditional and modern roles and their consequences.

Some Iranian writers believe that, although today's woman has attempted to realise her true values and capabilities by being socially active, this must not result in the neglect of her main roles as wife and mother (Karbasi, 1998). A working mother is, in their view, actually a housewife whose most important responsibilities are still housewifery and motherhood. Thus whenever necessary (when the working role threatens her main responsibilities) a working mother must be ready to give up her job for the sake of her family duties (Karbasi, 1998). From childhood, girls are socialised to become devoted wives and mothers. In line with religious and traditional beliefs, which are transferred from mothers to daughters, women gradually learn the various codes of behaviour; how to keep themselves and their houses clean

and tidy, cook well and economise in family expenses, raise healthy children, please and obey their husbands, and safeguard their dignity and chastity by following religious instructions.

In terms of family relations, men are traditionally the main bread-winners. Even if the wife is engaged in income-generating activity at home or out of the home, the husband usually enjoys a superior status in terms of financial power over women in the household, although women have their own influence on decisions concerning family life and are not entirely considered as powerless and passive in relation to men. Nevertheless, many women still suffer from internal family problems such as domestic violence. For those suffering from men's aggression there is as yet no organisational legal support and it is difficult for women to prove their husband's misconduct (Moti', 1999:12-13).

Referring to housewives, the Iranian presidential advisor in charge of women's affairs says: 'this section of women constitute a large part of the 29.5 million female population of the country and play an important role in building the cultural basis of the society by nurturing the future generation, yet they have the least amount of access to the cultural and social centres and are most subjected to injustice' (Ettelaat International, 22.7.98:2).

Women's leisure activities and sport

In this section we look at other aspects of women's lives i.e. those concerning activities other than their work, study or daily duties, which may also directly or indirectly influence their health and wellbeing,

Women's leisure activities are generally in accordance with their society's religious and cultural value systems. We can mention sporting activities, park and cinema going, visiting friends and relatives, reading books and magazines, alongside attending art, language and religious gatherings and charity activities which are traditional activities popular among women of different socio-economic groupings. A recent survey of 17 to 22 year old females in Tehran revealed that, '29.5 per cent of the respondents spend most of their leisure time watching the TV and listening to the radio programmes. 26 per cent read books, 13.5 per cent practice art and handicrafts and only 4.4 per cent do sports (Oskooei, 1999:28).

In the beginning of this century in Iran, visiting religious centres was a popular way of spending leisure time for Iranian families. Religious events (meetings for prayers, cooking for charity, and Koran reading) exclusive to women took place in their homes (Hasan-Beygi, 1994) and still do. Women-only parties are still popular, where women tend to enjoy chatting, gossiping, and occasionally listening to fortune-tellers.

In terms of sport, due to the Islamic requirements of sexes undertaking sporting activities in separate locations, there are exclusive single-sex sports clubs or, in the case of shortage of facilities, certain week-days are allocated to female users and other days to men. 'More than two million women practice some sort of organised or unorganised sport in Iran' said the deputy director of the Iranian Sport Education Organisation in 1996, 'of which 600,000 practice in an organised way and the rest practice in sport-clubs or at home'(Ettelaat International, 9.8.96:4). The deputy director praised the widespread interest among the female population in taking up group and family sport activities such as mountain climbing on

weekends in several provinces (Ettelaat International, 9.8.96:4). However, according to Fatemeh Tondgoyan, the advisor to the Minister of Education, there are still inequalities in sporting facilities for boys and girls: 'there are a thousand sport halls for boys, whereas there are only 11 halls exclusive to girls (Zanan, 1999b:69).

Apart from sporting activities, women have become increasingly interested and professionally involved in different aspects of the arts. Cinema is one of the industries developed in the West which has affected peoples' lives in Iran and attracted women as actresses, film-writers, critics, directors as well as just audiences. Going to the movies is among the favourite leisure activities for many people, particularly younger people.

Ms.Taer-poor, an Iranian film-producer, said that 'at the moment there are 110 producers in the private sector of the industry and of all movie directors, 10 per cent are qualified women directors (Ettelaat International, 23.11.98: 3). The film industry has become a powerful medium in women's hands to make the voices of women heard by the whole society. Tahmineh Milani, female film director, says that 'women in our society have many problems in terms of material or non-material affairs, therefore any number of movies produced about them even if exaggerating the facts is a positive action in favour of them' (Zanan, 1999c:60).

As to reading, presses exclusive to women are at minimum in Iran (Zanan, 1999d). Since the Revolution, 23 women's periodicals have been authorised to publish. According to a review of the Iranian press, at present there are 925 periodicals in Iran, 8 of which (i.e. 0.7 per cent)

are women's exclusively, and of all 1100 license-holders[2], only 52, that is 4.7 per cent, are women. A few women's magazines are the most popular and regularly publish articles about women's affairs. In addition, all economic, social and cultural magazines regularly or at intervals publish articles about women (Moti', 1997). These magazines play a remarkable role in the women's movement and in influencing women's socio-economic participation. They deal with women's social, political and cultural activities, and legal issues. They contain both recreational as well as informative features, and try to reflect women's interests and problems in the society. They all safeguard and respect the society's religious values.

Some believe that women's chances of becoming mentally and physically healthier increase in accordance with the growth in indices of women's social and economic development. Such as growing educational achievements and economic activity rates, and with improvements of the social context for their engagement in healthy recreational and leisure activities (reading, attending public art and cultural activities, doing sports, and participating in various social and political affairs). In the next section we look at women's health-related issues.

Women's Health

Statistics reveal improvements in a number of health-related indexes for Iran. In line with Iranian women's increasing life expectancy (see chapter 1), Iran has witnessed an increase in women's average age at first marriage (from 18.4 years in 1966 to 22.4 in 1996); a decrease in the gross birth rate from 42.5 per thousand in 1974/5 to 30.6 in 1991, and a decrease in the infant mortality rate from 108.1 per thousand in 1966 to 60.3 in 1991 (Iran Statistical

[2] According to law a licence is necessary to publish periodicals in Iran which is given by the Ministry of Culture

Yearbook,1997). These changes are bound to be linked with other societal level improvements such as greater availability of health and medical services, as well as definite improvements in women's situation. As we noted earlier, increases in women's literacy, higher educational achievements, greater socio-economic participation and their consequent growing general awareness of requirements of a healthier life-style can undoubtedly be influential in that process. Women usually play an important role when it comes to a society's health indices, with reference to their own health or the health situation of the people around them, because it is women who usually are responsible in their family's diet and other life-style issues.

Women's health in Muslim societies such as Iran is affected by religious tenets, as Rajaram and Rashidi (1999) explain by referring to Islamic Mandates on cleanliness (such as a special cleansing process at the end of each menstrual period), and individual responsibility in health promotion (health related teachings and messages of the Prophet Mohammed (pbuh)), on diet and eating habits (such as fasting, prohibitions on the consumption of liquor, illicit drugs, and smoking) and on physical exercise (through praying five times a day with its mild, uniform movements which involve all muscles and joints of the body).

However, Rajaram and Rashidi (1999) also refer to misinterpretations of Islamic beliefs in some Muslim societies which could hinder health promotion among women. They refer to women who are over-sensitive, and relate that because 'the Islamic religion does not allow the use of a healthcare provider of the opposite gender, unless it is impossible to locate a

and Islamic Guidance.

healthcare provider of the same gender (citing from Athar, 1993:168), some women keep themselves from effectively participating in breast cancer screening, and some gynecological tests'. Ahmad-Nia (1996:54) also refers to Iranian 'women's avoidance of visiting medical centres because they are likely to be treated by male doctors, particularly when the problem concerns sensitive areas of their body'. She also discusses the negative consequences of social pressures on getting pregnant soon after getting married, particularly considering the relatively low age at first marriage in Iran, which has traditionally pushed many women towards early pregnancies rendering them vulnerable to health risks such as gynecological problems (Ibid.). According to a survey in Tehran province in 1989, 30.7 per cent of women experienced their first pregnancy at the age of 16 and below and only 33.3 percent at the age of 20 or above (Health and Illness in Iran, 1991). Del Vecchio Good (1980:151) clarifies the situation:

> Women in provincial Iran are expected to conceive within the first year of marriage. Failure to do so casts doubt on one's ability to have children and therefore on one's status as a wife. Infertility is a social onus and if long-standing, a threat to one's marriage and social security... Few women are strong enough to resist the social pressures to demonstrate their fertility early in marriage.

To withstand such social pressures, women need to become self-confident and self-reliant, but before that they need to develop. Further education and a growing awareness of their rights, capabilities and potential can provide women with the means for effective self-actualisation and better health prospects. According to Arber and Cooper (2000:124), 'for women in mid-life, their health and well-being is influenced by their history of child-bearing and their role as

parents'. Referring to Lahelma and Rahkonen (1997), they also believe that 'increasingly, health during working life is structured according to position in the labour market, which itself is closely linked to earlier success in the educational sphere' (Arber and Cooper, 2000:124). Walby (1997:41) also emphasises the role of educational achievement, 'the better qualified a woman is, the more likely she is to be in employment, that is, there is a clear relationship between level of education and propensity to paid work'.

This chapter has introduced the reader to different socio-economic, political and cultural aspects of Iranian women's lives. We have seen that Iranian society and particularly women in Iran are undergoing change and reforms at the societal level, as well as at communal and individual levels, although positive and negative forces are practically entangled and any improvements in women's health are affected by the overall impact of those reforms. Throughout this thesis, we shall see more concretely how some of the above mentioned aspects of women's life such as their education, their work and their socio-economic status actually affect women's health in the capital city of Tehran.

In the following chapter the methodological concerns and details of the research method for this thesis will be reviewed.

Chapter 4

The Research Methodology and Research Design

In this chapter the method and techniques, details of the design of the survey questionnaires, the piloting stages, sampling methods, the sample size, the operationalisation of the research concepts and other relevant issues concerning the research strategy will be explained.

Which methodology to apply?

The nature of the study required both a descriptive as well as an explanatory approach to the subject matter. I explored a range of methods and techniques as well as research approaches, while being aware of the probable changes which usually take place in the early stages of the research process (Hammersley and Atkinson, 1992).

The quantitative/qualitative dilemma

The impact of employment or working in general, and/or of women's multiple roles on their health seemed to be approachable by quite different methods, quantitative and qualitative. Research on similar issues conducted in Britain and other Western countries has often used quantitative method (Nathanson, 1980; Robin and Williams, 1989; Verbrugge, 1989; Arber 1991; Hibbard and Pope 1991; Brannen and Moss, 1991; Simon, 1992; Simon, 1995; Elstad, 1996, Emslie, *et al.* 1999). Although there has been an ongoing debate about the merits of qualitative and quantitative research methods among social scientists, as Van Meter (1994) reminds us, there is no easy definition or distinction between the two. Referring to

Hammersley (1992) he agrees that, 'the identification of the various component meanings of the qualitative-quantitative distinction including:

words versus *numbers*

natural versus *artificial settings*

meaning versus *behaviour*

inductive verses *deductive approaches*

cultural patterns versus *scientific laws,* and

leads to over-simplification and obscures the complexity of the [research] problem[s] that faces us and threatens to render our decisions less effective than they might otherwise be' (Van Meter, 1994:15).

Bryman (1988) takes into account different ways in which the two traditions may mutually facilitate the research process. He stresses the ways in which qualitative research can act as a precursor to the formulation of problems and the development of instruments for quantitative research; 'qualitative research may act as a source of hunches or hypotheses to be tested by quantitative research ... Qualitative research may also facilitate the construction of scales and indices for quantitative research ... The presence of qualitative data may greatly assist the analysis of quantitative data, for example by enhancing the ability to construct path analyses of survey data (Ibid.:134-5).

The actual Research Procedures

Although a qualitative approach would have been useful in the ways described by Bryman (1988), the practical exigencies of doctoral research, namely, time and finances, meant that a combined quantitative and qualitative study was not feasible. I decided that a large scale survey was the most appropriate method since this offered the best opportunity to reliably explore the determinants of health status of women in Iran. This was particularly important given that no such research data exists. Moreover, a survey offered the best opportunity to reliably compare findings to those of related research in the West.

The Pre-pilot/pre-test

Pilot testing is a necessary and important part of survey development and, as Litwin (1995:67) stresses, 'provides useful information about how your survey instrument actually plays in the field. Although it requires extra time and energy, the pilot test is a critical step in assessing the practical application of your survey instrument'. I actually piloted the questionnaire twice.

I pre-piloted the preliminary questionnaire on a group of 13 working and non-working mothers, friends and relatives, in Tehran. They represented different ages, occupations, economic and educational backgrounds as far as possible so that the results from this stage would provide a good basis for predicting how the actual group of respondents would react to the final survey. There were 147 mainly open-ended questions concerning a vast number of variables deriving from a preliminary set of research hypothesis (see chapter 5 and 6). I conducted all of the interviews myself. Many notes and comments were taken following the interviews to aid the questionnaire design for the primary survey.

The pre-pilot was useful in several ways. First, it was a test of how successful the operationalisation of the key concepts was. It was particularly important because I had adopted some scales, and sets of questions from Western surveys and they needed to be tested in terms of cultural equivalence and their applicability to an Iranian setting. The General Health Questionnaire (GHQ), Rosenberg's self-esteem scale, and questions on social support were tested. In this way, it was also a test of the structure of the questionnaire and locations of the questions. It was advantageous also in terms of assessing the pertinence of some variables. Some not so crucial variables were proven to be redundant, largely due to the fact that similar concepts were being operationalised in different ways or questions.

Data from the pre-pilot interviews were entered to an SPSS file. Obviously the small number of respondents did not allow me to carry out statistical tests, but the results provided some insight into the measurement of the relevant variables. I created tables of frequencies, obtained measurements of central tendency and dispersion and gained an idea of the variation and range of responses to different questions. Since they were mostly open-ended questions, I had to categorise the answers and produce coding lists for the responses, which enabled me to predict and create response sets. Many open-ended questions changed into closed questions or questions in multiple response-form for the full pilot study.

The Pilot study

The second, more comprehensive, pilot questionnaire included 103 questions mostly with multiple choice responses, Likert-type questions, scales, and some open questions. This stage aimed to cover some key demographic characteristics of respondents in terms of a wide range

of age, occupation, family-composition, educational level, and income, variables approximating, as far as possible, the final sample characteristics.

The respondents were selected in a non-random way in 9 public and private offices and companies, schools, a factory and a clinic, where I had access to employees. The criteria for selection of the respondents was that they were married mothers (not single, widowed or divorced), aged between 18-60 years. In the case of working respondents, women were sought to represent the jobs the majority of women in Iran are engaged in according to information on the relative distributions of working women across the occupational classes in Iran provided by the Iranian Statistical Centre based on the then (1997) last nationwide Census of 1986. For the factory and a few of the workplaces it was necessary to provide an introductory letter from the Bureau of Women's Participation Affairs to justify the interviews and acquire permission. The Bureau is an Iranian organisation headed by the Iranian Presidential Advisor in charge of women's affairs, which agreed to partially sponsor my research. But in most of cases, familiarity with gatekeepers such as influential personnel, headteachers, or deputy directors, made it easy to gain access to the respondents. Non-randomly selected non-working mothers in the same age-range also varied in terms of their demographic and socio-economic background. They were selected through purposive sampling method from high and low income households living across the city of Tehran in various neighborhoods. At this stage, 71 respondents (working and non-working, a number large enough to carry out the required statistical tests) took part in the study by completing the questionnaire.

The questionnaire was designed to be self-completed. Nevertheless, in the case of respondents with a low level of education or illiteracy, it was read to them by interviewers who were collaborating with me. The data from the questionnaires were entered into SPSS and provided the necessary foundation to make crucial revisions. The larger number of respondents (71) compared to the pre-pilot sample made statistical analyses feasible. Reliability analyses, tests of statistical significance, t-tests, correlation-coefficients as well as measurements of central tendency such as mean, median and mode were carried out, as well as some measurements of dispersion such as variance and standard deviation. Looking at the frequency lists and degrees of variation in responses for particular variables proved the necessity of keeping certain questions, and/or response-sets and omitting the redundant ones. For example, the number of items in the symptoms-list was altered from those derived from Western surveys to be more relevant to the population under study. Questions which seemed to be confusing or proved to be unnecessary were omitted. Reliability tests were conducted to assess the relevance and convenience of using selected scales operationalised for many key concepts, such as the GHQ and the Rosenberg self-esteem scale. Tests of association between the variables in the main hypotheses (see chapters 5 and 6) revealed the possibilities of predicted relationships to appear in the final survey. This pilot questionnaire also permitted the assessment of the validity of certain measurements used to operationalise concepts such as social support, and health behaviour in the Iranian context. It was also helpful in revising and re-arranging the wording of some of the questions so that many potential misunderstandings would be avoided. Another crucial outcome of the pilot study was the ability to assess the required sample-size for the main survey.

As a result of the pilot, the original questionnaire was turned into two separate questionnaires for working and non-working mothers. Although the main body of questions remained the same and there were only a few questions exclusive to working women. This decision was made because a questionnaire designed for both was complex and cumbersome requiring, for example, re-routing around non-applicable questions/sections. This would have introduced an unnecessary element of error, especially when self-administered by a population unused to such questionnaires. As for the questionnaire layout, the pilot stage was helpful in making me aware of the need for making certain changes to the type size and font used for the questions, and of using underline and/or italic forms for words or phrases which needed to be stressed in order to be effectively noticed by respondents.

Sampling

To tackle the requirements of studies of this nature, a review of different sampling methods suggested three possibilities: stratified sampling, cluster sampling, and quota sampling. Stratified sampling is a probability sample which 'sets up homogenous groups and then selects within these groups to the proportions in which these groups are represented within the sample' (Baker, 1988:150). Cluster sampling differs from stratified sampling as Baker (1988:150) puts it, 'in that strata are homogeneous groups created for the purpose of sample selection, while clusters bring together heterogeneous groups that are usually already formed as established groups for example organizations (such as schools) or residential locations (such as housing blocks)'. Characteristics of individuals are often the criteria for strata (sex, race, etc.), while social organisations of comparable types are often the basis of the clusters. Moreover, cluster sampling requires a list of all clusters available beforehand but not

necessarily the list of all elements required for the final sampling units (Ibid.). As Baker (1988) explains, usually the clusters are sampled first and then the units within the clusters. She reminds us of the possibilities of combining these methods, 'cluster sampling is often combined with stratified sampling. In this case, clusters are sampled first, then subgroups (strata) within the clusters, and then individual units within the strata' (Ibid.: 150). This method seemed most relevant to this study.

Probability sampling, or what is sometimes referred to as 'randomisation' of a population (Black, 1993), is employed to achieve a sample that can be considered representative. In probability sampling, 'every individual or unit has a known chance of being selected' (Glastonbury and MacKean, 1991:230).

Different ways of applying randomisation are possible, some of which 'will deviate from selecting directly from a given population, avoiding the problems of beginning with enormously large lists that may not even exist'(Ibid.: 47). Black (1993) gives an example of how to combine three processes of stratified random sampling, cluster sampling, and [multi]stage sampling in order to avoid some of the difficulties that some studies would otherwise encounter. Black (1993:48) describes:

> For example, ten local education authorities or school districts could be randomly selected, then in each of them, three boys, girls and mixed schools would be randomly selected (assuming that there were equal numbers of each in the areas chosen), and finally five teachers in each school randomly chosen, giving 450 teachers, 150 from each type of school.

On the other hand, Baker (1988) considers feasibility and cost as two important factors which determine the choice of type of sample. She stresses the necessity of a sampling frame in probability samples. Nevertheless, when such lists are unavailable and unattainable, she believes, 'probability sampling may not be feasible. In addition, large scale sampling efforts may be very expensive and may be beyond the reach of many researchers'(Ibid.:156). In his description of non-random sampling, Black (1993) lists purposive sampling, quota sampling, convenience, accidental or volunteer sampling and snowball sampling, which, although they provide less justifiably representative samples, and though some are better than others, are 'used because the cost of taking a random sample is too great, or it is very difficult to obtain a complete list of the members of the whole population'(Black,1993:48).

Considering the lack of an accessible sampling frame for respondents in this research, I had to turn to non-probability methods. Among non-probability sampling methods, it was quota sampling which seemed to be of most relevance to my research requirements.

Quota sampling is 'a form of non-probability sampling that is often mistaken for stratified probability sampling. The quota is generally stratified, a certain number of men, women, those in different age groups, social classes, etc.' (Glastonbury and MacKean, 1991:230). This is because there is an attempt to select certain-sized sub-samples from clearly defined groups. The difference is that in quota sampling, sampling frames from which to select the sample are not set up. 'Rather the groups are defined and the sized specified, and then individuals who fit these descriptions are selected to fill the quotas wherever they can be found. Quota sampling

generally begins by setting up a matrix of the characteristics desired: for example sex, age, race, etc.' (Baker,1988:157-8).

'In academic research', Glastonbury and MacKean (1991:232) believe, 'randomness tends to be favoured, while taking a quota can be looked down on as the province of market researchers. In reality, a useful approach is to analyze the survey population to see how much stratification might be feasible, and aim to select as randomly as possible from within a sensible stratified framework'. Considering all these choices, my method of sampling was a combination of the probability and non-probability sampling methods, which will be discussed later in this chapter.

Sample size

As is usual in surveys, the sample size was derived from the results of the pilot study. Having tried to identify some meaningful patterns in terms of relevant relationships among independent variables (such as occupational class and age) and dependent variables (self-rated health state and GHQ-scores), a sample size was estimated which would allow for the emergence of statistically significant results. It had to be calculated to be large enough to identify the existence of substantively interesting relationships. Based on the projected results[1] of Chi-square tests of significance in the Pilot, the eventual estimation of an appropriate sample size ranged between a minimum of 800 and maximum of 1200. In practice I aimed for an even larger number to anticipate some of the unavoidable losses which would be

[1] Since we were looking at what would happen if the sample was of a given size.

predictable (as discussed in the following section). What I actually experienced on the issue of sample size is well expressed by Glastonbury and Mackean (1991:232):

> Often it is a matter of seeking a compromise between the researcher's resources and the need for generalisable (statistically valid) results. The larger the sample, the greater the prospect of such results, but the higher the cost in time and money. Sadly there is no easy route at a planning stage by which sample sizes and the consequent validity of results can be calculated because a crucial factor is the extent of diversity in the survey population. A more diverse group requires a bigger sample. At a practical level, keep in mind that stratification is a process of taking account of some of the diversity (controlling variables), so can influence sample size. In reality, most postgraduate researchers will take the largest sample their time and resources permit.

Since the main focus of the study was women's paid work it was decided that two thirds of the sample should consist of working mothers given the internal variation possible in terms of their work conditions and characteristics and one third should consist of non-working mothers, as a control group for comparison purposes.

The sampling method used in this survey

i. *Working mothers*

With the time, finance and administrative support at my disposal, together with the availability of the necessary statistics and information, I decided that I should apply a combination of different methods. This comprised basically multiple stage cluster sampling,

taking advantage of some features of quota sampling and employing the selection of primary clusters based on their geographic distribution as in a stratified sample with geographical strata and finally work-place strata where appropriate. This was considered appropriate given that I could not gain access to any major lists of actual 'mothers' working in different occupations. The only sampling frame available was a table of the relative distribution of working women into main occupational classes in Tehran obtained from the previous Census in Iran (from 1986 data which was available at the time (1998)). Data from the current Census i.e. 1996 were not yet available. The table provided me with the different percentages of the total population of working women in Tehran in the eight main occupational groups, according to the definitions of the Iranian Statistical Centre. It was not actually a 'sampling frame', but the only possible substitute considering the lack of relevant listings.

Table 4-1. Working women in main occupational groups, Tehran, 1986*

	Occupational classification	**Percentages**	**job-holders**
1	Scientific, technical, professional	60.27	teachers, nurses
2	Managerial, Chief executives	0.56	managers
3	Clerical, administrative	15.98	secretaries, typists
4	Tradespersons, salespersons	2.19	cashiers, salespersons
5	Service-jobs	6.15	cleaners, hair stylers
6	Agricultural, fishery	0.16	farmers
7	Manufacturing, crafts	14.68	manual workers
	Total	99.99	

* Source: Iranian Statistical Centre, 1986 Census.

Having taken the working women's relative distribution (see Table 4-1) as a basis, it was possible to estimate how many women, and in which jobs, were to form the sub-sample in each category in the total sub-sample of respondents (i.e. working women). It was possible to cover the whole range of jobs women were working in Tehran according to their relative

percentages in the given distribution. Each category defined the sort of jobs particular to that category, giving the sub-groups within that category of job-classification. As Table 4-1 shows, the sorts of jobs working women occupied were found to be by and large concentrated in certain organisations and institutions such as schools, hospitals, factories, and so on, and were on the whole the kind of jobs traditionally considered 'female'. This was beneficial in order to know where to seek and reach the respondents in certain jobs. Fortunately, the larger percentages of working women in Table 4.1 were teachers, nurses, factory workers and the like, who were relatively easily accessible using the intervention of gatekeepers in formal organisations and administrations under the Iranian Ministries of Education, Health and Labour.

Therefore, I aimed for a sampling method, which would yield a certain number of respondents with certain required characteristics (being married, a mother, in a certain age group), who were performing certain jobs, and in a manner similar to quota sampling I sought certain jobholders in certain numbers. On the other hand, I had to fulfill the requirements of a probability sample. So I had to aim for a sample which was randomly selected and therefore as representative of the wider population as possible. To meet this condition, it was necessary to consider a form of cluster sampling in a multiple stage process, which I applied in selecting particular sub-samples of units such as teachers and nurses. Detailed accounts are given later.

Basically, the first stage of selection was to choose the main top clusters of working units (see later in this section) based on their geographical location, then within these clusters, strata of

homogenous working-units were randomly chosen, and finally, individuals with required characteristics in certain numbers were selected.

The unit of observation and analysis is the individual i.e. married women (both working and non-working) with at least one child living with them (excluding widowed, divorced and single women). For working mothers, this meant paid work either at home or out of the home, part time or full time. As for age, I looked at those between 18 and 60 years old. That is old enough to be a mother, at work and accessible through the sampling method I applied.

'Non-working' refers to those who are not currently in paid work either inside or outside of the home. They may have retired from paid work, or have been looking for paid work for a year or more. In all other respects, they meet the same criteria as working mothers for inclusion in the sample, that is, the age-range, being married and being a mother of at least one child living with them in the same household. These criteria were needed in order to limit as well as focus the scope of the research to certain people enabling me to test the basic hypotheses deriving from the theoretical model which concerned women with mothering as well as housewifery roles.

Based on the calculated size of the sub-sample of working women (800 respondents) and with regard to the relative distribution of working women in Tehran across the occupational classes, the percentages of working women in each of the categories in the sample was estimated and is displayed in Table 4-2:

Table 4-2. Respondents across the occupational classes in the working mother's sub-sample and the jobs involved based on a total sub-sample size of 800

Occupational class	**Percentages**	**No. required**
Scientific, technical, professional	60.27	482
Managerial, Chief executives	0.56	5
Clerical, administrative	15.98	127
Tradespersons, salespersons	2.19	18
Service-jobs	6.15	50
Agricultural, fishery	0.16	0
Manufacturing, crafts	14.68	118
Total	99.9	800

Each of the main occupational groups was in turn divided into smaller sub-categories giving more specific numbers of the most populated jobs within them. Therefore I calculated the percentages of respondents in each of the sub-categories of occupational groups based on data from the Statistical Centre of Iran, 1986 Census. This served as a guideline to the jobs and the number of people in each job, which I had to seek during the sampling procedure for each category.

I focused on a few major organisations in Tehran, in which I could look for the majority of jobholders in my sample. These were directly or indirectly under the coverage of the Ministries of Education, Health and Labour. I was introduced to the officials in all these Ministries by a letter from the Bureau of Women's Participation Affairs as an associate and collaborating researcher so that the process of gaining access to the respondents would be facilitated, avoiding long bureaucratic procedures and saving time in getting permission to conduct the research. Subsequently, I approached each workplace in the manner described below in order to gain access to the employees. In the process of sampling, distribution of the

questionnaires and holding some interviews, I enjoyed the help of a group of 16 social science B.A. students and graduates from the Allameh-Tabatabai University in Tehran.[2]

a. Employees in the Ministry of Education. Having submitted my introductory letter, and explained the purposes of the survey to senior officials in the Ministry, I gained temporary access to the lists and addresses of the total 19 districts in charge of all educational units in the city of Tehran. They were classified into Northern, Southern, Eastern, Western and Central parts of the city. I took advantage of this classification and began my clustering by randomly choosing one district in each main geographical area and eventually selected 5 districts scattered throughout the city. The next step was to select units of the second cluster, which in this case were nurseries, elementary schools, high schools, and technical colleges.

In each district, there was a list of all the working units under the authority of that particular district. Again, I made a random selection from the lists of the working units within each district. I aimed for 2 nurseries, 2 elementary schools and 2 high schools (one of which would be a college) in each district. In the final step, in each of the educational units, questionnaires were distributed among all of the working staff who matched the criteria required to be in the sample. The range of jobs sought through this process of selecting the respondents included teachers, teaching related job-holders, service jobs, nursery personnel, and also clerical jobs. The number of questionnaires distributed in each of the selected working units was based on

[2] They were introduced to me via one of the lecturers in the Department of Sociology, Ms. Shiyani, (Ph.D student) who also offered her office in the Department for use as my base and facilitated my meetings with the interviewers while I organised the executive procedures of the research. I recruited the interviewers out of my own personal resources and arranged a few training sessions for them to become familiar enough with the content of the questionnaires as well as the study's aims.

the headteachers' records of the qualifying staff according to the criteria of the survey and varied according to the size of each educational unit.

b. Employees in the Ministry of Health. Here again, with the introductory letter I was supported by the senior officials in the Ministry of Health to conduct the survey among working women in jobs under their authority. In order to find jobholders such as nurses, nurse's aids and medical doctors, I looked for health service centres such as hospitals and surgeries. In a similar approach to the Ministry of Education, I started by looking at the geographical distributions of the first cluster, that is the hospitals. With the help of an official in the Ministry, four hospitals were randomly selected in the northern, southern, eastern and western parts of the city and a clinic in the central part. I was introduced to the hospitals to distribute the questionnaires. The selection of the respondents was carried out in multiple stages in a similar way to that explained earlier, this time with the help of matrons in the hospitals and with access to the lists of the personnel which enabled more systematic random selection of the individuals at the final stage.

c. Factory workers. Access to factories where there were sufficient female workers was made possible through an introduction letter, addressed to four factories around the city, from the ministry of Labour. For the majority of the respondents in manufacturing and manual jobs there was a need for the interviewers to read the questions to the respondents. Respondents in clerical and service jobs were also approached in these factories. The factories were producers of food, pharmaceutical products and electronic appliances. I was not able to have access to the lists of factories in Tehran, therefore the four were chosen by officials in the ministry

trying to meet the requirements of my survey i.e. geographical spread and having female-workers. In the factories I needed permission from the general directors in order to be able to hold interviews with the workers and to take them out of the production line, which was not an easy issue given the length of the questionnaire. In the fourth factory I failed to gain permission to conduct the interviews. The reason was that, in the approach to the new year's production boom, the workers were too busy. In the three accessible factories, my interviewers and I interviewed *all* eligible women workers, since those meeting the selection criteria proved not to be abundant.

d. Other workplaces. In order to complete the required number of respondents in different jobs in the whole sample, there was a need to obtain other job-holders who were not already approached by the above mentioned processes. I had to aim for other workplaces throughout the city. This was again achieved through the administrative support provided by The Women's Bureau in introducing me to people in charge of other organisations with relatively large numbers of women personnel, and also by contacting gatekeepers so that I could distribute questionnaires in other places as follows:

The office of self-employed women manufacturers/producers is a Bureau under the Ministry of Labour which organises and supports women who are able to produce goods at home and secure a stall in a special market place in an area of Tehran to sell their products as retailers directly to the public. I had some questionnaires distributed in the Bureau's office itself as well as in some of the shops and stands in the marketplace. This was to cover jobholders such as craftswomen, dressmakers, shopkeepers and those in related jobs.

I was also introduced to a number of other organisations in order to have questionnaires completed by women employees in clerical, professional and service jobs. These organisations were: The Social Security Organisation in direct relationship to the Ministry of Labour, one of the divisions (under the Vice-minister for Student Affairs) of the Ministry of Higher Education, The Bureau of Women's Participation Affairs, and The Environment Protection Organisation.

Work places with job-holders such as hairstylists, beauticians, dress-makers, and salespersons were approached through the geographical location of their workplace. In five areas of Tehran, in neighborhoods around the schools already selected in the sample, we sought respondents of this kind. Interviewers went in pairs to approach these interviewees and hold interviews.

e. Other jobholders

In order to cover jobholders who may have been missed through the above mentioned processes of sampling, I tried another strategy. I tried to take advantage of the same plan we applied to reach our non-working mothers (following section) i.e. by approaching them via their children at educational establishments. In one or two classes, depending on the size of the classes in the school, the pupils were asked if they had a working mother, then we gave those children the questionnaire for working mothers, and to the rest of the class we gave our second version of the questionnaire designed for non-working mothers. Through this procedure, jobholders such as bank-officials, cartographers, social workers, solicitors, editors, carpet-weavers, radio-presenters, and home-based cooks were included in the sample.

ii. *Non-working mothers:*

For non-working mothers, I approached educational units such as schools and nurseries, reaching mothers through their children in these establishments. This method was not only beneficial in terms of providing access to a wide range of respondents with the criteria needed for this sample, but also proved remarkably efficient in motivating the respondents to collaborate, by taking advantage of the broad social acceptability and trustworthiness of establishments such as schools in mothers' views. The supervision of the school teachers helped too. Therefore having already selected those educational units according to the sampling procedure mentioned earlier for working mothers in particular workplaces, I aimed for non-working mothers. This approach included a range of mothers with children from nursery age to high school, providing an age-range more or less identical to that of the working mothers in the sample, as well as a similar geographical distribution by residence throughout the city, to give me a reliable basis upon which to carry out comparisons between these two groups of mothers. I randomly chose a class in a nursery, one in an elementary school, and one in a high school in each of the 5 sampled educational districts in Tehran. Then the interviewers and I went to the classroom, introduced ourselves and the purpose of the study and asked children with non-working mothers to take our questionnaires back home for their non-working mothers to complete and return to us by a specified date. In cases where their mother was not literate enough, we asked the older children to help them or gave them the option to be interviewed by us.

The classes were different in size and the numbers of non-working mothers were not predictable, but on average we had classrooms of 30-40 pupils, and we gave questionnaires to all of the children with non-working mothers in a class.

The response rate

In order to cope with problems such as refusal to collaborate, non-eligible questionnaires and so on, I tried to begin with a slightly larger number of questionnaires than the number calculated as the minimum number of respondents in the sample based on the pilot-results. This precautionary action was taken due to the lack of any exact lists and details of the potential respondents. For working mothers I had 1000 questionnaires duplicated. Over the course of the actual research, due to different reasons, a number of copies were taken out of the main research process.

In the case of working mothers: some questionnaires were used to train the interviewers (16 copies), some copies were requested by establishments, ministerial offices, and workplaces to be kept as their records (60), copies partially damaged in the processes of duplicating (30), questionnaires returned uncompleted by those who found themselves disqualified according to our criteria (such as being widowed, or divorced) (24), and copies left over at the end of the research period (30). Therefore, only 840 questionnaires for working mothers entered the field, out of which 725 completed questionnaires were returned. After removing 15 miscompleted questionnaires, 710 eligible questionnaires entered the data file as reliable data. In total, 115 questionnaires were not returned, which makes the rate of non-response

130/840*100 or 15.5 per cent. Considering the fact that a sample of 550 to 800 respondents for working mothers was sought, the estimated response rate of 84.5 per cent appeared very good.

For non-working mothers I had 500 copies of questionnaires duplicated, 403 of which were actually distributed, due to different reasons[3], and 361 returned, six of which were miscompleted. Eventually I had 355 eligible questionnaires making the non-response-rate 48/403*100 or 11.9 per cent, leaving a response rate for non-working women of 88.1 per cent.

The final questionnaires

For both samples, the front page contained an explanation of the aims and purposes of the study as purely scientific research which aimed to broaden knowledge about women, their health and working conditions in society, and reassured respondents that they had been selected through scientific sampling measures (see appendix A). The issue of the anonymity and confidentiality of the respondents was emphasised as well (McNeill, 1990). The second page clarified the research criteria and also gave some explanation on how to complete the questionnaire, a telephone number for contact in case of any difficulty in responding or for further questions, if any.

[3] The reasons and the respective questionnaire numbers taken out are as follows: for training interviewers (16), requested by some establishments, ministerial offices, and workplaces for their records (30), damage in the processes of duplicating (2), returned blank by those who found themselves disqualified according to our criteria such as being widowed, or divorced (25), left over in the end of the research period (24).

The questionnaires were laid out to meet the requirements for scanning of data for entry into SPSS.

The working women's questionnaire consisted of 86 questions on 28 pages. The non-working women's questionnaire included 65 questions on 23 pages. The difference was due to the fact that for non-working women some questions concerning paid work were obviously not relevant. In general, there were identical questions for both groups for comparative purposes.

For the format of the questionnaire (see Appendix A), I followed Bourque and Fielder's (1995) suggestions concerning self-administered questionnaires, such as including as many closed-ended questions as possible. Although a shorter questionnaire was desired, it was difficult to reduce the questionnaire too far due to the complexity of the concepts under study, such as health and work. I began with the most basic questions on demographic factors such as age, educational level and also questions concerning basic health facts such as pregnancy at the time, if ill-health ever prevented the respondent working, and questions on job. Bourque and Fielder (1995) have discussed the benefits of 'easy-to-difficult progression' in designing questionnaires. They refer to reasons such as it being easier because the information sought is well-known to the respondents, and that those who return an incomplete questionnaire tend to leave the *last* part of the questionnaire unanswered. Thus by putting the demographic questions at the beginning, the surveyor maximizes the chance of getting complete demographic information about the respondent (Ibid.: 57). As noted earlier, I also took

advantage of using bold print, underlining and larger characters wherever appropriate to facilitate readability and clarity.

As for the length of the questionnaire, I tried to introduce a form of numbering referred to by Litwin (1995: 62) as 'creative numbering'. Used by a number of researchers, instead of giving simple numbers from 1 to whatever to the items in a survey, this involves breaking them into groups and sections, which may create an illusion that the survey is shorter than it really is. It is possible when several items share the same response set. Rather than numbering each item separately, one can only number the instruction to the particular group of items, and define the forthcoming set of questions by letters. I did this, for example, for the set of questions on 'symptoms'. In this way, the number of questions was reduced from 200 plus, to 86.

The types of questions varied from some single-component ones (like age) to questions encompassing 24 itemised list-wise units (e.g. the questions on symptoms), depending on the nature of the questions.

Operationalisation

The main dependent variable is health, which includes both mental and physical health indicators. The discussion of concept operationalisation is in accordance with the location of the four main groups of variables in the theoretical model, and therefore I begin with the socio-demographic variables, then work-related, and third the life/social context variables. Last I consider the physical and mental health indicators. It is crucial to remind the reader that

the hypotheses upon which these sets of variables are developed are introduced in detail in chapters 2, and also in chapters 5 and 6 as the analyses concerning them will be discussed throughout.

Group-1: socio-demographic factors

This group of variables includes socio-demographic and economic characteristics (of the respondent as well as her family-members) and also questions on material resources (e.g. indicators of socio-economic status of the household). Since the questionnaire is included as Appendix A, to save space and time I will not go in details for all these variables. Most of the variables are, however, described and referred to in the forthcoming chapters 5 and 6, when I discuss the socio-demographic and general economic characteristics of the sample in the univariate and bivariate analyses. Briefly, I can mention here age, educational level, family-size, number of bedrooms, husband's monthly income and the household's monthly expenses, car-ownership, housing tenure, respondents having a carer role, and father's and husband's occupational class, among this group of variables.

Group-2 Work and work-related variables

This group includes all variables concerning the respondent's paid and unpaid (domestic) working characteristics and conditions.

Paid work

By paid work I mean any kind of work for money whether at home or out of the home, whether on a part time or a full time basis. Appendix A contains the whole questionnaire and

variables will be referred to by question numbers hereafter as I go through the operationalisation of different concepts and variables.

There were questions on the respondent's current job (Q.9), and her paid work history (Q.15, Q.6, 6a, Q.8, Q13). The respondent was asked to relate details of her place of work (in or out of the home) (Q.11), and whether it was a part-time or a full time job (Q.14, Q.14-a), if she did over-time work (Q.14-b) and about her second job (Q.15-b).

Work-Conditions

Aspects of the physical and psycho-social conditions of women's work (paid or unpaid) were asked in identical sets of questions (Q.51 and Q.64). Working women responded considering both areas of work; at home and out of the home, while for non-working women, questions concerning waged work were redundant.

a. Psycho-social conditions

Questions on psycho-social aspects of work asked respondents about positive and negative aspects of their work (Q.51). For example, how much did they think their work was refreshing, interesting and varied, and made them feel in control. Or, on the other hand, how much they felt it was mentally or physically tiring, repetitive and monotonous, or they felt under time pressure while performing it. The same questions were asked with reference to housework (Q.64). Working women were also asked on job security and their chances for promotion (Q.68 and Q.69).

b. Material/physical conditions

Material or physical environment conditions (Q.54) covered the following issues: noise, humidity, air pollution, extreme temperatures, crowding, light, safety and work breaks. The respondents were asked to judge their workplace in terms of these criteria. The same questions were asked on their home circumstances, where they carried out their housework (Q.67). Dimensions of physical and psycho-social job-conditions were taken from Macintyre *et al.*(1989), Popay and Bartley (1989) Bacharach *et al.* (1991) and Roxburgh (1996). These items were to give ideas as to how respondents perceived the physical conditions at work and at home.

Group 3 (life/social context variables)

This group of variables included life/social context variables, which were believed to affect the relationship between work and health in different ways suggested by the literature and the theoretical model of this research.

Stress. The question on stress (Q.80) was adopted from the 1994 Health Survey for England which included questions on the effect of stress on daily lives and the extent to which it had affected health (Colhoun and Prescott-Clarke, 1996).

Social support. Social health is considered within a broader view of health. There is an approach which considers 'social health' as a dimension of individual well-being distinct from both physical and mental health, which conceptualises social health both as a component of health status outcomes (as a dependent variable) and as suggested by Caplan (1974) and

Castle (1976), in terms of social support systems that might intervene and modify the effect of environment and life stress events on physical and mental health (i.e. as an intervening variable) (Bowling, 1991). Social health is therefore defined, as Donald *et al.* (1978 quoted in Bowling, 1991: 7-8) explain in terms of interpersonal interactions (e.g. visits with friends) and social participation (e.g. membership of clubs). Caplan (1974) outlines different areas of social support including family support, social activity and friendships and personal life (e.g. the existence of confidence), personal achievements (as quoted in Bowling, 1991: 7-8). I operationalised social health in terms of an individual's social support in its different dimensions. Bowling (1997:25) remarks, however, that 'there is little consensus over the domains of support which should be measured in relation to health and illness'. I have included some measurements concerning practical and financial support from friends and family (Q74 and 74-a), emotional support in the cases such as illness (Q.24), socialising and contact with friends (Q. 75, 75-a, 75-b, and 75-c), social participation in various activities (Q. 79), and support from husband and marital companionship (Q. 76-77).

The division of household responsibilities

a. Housework: Question 55 asked how husband and wife were sharing responsibilities around the house. This was followed by a set of questions concerning certain specific chores and asking who (husband/wife) actually did: 'washing up', 'cooking', 'laundry', 'cleaning/dusting', 'household shopping', 'repairing', 'paying bills', and 'helping when having guests'. The questions were partly adopted from a similar set of questions used in Social and Family Planning Research (see Social Focus on Women, 1995). To see how the respondent imagined the ideal situation, I also inquired how much would she *like* her husband

to help with household matters (Q59). Greater help from husband was assumed to have a positive effect on women's well-being. The sections on 'childcare' and 'decision making' which follow are the continuation of the same issue.

B. Childcare: Question 57 concerned husband's help with child-care, followed by a set of items concerning childcare related tasks asking who normally performed them. Two of the items were adopted from the items used in the Social and family Planning Research discussed in Social Focus on Women (1995).

C. Decision-making. There were three questions about who in the household was acting as the main decision maker when it came to dealing with important financial affairs such as buying or selling a car, a house, land or similar issues (Q60); who decided how many children they had or were to have (Q. 62); and who in the first place decided with whom they/she could form friendships, socialise and make visits (Q. 63). These were included as indicators of the amount of equitable sharing of responsibilities between the spouses as it was expected that in dual-earner families not only do men become more involved in housework and childcare matters, but women are also more in control of household matters and taken more seriously in relatively important decision-making. This is even better examined by the issue of women's economic independence, which comes next.

Women's economic independence

Question 61 inquired who in the family actually decided on how to save, spend or deal with the respondent's own commodities, savings or, in the case of working women, income. This

was to indicate how independently or dependently the respondent acted in terms of her own financial affairs as an indicator of women's economic independence.

Inter-role conflict

In their survey, Bacharach *et al.* (1991:44) adopted the definition of work-home conflict from Greenhaus and Beutell (1985) and defined it 'a form of interrole conflict in which the role pressures from work and family (home) domains are mutually incompatible in some respect'. They used a four item scale based on that of Holahan and Gilbert (1979) designed to tap the degree to which paid work impacts upon and/or disrupts the individual's life at home[4]. I adopted the idea from their scale to include a question on this issue while reducing the number of questions to one. Therefore I included a question on mothering role and working role conflict: 'For you who *works,* how easy is it to combine mothering duties with working duties?' (Q.45).

The respondent's inclination to give up her job would also be interpreted as a sign of role conflict (Q.70). However, since there could be different reasons behind the respondent's positive response to such question, I also asked her what her reason(s) was/were (Q.70-a).

[4] The scale items are: 1.Do the demands of work interfere with your home, family or social life? 2. Does the time you spend at work detract from your family or social life? 3. Does your work have disadvantages for your family or social life? 4. Do you not seem to have enough time for your family or social life? (Bacharach *et al.*1991:44)

Husband's agreement to wife's paid work:

Husband's disagreement on women's work was considered as influential on respondent's experiencing role-conflict. There was a question on this issue, asking the respondent how much she would say her husband consents to her working (Q.72).

Self-esteem

Bowling (1991) places Rosenberg's Self-esteem Scale among the most popular and commonly used measures of self-esteem. Rosenberg's own definition of this concept is, 'self-acceptance or a basic feeling of self-worth' (Rosenberg, 1965 quoted in Bowling, 1991:167). 'The measure was intended to be brief, global and unidimensional. It has been widely used in varying settings' (Ibid:167).

Satisfaction:

Referring to research in this area, Buller (1994:18) believes that 'role satisfaction is a valid subjective indicator of role quality and writes; 'although the conceptualisation and measurement of role quality varies in the literature, much of the current research has focused on the demands and rewards associated with particular roles and role configurations' (1994:18). Satisfaction gained from main role-performances was asked by direct questions in terms of job-satisfaction (Q52), satisfaction with the role of housewife (Q.65), marital satisfaction (Q.78) and general life satisfaction (Q. 82).

Health Behaviour

In order to get a broad picture of the respondent's health behaviours in general and to see how they influenced the health outcomes, a number of questions (Q.36) were included, some of which were items adopted from the West of Scotland Twenty-07 Study (Macintyre *et al.* 1989) There was also a separate question on smoking (Q.34).

Group 4 (health indicators)

Health was the most complicated and multifaceted dependent variable in this survey and one of my main preoccupations was how to deal with the measurement of essential concepts such as mental and physical health, which are already known as problematic. 'Surveys on employment status and health are bedeviled by methodological problems and suffer also from lack of conceptual clarity. Concepts of work and health are ambiguous...'(Miles, 1991:15). 'Even with a very clearly defined concept, there are problems in developing an indicator, which will measure that variable and not something else (the problem of validity) and do so systematically without bias (the problem of reliability)' (Bulmer and Burgess, 1986: 252).

Discussing various common attempts to measure health outcomes and the difficulties attached to this process, Bowling (1991:2) reminds us of the long-standing recognition of limitations of the widely used negative definition of health 'as the absence of disease and the World Health Organisation's (WHO) 1946 definition of health as total, psychological and physical well-being' (Bowling, 1991:1 referring to WHO, 1958). She refers to typical indices of health status in current use in the Western world which focus on disease, illness, and negative

concepts, 'they include mortality rate and biochemical data (e.g. hemoglobin levels); routinely collected statistics on health-service use; subjective indicators: self- or other-reported morbidity, disability, and behavioural data (e.g. smoking, alcohol use, etc.)' (Bowling, 1991:2). Explaining subjective health indicators, Bowling writes: 'health is generally conceptualised as being at one extreme of a continuum, generally defined negatively as the absence of symptoms, and with death at the other' (Ibid:3).

It may be helpful to recall some important conclusions Blaxter (1990:35) made, following the Health and Life-Style survey:

1. Health is not, in the minds of most people, a unitary concept. It is multi-dimensional, and it is quite possible to have 'good' health in one respect, but 'bad' in another...Psycho-social malaise is defined as ill-health, even if the individual's physical health is apparently good.

2. It is difficult, bearing in mind lay descriptions of health, to think in terms of a simple dichotomy between 'well' and 'ill'. Good health can be expressed simply as an absence of illness, but it is also a positive concept and one, which has many degrees.

3. Normal health, even 'good health' can accommodate an 'ordinary' level of symptoms or complaints[5]

Bearing in mind the problems associated with operationalising physical, mental and social health, I relied on self-report measures since such measures of health according to Bowling (1991:17) 'have a broad appeal as they are often quick to administer and involve little interpretation by the investigator'. Blaxter (1990) discusses the cons and pros of using people's self-assessments of their health status with questions such as: how did they describe their health compared with someone of their age (with four options, from poor to excellent), as used by her research group in their Health and Life-Style Survey. She says, 'such a subjective measure may be dismissed as meaningless, since one does not know what standards people are using, or how their assessments may be affected by an unwillingness to label their own health as poor' (Blaxter, 1990:31). She continues, 'on the other hand, self-defined health has been shown to be one of the better predictors of mortality (referring to Singer *et al.* 1976) and to be important in aspects of adjustment to major illness' (Blaxter, 1990:31 referring to Hunt *et al.* 1980).

Stein (1997:80) refers to self-perceived health status (SPHS) or self-rated health (SRH) and writes 'research shows that it may be possible to capture the multi-dimensionality of health in a single question: 'In general, how would you say your health has been in the last year?' 'excellent, very good, good, fair, or poor?'. 'This subjective measure of health status', she writes, 'has been a better predictor of mortality than physician appraisals, self-reported medical conditions, and health services utilization information' (Ibid.: 80).

[5] She explains: what is considered to be ordinary, and compatible with good health, will obviously depend primarily upon age, but also on gender, on social norms, and on health experience (Blaxter, 1990:36).

In the routine government health surveys in the UK, as Bowling (1991:4) describes, 'the incident of acute illness and injuries requiring either medical attention or restriction of daily activity; number of days of restricted activity and activity limitation resulting from various diseases and conditions; absence from work or school; self-reported chronic diseases and impairments; and discharges from hospital' are reported. 'Some also include symptom check-lists' (Ibid.). I have largely adopted the same approach, trying to operationalise health in my survey negatively as the absence of disease, illness and sickness, even if it really means I am measuring *ill-health*. After all, 'it is easier to measure departures from health rather than to find indices of health itself'(Bowling, 1991:6).

As Bowling recognises, a positive conception of health is difficult to measure because of the lack of agreement over its definition (Ibid.) Referring to Lamb, *et al.* (1988) Bowling suggests a description of positive health as 'the ability to cope with stressful situations, the maintenance of a strong social support system, integration in the community, high morale and life satisfaction, psychological well-being, and even levels of physical fitness as well as physical health (Bowling, 1991:7).

Physical health

Health state and health status are distinguished by Arber (1990:42): 'health *state* refers to current health and is similar to acute illness, whereas health *status* is a longer-term concept, measuring the persons 'stock' of health[6]. Regarding the absence of a straightforward 'objective' measure of health for a self-administered questionnaire, the subjective experience of the respondents was to be relied on. Several measures were examined to represent a spectrum of physical health.

Illness symptoms:

A symptom check-list with 15 items was applied (Q.27) Some of the symptoms were adopted from the Health and Lifestyle Survey (HALS; Cox *et al.* 1993) and some from The West of Scotland Twenty-07 Study (Macintyre *et al.*, 1989) which, following the pilot studies, seemed to be more common with the population under study in Tehran.

Respondents were asked if they were suffering any of the specified symptoms within the last *month* (as in HALS) and/or tend to suffer from them *generally*. Such a symptom list is used as a measure for identifying illness and, as described in HALS report, the list represents those complaints which are most common in adults as recorded in consultation rates (Royal College of General Practitioners, 1982) and in smaller surveys in the community (Cox *et al.*,1993).

[6] Following this distinction, Arber (1990:43) has also suggested that '*health status* has an important effect on whether women occupy different roles, and in turn women's roles have a major impact on their *health state*'.

High, average and low illness categories were derived in HALS based on a simple additive score of the number of symptoms declared from the list:

- High illness: 4+ symptoms
- Average illness: 2/3 symptoms
- Low illness: 0/1 symptoms

Long-standing illness, disability or infirmity

The survey included a question ascertaining current self-declared disease as used in HALS and GHS to be later coded by the ICD (International Classification of Diseases, 1977), asking if the respondent has any long-standing illness, disability or infirmity (Q.23).

The reported conditions were categorised into 3 levels of seriousness using the UK Royal College of General Practitioners' classification of 'serious, intermediate, and trivial' conditions which had already been used to analyze 'Morbidity Statistics from General Practice, Fourth National Study, 1991-1992' (McCormick *et al*, 1995). It was based on the International Classification of Diseases (Ibid.).

There was a question (Q23-b), as in GHS, on whether or not this/these long-standing disease(s) limited her activities in any way, revealing that there was a *limiting* as opposed to non-limiting long-standing illness (OPCS, 1997). This measure is related to function and represents a self-assessment of the effect of any chronic ill health on daily life' (Arber, 1991:427).

The question on acute sickness (Q.22) adopted from the GHS questionnaire, defined as 'restriction of the level of normal activity, because of illness or injury, at any time during the two weeks before interview' (OPCS,1997: 197). It was clarified that 'since the two weeks reference period covers weekends, normal activities include leisure activities as well as going to work, or doing housework. Anyone with a chronic condition that caused additional restriction during the reference period is counted among those with acute illnesses' (OPCS, 1997: 197).

Self-perceived health state

In a similar but not identical approach to the GHS, the respondent was asked how she would say her health had on the whole been over the last 12 months (Q.21). I included both questions on respondent's health i.e. generally within last year and her health regarding her age, in order to cover both dimensions of self-perceived health. Gove and Hughes (1979:137) stress that responses to such general question on people's health state 'are strongly related to a person's actual physical health as indicated by a detailed examination of indicators of physical illness'.

GP-consultation and hospital visits

'Utilization of health services is often used as indicator of the prevalence of ill health and morbidity' (Dunnell, 1999:124). The respondent was asked if she had made any visits to a doctor's practice or surgery on behalf of her own condition or health problem within the last month (i.e. excluding visits on behalf of children or relatives) (Q.32).

Questions 33 and 33-a referred to inpatient stays in hospital as in the GHS which related 'to stays overnight or longer (in a twelve month reference period) counting all types of cases including psychiatric and maternity' (OPCS, 1997: 193).

Ill-health preventing her taking a job

There were questions on whether or not ill-health ever prevented women from taking a job (Q.7), and what the problem and the job was (Q.7a). This question was included in order to address the issue of 'health selection'.

Mental Health

As indicators of mental health, measures such as the GHQ, malaise and a number of separate questions, which follow, were used:

The General Health Questionnaire (GHQ), developed by Goldberg (1972) 'a self-administered screening test for detecting minor psychiatric disorders among respondents in community settings' (Banks *et al.* 1980:188) which is widely used to assist in the detection and estimation of non-psychotic illness (Banks, 1983). There are different versions of the GHQ with the 'best' 30, 28, 20 and 12 items taken from the original 60-item version which are identified for use where respondents' time is at premium (Ibid.:349). I adopted the GHQ-12 or the 12-item version for this reason (Q.81). 'Items consist of a question asking whether the respondent has recently experienced a particular symptom or item of behaviour rated on a four-point scale' (Banks *et al.* 1980:188).

'Whereas the GHQ-method, which is essentially binary, has proved adequate with respect to discriminating between 'cases' and 'normals', the equally sensitive Likert-method might be preferable in that it is likely to produce a wider and less skewed distribution of scores more appropriate for correlational analyses and intergroup comparisons' (Ibid.:188). Therefore, the latter seemed to be more appropriate to be used here.

Malaise is described as 'a measure of self-perceived psycho-social well-being (Cox *et al.* 1993:340) and is based on several 'symptoms' which are considered to be more psycho-social than physical, as Blaxter (1990: 48) clarifies: 'necessarily, the distinction between symptoms of illness and symptoms of malaise is arbitrary: headache is, for instance, included among the physical illness symptoms, and sleep disturbance among the psycho-social, though neither is invariably so categorized'. These symptoms were asked partly along with the 19 symptoms of physical illness[7] (Q.27, items no 2, 7, 8 and 19 with codes 0 and 1) and partly in the form of Questions 28-30 (coded from 0 to 3), plus one item 'nerves' asked within the response set of Q-25 item 22, with codes 0 and 1, which eventually made a scale with a range of 0 to 14 (as in HALS, see Blaxter, 1991:246).

Questions exclusive of housewives

The second version of the survey questionnaire designed for non-working women had basically the same content but without questions concerning paid work. (For questions exclusive of non-working women see appendix A.)

Validity and reliability

The quality of measurement, which refers to the issues of validity and reliability is understandably of great concern in every survey since concepts and their measurement are so central to quantitative research. 'The question of validity refers to the issue of how we can be sure that a measure really does reflect the concept to which it is supposed to be referring' (Bryman, 1988:28). This is clarified in De Vaus's (1993: 53) definition:

> In fact it is not the measure that is valid or invalid, but the use to which the measure is put. The validity of a measure then depends on how we have defined the concept it is designed to measure.

When a survey is criticised in terms of its *internal validity,* that means the indicators were not valid in relation to the concepts to which they were referring, whereas, when the sample used was not believed to be representative of the population, this would be a criticism of the *external validity* (Rose and Sullivan, 1993).

Reliability, on the other hand, is concerned with how far one can depend on the consistency of a measure (Rose and Sullivan, 1993; Bryman, 1988). 'A reliable measurement is one where we obtain the same result on repeated occasions' (De Vaus, 1993: 54). It is also referred to as 'a statistical measure of how reproducible the survey instrument's data are' (Litwin,1995:6).

[7] One of the symptoms, namely 'nerves', was already located among the list of items in Q.25.

Speaking of the issues of validity and reliability, Rose and Sullivan (1993:19) remind us however that these two: 'are not perfectly independent of one another, since it is possible to have reliable measures which are not valid'.

In order to obtain the required levels of validity in this survey, in addition to checking for *face validity*, that is, 'a casual assessment of item appropriateness' (Litwin, 1995:35), the questionnaires were assessed on *content validity* by a group of five experts in sociological research methods; three Iranian social researchers and my supervisors in England. Content validity, as defined by Litwin (1995:35), is:

> A subjective measure of how appropriate the items seem to a set of reviewers who have some knowledge of the subject matter...it is not quantified with statistics. Rather, it is presented as an overall opinion of trained judges...it provides a good foundation on which to build a methodologically rigorous assessment of a survey instrument's validity.

For the operationalisation of health, I have largely adopted the measures used in major British surveys, since they are known to be well-validated in this respect. For other main measures I have adopted, such as GHQ-questionnaire and Rosenberg's scale of self-esteem, the same validation applies.

In the course of the statistical analyses, I have tried also to check for construct validity in both its forms, convergent and discriminant. As explained by Bowling (1997:133): '*convergent*

validity requires that the scale should correlate with related variables; *discriminant* validity requires that the construct should not correlate with dissimilar variables'.

Reliability is commonly assessed in several forms which are, test-retest, alternate-form, split half and internal consistency (Litwin, 1995), the last of which I used. Internal consistency is measured by calculating a statistic known as Cronbach's coefficient alpha, named after the 20th-century psychometrician who first reported it in 1951 (Litwin, 1995: 24). I used this measurement to estimate the reliability of scales used in this survey. 'This test is based on the average correlation among the items and the number of items in the instrument' (Bowling, 1997:132). As to the outcome of the test, Bowling (1997:132) writes:

'There is no agreement over the minimum acceptable standards for scale reliability. Some regard 0.70 as the minimally acceptable level for internal consistency reliability (Nunnally, 1978), others accept just over 0.50 as an indicator of good internal consistency (as well as of test-retest reliability') (Cronbach, 1951).

Conceptual equivalence

Litwin (1995:69) suggests that 'when designing new survey instruments or applying established ones in populations of different ethnicity, creed, or nationality, you must make sure that your items translate well into both the language and the culture of your target audience'. He continues by referring to some concepts as examples, incidentally those particular to this research: 'different cultures have very different concepts of health, well-being, illness, and disease' (Litwin,1995: 69). I have tried to pay sufficient attention to this

issue, especially with respect to language matters and translating sets of questions adopted from Western surveys such as Rosenberg's scale of Self-esteem and the General Health Questionnaire. I consulted several people who have mastered both Persian and English in order to check on the accuracy of translation. As for the social construct of those meanings, two things have helped me to meet the requirements of the cultural equivalence; first, that, I am myself a native of the society under study, not an outsider, and thus familiar with the wider perspective of the meanings attached to the concepts, and second, conducting two pilot stages cleared many doubts about the application and operationalisation of the concepts and effectively reduced the chances of difficulties arising in terms of conceptual equivalence and intercultural ambiguities.

Generalisation

According to Black (1993:42), the answer to the issue of generalisation, which concerns 'to whom are the results intended to apply? Or to what group will the conclusions be justifiably relevant?' may be partly determined by the initial research questions and often the limitations of resources (money, time and effort available). Black (1993:55) refers to a 'continual dilemma' for researchers; 'whether their results will be of sufficient depth and not trivial, and at the same time have some level of generalisability' (Ibid.:56). According to him, this affects both small and large sample studies, and as a solution he reminds us of the possibility of their complementing each other:

> This is true at both extremes: the in-depth study of a small sample can have its generalisability enhanced if some of the relevant variables have been investigated on a

larger, more representative scale; the large representative study covering a few variables can have its relative academic significance enhanced through building upon other research, in particular localized studies that have found results whose generalizability is in question' (Black,1993: 56).

In the case of my study the pre-pilot stage which involved in-depth interviews with small number of respondents may be considered more or less a study close to the first extreme as Black describes, which highlighted the path for the final survey which in turn resembled the other extreme study with a much larger sample, aiming at more generalisable results. However, due to some of the characteristics of this survey, there are limitations to the generalisability of its results to the wider population. First, due to the lack of available information on married working women, I had no actual sampling frame for applying probability sampling methods, therefore I applied a combination of probability and non-probability sampling methods and substituted quotas based on the relative distribution of working women across the occupational classes in Tehran for a random sampling method. Second, due to the fact that my basic comparative analyses were both within group (working women sub-sample) and between group (working and non-working sub-samples) comparisons, I aimed for a sample consisting of three main groups: working women of higher and lower occupational classes and non-working women. For this reason a larger part of the sample consisted of working women and the whole sample was actually skewed towards working women due to the research design. Non-working mothers were therefore under-

represented in the sample[8]. With this in mind, I checked where relevant to see if this imbalance between the two main sub-samples of working and non-working mothers had any effects on the analyses of the whole sample and reported when it did. I did not weight the sub-samples, first because no real data are available on the relative proportions of working/non-working mothers in Tehran, and second because weighting would reduce the effective sample size considerably by downweighting the working women, thus reducing in value much of the data for the working women.

The following chapter will provide some descriptive and bivariate analyses of data on the sample's socio-demographic and background variables as well as highlighting some facts about women's working lives and work characteristics.

[8] According to the 1996 census in Iran by Statistical Centre of Iran there were 137359 working women and 1291966 housewives in Tehran.

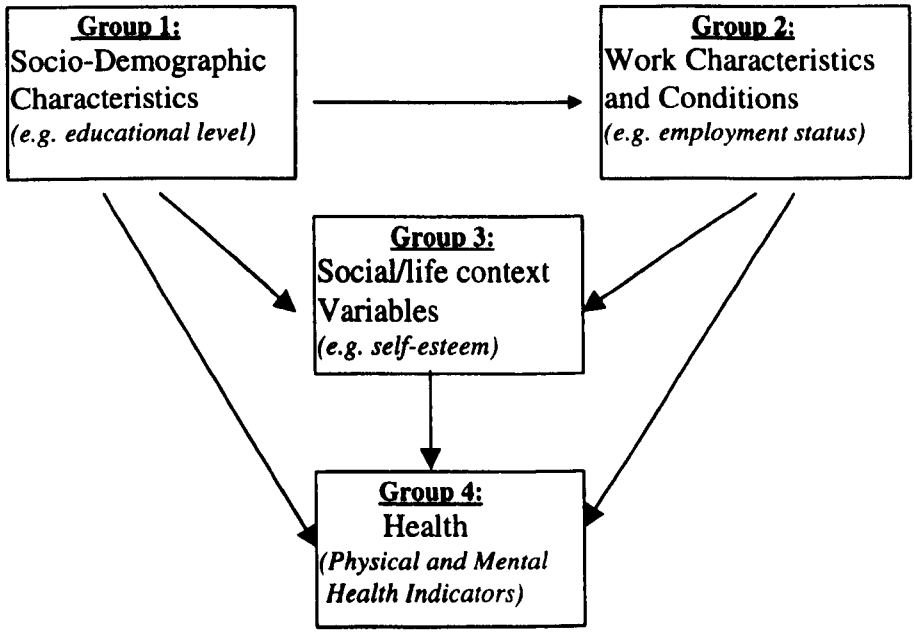
Chapter 5

Wives, Mothers, and Paid Workers

In this chapter we look at the various social, demographic and occupational characteristics of the sample and the associations between the three groups of independent variables in the theoretical model (Group-1, Group-2 and Group-3). The similarities and dissimilarities between the two sub-samples, those women in a 'waged working role' in addition to their parental and housewifery roles and those without a waged role, will be reviewed. In some cases the relationships within a sub-sample, i.e. the waged working women's sub-sample (since this sub-sample will be considered also in terms of manual/non-manual division within it) will also be reviewed.

Here I remind the reader of the theoretical model of the research.

Figure 5-1. Theoretical model of potential factors influencing women's health.



As explained in chapter 2, I assume that an interaction exists among the four main groups of factors and variables in the model. In this chapter, first I begin by exploring 'Group-1' variables, that is, the socio-demographic and economic characteristics of the sample. Second, I examine the series of hypotheses concerning the relationships between *Group-1* and *Group-2* variables (i.e. category-A hypotheses), that is the associations between 'socio-demographic variables' and 'women's work and work-related' variables. Third, I will discuss the relationships between *Group-2* and *Group-3* variables i.e. between 'women's work and work-related' variables and 'life/social context variables'. I will also look at the relationship between Group-1 and Group-3 variables later in this chapter.

The set of relationships and hypotheses concerning the rest of the theoretical model (concerning *Group-4* variables i.e. health-indicators) will be discussed in chapter 6.

Socio-demographic and economic characteristics

As detailed in chapter 4, following the sampling process I had two sub-samples of (paid) working (710 respondents) and non-working (355 respondents) mothers[1], throughout the city of Tehran. Here, I provide some descriptive analyses of the socio-demographic characteristics of the sub-samples. Table 5-1 displays the sub-samples' main socio-demographic characteristics.

[1] From here onwards, by 'working' I mean mothers in paid-work, and by 'non-working' I mean those mothers who are not currently in paid work or housewives.

Table 5-1 Socio-demographic and background variables of the two main sub-samples

	Working women	%	**Non-working women**	%	Sig.
Age	mean=37.5 S.D. =7.65		mean= 36.6 S.D. =7.05		p <.001 Chi-square= 15.56 (df=3)
18-30	147	20.7	68	19.2	
31-40	309	43.5	198	55.8	
41-50	213	30.0	75	21.1	
51-60	31	4.4	11	3.1	
Missing	10	1.4	3	0.8	
Total	710	100.0	355	100.0	
Age at first marriage	mean= 22.0 S.D. =4.2		mean=18.7 S.D. =8.6		p <.001 Chi-square= 109.80 (for age categries) (df=2)
9-17	86	12.1	140	39.4	
18-30	588	82.8	211	59.4	
31+	35	4.9	4	1.1	
Missing	1	0.1	0	0.0	
Total (N=1065)	710	100.0	355	100.0	
Age at first pregnancy	mean= 23.9		mean= 20.5		p <.001 t-value= 13.36 (df=805.3 for unequal variances)
Educational Achiev.[2] level	mean=12.9 S.D. =3.61		mean= 9.5 S.D. =3.76		p <.001 t-value=13.88 (df=679.0 for unequal variances)
Illiterate	8	1.1	10	2.8	
Primary	55	7.7	104	29.3	
High-school junior	33	4.6	51	14.4	
High-school diploma	258	36.3	154	43.4	
Bachelor degree and equivalent	314	44.2	31	8.7	
Masters degree	27	3.8	1	0.3	
Missing	15	2.1	4	1.1	
Total	710	99.8	355	100.0	

[2] Achiev.= Achievement

Mothers' age and education

Age is one of the key variables in relation to physical health. In order to be concise, the information on the respondent's age, age at first marriage and first pregnancy and educational achievement level are presented alongside each other in Table 5-1.

As seen in Table 5-1, the sample population is fairly young, with non-working mothers significantly younger on average than working mothers (means of 36.6 and 37.5 respectively). Respondents' age at first marriage is considered important in this study because those with lower age at first marriage usually tend to have lower age at first pregnancy, which in turn can affect mothers' physical health. Regarding the respondents' age at first marriage, as seen in Table 5-1, non-working mothers had statistically significantly lower ages at first marriage compared with working mothers (means were 18.7 and 22.0 respectively). This is likely to be affected by other factors such as women's educational level. A paid working role is, not surprisingly, associated with a higher age at first marriage because the working career is usually a result of educational qualifications, which in itself tends to delay marriage for some girls. We shall see if this is true of this sample when looking at the differences in the educational levels later in this chapter.

There are high percentages of women married below the age of 18 in our sample especially among non-working women which is not surprising for a Muslim society, where the age of puberty for girls in the Islamic canon is 9 years. However, it must be said that, according to civil law at present in Iran, the minimum age at first marriage is 18 for women and 20 for men (Women's Status in Law, 1994). Only in exceptional cases may the civil court approve of

marriage for girls at least 15 years of age, after consideration of the physical and mental state of the girl.

As seen in Table 5-1, working women have a statistically significantly higher average age at first pregnancy compared with non-working women. This confirms hypothesis a-5 (see chapter 2, or later in this chapter in section 'Women's working lives'). According to hypothesis a-5, working women are more likely to be older at first pregnancy. Furthermore, since for example Williams *et al*'s (1997:834) study found that 'having a first baby before the age of 21 years is associated with an ongoing pattern of poorer mental health into mid-life', I expect age at first pregnancy to affect women's health.

Interestingly, concerning the number of children a woman has, the data show that the mean number of children in the working mothers' sub-sample is 2 (with a standard deviation of 1.1) whereas for non-working mothers it is 3 children (standard deviation = 1.6, t-value based on unequal variances = -.10.6, $p<.001$), which is not surprising considering their lower age at first marriage and the lower age of first pregnancy of non-working mothers. This supports hypothesis a-6 (i.e. women who are in paid work are more likely to have fewer children), which is perhaps also affected by women's educational achievement, since usually the more educated the mother, the fewer children she has. Moreover, there may also be an effect of the working role, which could both delay pregnancies and deter women from planning for more children.

We can see that there is a big gap between the educational achievement levels of the two groups of mothers[3]. The pattern (see Table 5-1) reflects the fact that working women tend to have relatively higher levels of education compared with housewives (hypothesis a-1, women with higher educational levels are more likely to be in paid work). As referred to in chapter 3, this is partly due to the fact that in order to get employment in the competitive labour market, with men being privileged by their gender, one of the main requirements for women is higher educational achievement. Obtaining a university degree is a challenge for both men and women, due to the relatively low number of higher educational establishments against high population demand, considering the young age structure of the country. Therefore, those women who have obtained university degrees usually enter the labour market and take advantage of their qualifications obtained even after marriage, provided their husbands consent. There are cases where women's degrees do not completely match the jobs they hold. For example, there are women with qualifications in engineering, who work as high school teachers while normally their degree would have led them to professional manufacturing jobs. It is usually a result of job-segregation policies and also due to cultural characteristics of the society in which men are not eager to accept women engineers introduced into factories or workplaces, where the majority of manual workers are men.

Respondents were asked if they held a driving license (not shown on table). This skill is considered to be another qualification, alongside women's educational achievements. More educated women tend to acquire a driving license. Among working women, 54.0 per cent had

[3] It should be explained that respondent's educational level was entered into SPSS in 'years', i.e. for example, 0 for no formal education, 5 (years) for elementary school (according to the current educational system in Iran), 12

a driving license, whereas among non-working mothers, only 30.9 per cent had one (Chi-square = 50.47, df =1, p< .000). Earlier we saw that working women also had higher educational achievement levels. Driving appears to be more common among working women, perhaps because some need to drive to their workplaces to save time in order to organise their responsibilities more efficiently.

Next we look at respondent's husband's socio-demographic characteristics, since it is expected that husband's age and education can be influential, directly or indirectly, on their own and their family-members' health indicators. Husband's age and education could affect women's health through general attitudes and degree of marital support, as well in connection with his income and the household's material resources, both of which are considered influential for women's health.

for a high school graduate, and so on. For a Bachelor's degree it was 16, and so on under the Iranian system of higher education.

Table 5-2 Husbands' age and education in the two sub-samples

	Working women's husbands	%	**Non-working women's husbands**	%	Significance
Age	mean=42.5		mean= 42.8		Not sig. t-value= -.49 (df=739.2 for unequal variances)
20-30	60	8.5	15	4.2	
31-40	250	35.2	137	38.6	
41-50	269	37.9	125	35.2	
51+	111	15.6	58	16.3	
Missing	20	2.8	20	5.6	
Total	710	100.0	355	100.0	
Educational achiev. level	mean=13.3 S.D.=4.1		mean=10.4 S.D.=4.2		p<001 t-value= 10.6 (df=688.4 for unequal variances)
Illiterate	13	1.8	6	1.7	
Primary	51	7.2	98	27.6	
High-school junior	30	4.2	40	11.3	
High-school diploma	234	33.0	131	36.9	
Bachelor degree and equivalent	283	39.9	64	18.0	
Masters degree & over	85	12.0	13	3.7	
Missing	14	2.0	3	0.8	
Total	710	100.0	335	100.0	

Husband's age and education

Predictably, the average ages of working and non-working women's husbands, being 42.5 and 42.8 years respectively, do not show a significant difference (see Table 5-2). As seen in Table 5-2, there was a large difference between the two sub-samples, with working women's

husbands having higher levels of education, which again substantiates the hypothesis of the positive link between husband's educational level and women being in paid work (hypothesis a-2, women whose husbands are of higher education are more likely to be in paid work).

Not surprisingly, there was a high level of congruence between spouses' educational levels. This is seen in Table 5-3, which compares the two distributions in three main categories of low, medium, and high educational level, and shows that more educated women tend to marry more educated men.

Table 5-3. Crosstabulation of respondents' educational levels, by their husband's educational levels for both working and non-working respondents separately.

			husband's educ.			Total
			low	med.	high	
working women	her education	low	35	24	2	61
			57.4%	39.3%	3.3%	100.0%
		med.	27	160	97	284
			9.5%	56.3%	34.2%	100.0%
		high	2	76	259	337
			.6%	22.6%	76.9%	100.0%
	Total		64	260	358	682
			9.4%	38.1%	52.5%	100.0%
nonworking women	her education	low	64	37	11	112
			57.1%	33.0%	9.8%	100.0%
		med.	38	121	46	205
			18.5%	59.0%	22.4%	100.0%
		high	1	12	19	32
			3.1%	37.5%	59.4%	100.0%
	Total		103	170	76	349
			29.5%	48.7%	21.8%	100.0%

For the working women's sub-group, there is a Chi-square value of 308.1 (df=4, p=.000), and for non-working women's sub-sample, 84.0 (df=4, p<.001).

Husband's job

Husband's occupational class is discussed among 'Group-1 variables' (in the theoretical model) because it is also considered an indicator of the household's socio-economic status, which is believed to affect women's health as a background factor. Other indicators of socio-

economic status will be discussed later in this section. Women's own occupational class will be discussed in the forthcoming section among Group-2 variables since it is a work-related variable (related to the woman's work).

Respondents' husbands' occupations were coded according to the International Standard Classification of Occupations (ISCO) (International Labour Office, 1990), first into 3-digit codes and then into 1-digit codes. I also used the manual/non-manual dichotomy of occupational class for both respondents' jobs and husbands' jobs. In the International Classification of the Occupations, Group 1 represents non-manual and group 9 represents wholly manual jobs. Class 5, the middle point, is difficult to allocate to the manual or non-manual side since there is a mixture of both kinds of jobs in it. For this research, I have decided to consider categories 1 to 4 as non-*manual* and categories 5 to 9 as *manual* to generate a variable of manual/non-manual jobs. Class 10, i.e. armed forces, is excluded from this dichotomy.

Table 5-4. Husbands' occupations across the categories of the International Classification of Occupations

	Working women's Husbands	%	**Non-working women's husbands**	%	Sig.
Occupational Categories					p< .001 Chi-square= 69.23 (df=7)
1.Legislators, senior officials and managers	75	**10.6**	47	**13.2**	
2. Professionals	142	**20.0**	28	**7.9**	
3.Technicians and associate professionals	135	**19.0**	47	**13.2**	
4. Clerks	95	**13.4**	31	**8.7**	
5.Service workers and shop and market sales workers	41	**5.8**	49	**13.8**	
6.Skilled agricultural and fishery workers	0	**0.0**	0	**0.0**	
7. Craft and related workers	69	**9.7**	59	**16.6**	
8-Plant and machine operators and assemblers	22	**3.1**	26	**7.3**	
9.Elementary occupations	3	**0.4**	2	**0.6**	
10. Armed forces	17	**2.4**	3	**0.8**	
Missing	54	**7.6**	35	**9.9**	
Not applicable[4]	57	**8.0**	28	**7.9**	
Total	710	100.0	355	100.0	

As seen in Table 5-4, working women's husbands tend to be in higher occupational classes than the non-working women's husbands. Next we look at husband's income, which is also expected to be higher for working women's husbands since income, occupation and education are usually highly correlated.

Husband's income

On average, the respondents' husbands earned between 510000 and 1000000 Iranian Rials[5] per month.

In spite of an initial expectation that there would be a significant difference between working and non-working women's husbands' monthly income, this was not borne out (Chi-square = .96, p = .618, see Table 5-5). This is perhaps because nowadays there does not seem to be a necessarily linear relationship between educational achievement and income in Iran. It may also be possible, as is usually the case with sensitive questions such as 'income' levels, that the respondents' answers are biased, for example, with those with higher incomes under-reporting their income.

Table 5-5. Crosstabulation of 'women's working status' and 'husband's income'

		husband's income 3-categ			
		low	medium	high	Total
	working	216	218	179	613
		35.2%	35.6%	29.2%	100.0%
	nonworking	112	103	78	293
		38.2%	35.2%	26.6%	100.0%
Total		328	321	257	906
		36.2%	35.4%	28.4%	100.0%

Note: the total in this table and some other tables may be found less than 1065 (710, or 355 according to the sub-groups) due to missing cases.

[4] This includes cases of retired, student and unemployed husbands.

[5] One pound equals roughly to some 14000 Rials Persian currency in the non-official exchange market in Iran (January 2000). Every ten Rials are equal to 1 Toman Persian currency.

Other material resources

Car ownership (Q.50a) and housing tenure (Q.47), along with monthly income expenses, were asked to indicate the household's material resources (see e.g. Arber, 1997).

Among the working mothers' sub-sample, 51.2 per cent said they had a car, compared with 56.7 per cent of non-working women (Chi-square= 2.8, p= .094). As for housing tenure, 53.4 per cent of working women and 56.7 per cent of non-working women reported they owned the place they lived in (see Table 5-6, Chi-square for the table = 2.58, df=3, p=.461). Owning a house is regarded as very important among Iranians and every married couple's life from the beginning is oriented towards obtaining their own home as soon as they can afford it. This way they may end up buying a relatively small house, but even that is generally preferred to renting bigger houses. In the beginning, due to economic restrictions, however some either have to or prefer to live with their parents/in laws, since extended families are historically common in Iran.

Table 5-6. Housing tenure among working and non-working women's households

Housing tenure	Working women	%	Non-working women	%
Rented accommodation	201	29.0	88	25.2
Owned accommodation (Hers/husband's)	370	53.4	198	56.7
Parental house (own/in-laws)	100	14.4	55	15.8
Accommodation provided by employer	22	3.2	8	2.3
Total (missing cases are omitted)	693	100.0	349	100.0

Table 5-7 (following) summarises the responses to the question of how easy it was for households to make ends meet, considering their current income.

Table 5-7. How easy it is to make ends meet:

How easy it is to make ends meet	Working women	%	Non-working women	%
Quite easy	66	9.6	32	9.2
Relatively easy	305	44.4	159	45.8
Relatively difficult	238	34.6	116	33.4
Quite difficult	78	11.4	40	11.5
Total (missing cases are omitted)	687	100.0	347	100.0

As shown in Table 5-7 (Chi-square = .25, df=3, p= .970), it seems that working and non-working women feel similarly (see Q.86 appendix-A). This is not surprising, given the fact that in terms of husband's income there was not a statistically significant difference between the two sub-samples.

Having reviewed some socio-demographic characteristics of our sample, we can now move on to look at further relationships.

Women's Working lives

In this section we look at the Category-A hypotheses concerning the associations between Group 1 and 2 i.e. socio-demographic and work-related variables in the theoretical model (Figure 5-1):

Category-A hypotheses:

a-1. Women with higher educational levels are more likely to be in paid work.

a-2. Women with husbands with higher educational levels are more likely to be in paid work.

a-3. Women with husbands of higher educational level are more likely to be in non-manual jobs.

a-4. Women of higher educational levels are more likely to have high-income jobs.

a.5. Working women are more likely to be of higher age at first pregnancy.

a-6. Women who are in paid work are more likely to have fewer children.

a-7. Women with fathers of higher occupational class are more likely to be married to husbands of higher occupational classes.

The hypotheses will be examined throughout this section while we review the characteristics of the working women's sub-sample, because of the importance of women's paid work as the most important independent factor and the main concern in this research.

The working women constituted 66.7 per cent of the whole sample. They were selected (see chapter 4) in accordance with the actual relative proportions of various categories of working women in Tehran so that the sample almost resembled the real distribution of working women in Tehran in terms of various occupations they were engaged in. The relative distribution of working women was based on data from the Iranian census of 1986, the latest available data at the time. The percentages of working women in each of the 7 main occupational categories are stated in Table 4-1 (see chapter 4). When this research was conducted, data from the last Census (of 1996) were published. Due to the new policy of the Statistical Centre of Iran, the classification of occupations was modified to be in accordance with the International Standard Classification of Occupations (ISCO) (International Labour Office, 1990), perhaps to facilitate cross-cultural comparative research on occupations. Therefore, I recoded the data for the working women according to the new classification (see Table 5-8).

Table 5-8. Relative distribution of working women (10 years old and over) in Tehran 1996 compared with the distribution of working women in this sample

Occupational Categories	**Frequency of working women 1996**	**%**	**Frequency in this sub-sample**	**%**
1 Legislators, senior officials and managers	9972	4.6	5	0.7
2 Professionals	106171	48.7	351	49.4
3 Technicians and associate professionals	19880	9.1	124	17.5
4 Clerks	42350	19.4	100	14.1
5 Service workers, sales workers	11421	5.2	44	6.2
6 Skilled agricultural and fishery workers	148	0.1	-	-
7 Craft and related trade workers	8625	4.0	38	5.3
8 Plant and machine operators and assemblers	2577	1.2	24	3.4
9 Elementary occupations	6563	3.0	24	3.4
10 Armed forces	10271	4.7	-	-
Total	217978	100.0	710	100.0

Source: Iranian Statistical Centre, 1996 Census results for the Tehran Province

I generated a new variable 'manual/non-manual' based on this classification. Based on this dichotomy, in the working women's sub-sample there were 81.7 per cent non-manual workers and 18.3 percent manual workers, which closely resembles the proportions in the actual working women's population of Tehran (see Table 5-8).

Women had on average worked for 14.1 years, ranging from 3 months to 40 years, with the median being 14 (and the mode being 20 years) and the standard deviation, 8.3.

The largest percentage of jobs held by the working respondents was in the 'Professionals' category. Looking at the distribution of the respondents' jobs based on the more detailed *three-digit* categorisation of the ISCO, the largest group of workers within this category were 'primary school teachers' at 20.3 per cent of all jobs, followed by 'high-school teachers' (16.4

per cent). Third came 'office clerks' (5.9 per cent); fourth 'nursing and midwifery professionals' (5.8 per cent); and fifth were 'secretaries and keyboard-operating clerks' (4.8 per cent).

Respondents' main current jobs took on average 140.6 hours of work per month ranging from 6 to 400 hours as self-reported. Among the respondents, 218 (31.2 per cent) were working part-time and 481 (68.8 per cent) full-time (according to their own distinction). A total of 35.8 per cent of working women said they worked overtime 'at times', and 8.1 per cent said they 'often' worked overtime. The majority (77 per cent) were employees in the public sector, the next largest percentage was that for those employed in the private sector at 14.5 per cent, followed by the self-employed (7.6 per cent), employers (1.0 per cent) and finally family-workers (0.6 per cent).

The majority (78.0 per cent) of working women worked away from home, 4.6 per cent at home and 17.3 per cent in a combination of at home and away from home. Among the respondents 31 (4.4 per cent) had a second job, with a mean of 32.3 hours a month spent on it.

In terms of the respondents' income, when the whole sub-sample was considered, their mean income was 41641.8 (Iranian Tomans) with a standard deviation of 25077.8. When those having part-time jobs were excluded, the mean did not significantly change. It was 42345.88 (Iranian Tomans) with the standard deviation of 20529.39.

Table 5-9: Women's manual/non-manual job by respondent's own income

		woman's income 3-cat.			
		low	medium	high	Total
women's manual/nonmanual job	nonmanual	171 33.4%	281 54.9%	60 11.7%	512 100.0%
	manual	67 63.2%	32 30.2%	7 6.6%	106 100.0%
Total		238 38.5%	313 50.6%	67 10.8%	618 100.0%

The Chi-square statistic for the crosstabulation in Table 5-9 revealed that there is a statistically significant relationship between whether the job is manual or non-manual and income level. (Chi-square =32.96, df=2, p<.001). That is, manual jobs were more likely to be associated with lower income and non-manual with higher incomes. Therefore, since women who are of higher educational levels are more likely to be in non-manual jobs, they are also more likely to earn a higher income than those in manual jobs. The crosstabulation of the respondents' income and their educational level supports this hypothesis (a-4 as statistically significant, Chi-square =124.48, df =10, p<.001, N=606).

Recalling another hypothesis concerning the association between women being married to husbands of higher education and the likelihood of being in non-manual jobs (hypothesis a-3), we have so far discovered that women in paid work have, on average, higher educational levels than women who are not in paid work. In addition, we found that women who are in

paid work and are of higher educational status are also married to husbands with higher education.

A crosstabulation of women's level of education and the dichotomy of manual/non-manual occupation shows that higher education *is* associated with non-manual jobs (Chi-square =374.89, df=5, p<.001). Furthermore, another crosstabulation reveals that, also as expected, there is a statistically significant link between husbands' higher educational levels and the likelihood of their wives being in non-manual jobs (Chi-square 209.307, df=5, p=.000). Therefore, it seems women with higher levels of education are more likely to be married to husbands with higher education; more likely to be in paid work; and more likely to be in non-manual paid work.

Hypothesis a-7 (concerning social mobility through marriage), assumes a link between a woman's father's occupational class and her husband's occupational class. A Spearman's r statistic reveals there is a statistically significant positive correlation of .16 (p<.001). Apparently women with fathers of lower occupational class were married to husbands of lower occupational classes. To see if there was a statistically significant difference between working and non-working women's social background in this respect, a crosstabulation of working/non-working women and fathers' occupational class revealed a significant difference (Chi-square value=38.1, df=9, p<.001, N=891[6]). Therefore father's socio-economic grouping has seemingly affected daughter's future socio-economic status in terms of, for example, her husband's socio-economic status (considering occupational class) and educational level, and

[6] Not all women replied this question.

perhaps also on whether or not she had a working role, since these factors are usually correlated. There are cases where women from lower socio-economic groups marry husbands of higher occupational classes, or higher educational levels (or vice versa), but this seems rare.

Demographic factors are clearly important, since it seems that they influence whether women will be in paid work, in high-income jobs and/or non-manual occupations, and marry husbands of higher education and higher occupational classes. Those with higher education and in non-manual jobs, tend to have smaller families, to have begun married life later and also to have had their first pregnancy later.

Work conditions and their consequences

In this section I review the relationships between Group-2 variables, i.e. women's work and its conditions and characteristics', and Group-3 variables - referred to in the theoretical model as 'life/social context variables'. Therefore this section concerns Category-B hypotheses which are[7]:

b-1. Working women in full-time jobs are likely to experience more stress than part-timers.

b-2. Working women in full-time jobs are likely to experience more role-conflict.

b-3. Working women with higher incomes are likely to have higher self-esteem.

b-4. Working women in non-manual jobs (nature of the job) are more likely to perceive better psycho-social job conditions.

[7] The relationship between these variables and health indicators (that is Group-4 variables in the theoretical model) will be looked at in the next chapter.

b-5. Working women in non-manual jobs are likely to perceive better physical job conditions.

b-6. Working women in non-manual jobs are likely to have higher satisfaction.

b-7. Working women are more likely to have financial independence than non-working women.

b-8. Working women enjoy broader social support.

b-9. Women workers whose husbands disagree with their working role, are more likely to experience role-conflict.

These hypotheses will be examined throughout the coming sections by referring to key variables as follows.

Working full-time and level of stress

The level of stress respondents felt was addressed through a question about how much stress had affected the respondent within the last month (Q.80). Hypothesis b-1 concerned whether being in full-time or part-time work differently affected level of stress. Seemingly, working part-time or full-time did not significantly affect the respondent's level of experienced stress (Chi-square= 4.13, df=4, p=.389). Although, according to research in the West, part-time work is usually associated with better health, this can also be modified by whether the job is manual or non-manual (Arber, 1990) and whether the research is on mental or physical health (Bartley *et al.* 1992).

Working full-time and role conflict

Another hypothesis (b-2) concerns the effect of full time paid work on the amount of role-conflict experienced by full-time working mothers compared with part-timers. Role conflict was operationalised by asking a question about how easy it was for the mother to combine mothering with her work duties (Q.45). There was a statistically significant difference (Chi-square =12.71, df=3, p=.005) so that part-timers experienced less role-conflict, compared with full-timers (see Table 5-10).

Table 5-10. Time spent at work by level of role-conflict

			level of role conflict experienced				
			no conflict	low conflict	intermediate	high conflict	Total
kind of her job:time-wise	part time	Count	35	107	54	8	204
			17.2%	52.5%	26.5%	3.9%	100.0%
	full time	Count	48	208	169	30	455
			10.5%	45.7%	37.1%	6.6%	100.0%
Total		Count	83	315	223	38	659
			12.6%	47.8%	33.8%	5.8%	100.0%

The respondents were asked (Q.70) whether or not they would be inclined to give up paid work and confine themselves to housewifery if the choice was open to them. A list of reasons followed to specify why this was their choice (see Table 5-11): 'work hinders proper housewifery' and 'work hinders proper motherhood', would be interpreted as signs of role-conflict. There were 128 responses concerning housewifery, and 172 concerning motherhood

as reasons why women were inclined to stop working (i.e. 10.6 and 14.3 per cent of the total responses respectively).

Table 5-11. Reasons working women would be inclined to cease working

	Reasons	Frequency	Per cent of responses
1	Poor health	115	9.5
2	Not interested in the current job	46	3.8
3	**Work hinders proper housewifery**	128	10.6
4	**Work hinders proper childcare (motherhood)**	172	14.3
5	Harshness of the job	76	6.3
6	Dissatisfaction with work environment, colleagues or boss	61	5.1
7	Dissatisfaction with income	174	14.4
8	Dissatisfaction with work hours	90	7.5
9	Too long a distance between workplace and home	114	9.5
10	**Husband's disagreement with working**	63	5.2
11	Tired of working in general	153	12.7
12	Other reasons	14	1.2
	Total	1206[8]	100.0

Husband's agreement and role-conflict

Another aspect of women's working life, which could potentially lead to role-conflict is the influence of a woman's husband's agreement or disagreement with her working (hypothesis b-9). I hypothesised that husband's disagreement would influence working women so that those who do not enjoy their husband's positive support may be more likely to suffer from role conflict. As seen in Table 5-11, only 5.2 per cent of the responses concerned husband's disagreement with respondent's working resulting in her inclination to give up working. Indeed, a crosstabulation of the role-conflict (Q.45) and husband's agreement (Q.72) variables showed that there was a statistically significant difference (Chi-square =46.40, df=12 $p < .001$, N=654). Working women whose husbands did not agree with their working role had relatively

[8] People could give more than one answer (multiple choice).

higher role-conflict (according to the definition of this concept in this research, see chapter 4) than working women whose husbands consented.

Brannen and Moss (1991:197) write that 'given widespread normative disapproval in the wider society towards women's full-time employment when children are very young, husband's attitudes were likely to be of some considerable significance'. This seems to be the case in Iran.

In the 'non-working' respondents' questionnaire there was a question on whether the respondent was inclined to take a job if it was possible. In total 48.4 per cent said they were inclined to take a job, 12.9 per cent had no idea, and 38.7 per cent said they were not inclined to. The reasons why women were not inclined are displayed in Table 5-12.

Table 5-12. The non-working women's reasons for not being inclined to take a job

Reasons	**Count**	**Per cent of responses**
Poor health	21	7.6
Giving priority to housewifery	49	18.3
Giving priority to child-care	43	16.0
Does not like working personally	31	11.6
No financial need for working	23	8.6
Failed to get a job	4	1.5
Husband's disagreement	**60**	**22.4**
Lack of education	34	12.7
Other reasons	3	1.1
Total	268	100.0

As shown in the Table, the largest percentage pertains to those who said their husbands disagreed with their working. This means that nearly half of the non-working women were

inclined to take a working role. And even among those who said they were not, a large percentage were actually inclined but the reason they declined was that their husbands prevented them from taking a paid work role. This may also help us in understanding the magnitude of husbands' influence on their wives' working lives and the impact of their views on their wives' experience of role-conflict. Other large percentages were those pertaining to priority for proper housewifery and motherhood (see Table 5-12).

Paid work, self-esteem and income

I hypothesised self-esteem to be in direct relationship to women's own income (hypothesis b-3), i.e. earning an income may strengthen a woman's positive feeling of worth and self-reliance. Before examining this hypothesis we need to know if paid work in general has any association with self-esteem. A t-test carried out for the difference of the mean values for the two sub-sample scores on the self-esteem scale showed that working women had a slightly higher mean score (31.0) compared with housewives (30.4), which was nearly significant (t-value for equal variances =1.95, p=.051). In terms of women's own income categories, a Spearman's correlation's coefficient for the three-categories of low, medium and high income and the Rosenberg Self-esteem Scale-scores was 0.18 ($p<.001$), i.e. the relationship is statistically significant and positive, which means higher income was associated with higher self-esteem. The Rosenberg Self-esteem Scale passes the Cronbach's reliability test with an alpha of 0.81. Therefore, we may expect that as a woman's income increases so do her chances of having a higher level of self-esteem[9].

[9] Although there seem to be positive links between women being in paid work, high income and self-esteem, the directions of the relationship are still not apparent, since these results do not necessarily indicate a causal effect. Thus, we can not ignore the chances that high self-esteem leads to paid work and/or higher income.

Paid work: psycho-social and physical conditions

Women with non-manual jobs are hypothesised to perceive their psycho-social work conditions as better than those in manual jobs (hypothesis b-4). As referred to in chapter 4, psycho-social job-conditions were measured on a scale generated by adding up the scores from a number of items concerning various subjective aspects of work (Q. 51). The items included positive and negative aspects and asked how much a woman would say, for example, that her job was interesting and varied (positive item), or monotonous and boring (negative item). There were 13 items altogether which received a score of 1 to 4 each, therefore the overall range of the score would be 13 to 52 (representing the worse to the best score on this scale), with a Cronbach's alpha of 0.83. Non-manual workers in the sub-sample of working women had on average a score of 36.52, whereas for manual workers the mean score was only 33.31 (t-value for unequal variances =5.19, $p<.001$). Thus, overall, women in non-manual jobs perceived better psycho-social conditions associated with the job, while manual workers perceived worse psycho-social job-conditions.

Conditions of the physical working environment (hypothesis b-5) were addressed in a similar manner. That is, a list of 8 items concerning the physical environment of the job such as temperature, light, humidity, and noise was asked to evaluate the overall conditions of the work place. A variable was created which ranked each respondent's work place on a continuum of good to poor ranging from 8 to 24 (Cronbach's alpha = 0.82). However, the difference of workers' means (non-manual =18.54, manual =18.71) was not statistically significant (t-value for equal variances = -.445, df=632, p=.656).

Apparently, manual and non-manual categorisation is differentiated more in terms of psycho-social job-conditions, than physical. That is, women with higher socio-economic status (here measured by their own occupations) experience subjectively better psycho-social working conditions, but not necessarily better physical working conditions and this is what distinguishes them from their counterparts in manual jobs. Therefore, perhaps such more positive perceptions of work can be expected to have a positive impact on other aspects of their lives and might consequently also positively influence women's health.

In the case of this sub-sample, a look at the mean score for both physical and psycho-social work conditions reveals that the conditions of work measured by the scores working women have given, seem to be quite poor in their view.

Unpaid work: psycho-social and physical conditions

Non-working women scored significantly higher than working women in terms of their perceived 'psycho-social' *housework* conditions, which was a score generated based on the same scale used to measure psycho-social job-conditions, but this time inquiring about '*housework*' rather than '*job*'-conditions and addressing women in *both* sub-samples. Non-working women obtained a mean score of 34.93 whereas working women had a mean score of 33.98 (the t-value for equal variances = -.2.69 $p<01$) (We can see that again the overall average scores seem to be quite poor in the respondents' view.) It might be because housewifery for non-working women is the main and most important role; something which in a way represents their own identity. Their more positive perception in a way means they feel good about themselves doing something valuable and socially acceptable and respected,

whereas for working women the paid work role is also a sphere in which to prove or display their personal value and worth. Therefore non-working women perceive housework more positively than working women do, considering that housewifery and motherhood are roles highly appreciated and valued by Iranian society (see chapter 3), whereas paid work (out of the home) seems to be still subject to criticisms and regarded with reservation by more traditional layers of Iranian society.

To examine 'physical' *housework* conditions (Q.67) the same scale of questions on physical environment conditions for paid work was used, this time in connection with the housework environment (actually the living place) for the whole sample. That is, the respondents were asked to describe their place of doing housework (their home) in terms of eight items relating to environment physical conditions (Cronbach's alpha = 0.80). Interestingly, non-working women scored lower than the working women, that is, the mean score of physical housework conditions for non-working women was 19.73 whereas for working women it was 20.75 (t-value for equal variances =4.7, df=970, $p<.001$). This may reflect an affluence effect because the physical environment of the place of housework is related to the material resources of households. A t-test of husband's manual/non-manual job and perceived physical housework conditions revealed there was a significant difference between the two distributions. The mean physical housework conditions score for women with husbands with non-manual jobs was 20.76, while for women with husbands in manual jobs it was 18.85 (t-value for equal variances =3.78, df=805, p=.001).

Manual/non-manual jobs and satisfaction

Role satisfaction and satisfaction with life generally are assumed to be affected by multiple role occupancy here. As discussed in chapter 2, the literature has paid a great deal of attention to the associations between multiple roles, job-satisfaction and health (e.g. Emslie, *et al.*, 1999; Dennerstein, 1995). Barnett and Marshal (1991:112) believe that 'role quality is an important predictor of mental health'. As several researchers (Muller, 1986; Waldron and Herold, 1986; Verbrugge, 1986) have noted, the quality of roles, the degree to which roles are willingly assumed, and the subjective evaluation of role may be much more important predictors of health than simply role occupancy. Thus,

> a clear assessment of the effect of multiple roles on health must investigate the inherent characteristics of roles and how those roles are experienced: the privileges, disadvantages and stresses, as well as satisfactions (Hibbard and Pope, 1993:217).

Here, as suggested by Hibbard and Pope (1993), I looked at role-quality and satisfaction, while studying the work-health relationship. I assumed satisfaction in general would be higher among women in non-manual occupations because of the prestige, income, self-esteem and better psycho-social conditions that are normally associated with higher occupational classes. At this point in the discussion, the focus is on the relationships between paid work and social/life context variables. Therefore, I look at the work-satisfaction relationship and leave the wider relationship between 'satisfaction' and 'health' to the next chapter. Hypothesis b-6 suggests that 'women's satisfaction is likely to be higher for those in *non-manual* occupations than those with *manual* occupations'. This hypothesis is based on the assumption that,

although work in general may have beneficial effects on women's well-being, it is perhaps mostly a higher status job which affects women's satisfaction more positively, since Dennerstein (1995: 506) believes that 'although being employed is beneficial even to women in low-level jobs, viewing one's work as a career rather than a job is associated with greater work satisfaction and less role conflict'.

Since satisfaction is here operationalised referring to marital, housewifery, job and life satisfaction in general, we look at each indicator and its relationship with the manual/non-manual work separately.

Satisfaction with the paid work role was assessed by asking all in all how much respondents were happy and satisfied with the job they were doing (Q.52). The chi-square value for the crosstabulation of this variable and the respondent being in a manual or non-manual job revealed a statistically significant relationship (Chi-square =24.67, df=3, $p<.001$). As seen in Table 5-13, working women in non-manual occupations reported higher job-satisfaction compared with women in manual occupations. This is probably a result of better perceived psycho-social working conditions, higher income, and/or prestige usually associated with non-manual occupations.

Table 5-13. Women's manual/non-manual occupation by job-satisfaction

		job-satisfaction			Total
		low	medium	high	
women's occupation	nonmanual	140	284	125	549
		25.5%	51.7%	22.8%	100.0%
	manual	55	58	10	123
		44.7%	47.2%	8.1%	100.0%
Total		195	342	135	672
		29.0%	50.9%	20.1%	100.0%

As for satisfaction with housewifery, respondents were asked how much they would say they were satisfied and happy doing their housewifery duties (Q.65). The Chi-square test for this variable and the manual/non-manual dichotomy showed a statistically significant association (Chi-square =8.19, df=3, p=.042, N=696). Again, those in non-manual occupations reported more satisfaction with their housework than those in manual jobs. This result is perhaps due to the fact that in terms of material resources, women in non-manual jobs are generally better off compared with manual workers, either through being married to husbands of higher occupational classes, or because of their own income, so that their housework duties are performed in greater comfort and with less strain than is the case for manual workers. For manual workers the hardship of housework is perhaps added to the hardship of the manual job they are engaged in and therefore they may find it less satisfying.

With respect to women's general satisfaction, a crosstabulation, showed there was again a statistically significant difference in that non-manual women workers reported higher general

life satisfaction. It seems that perhaps here again the benefits of non-manual paid work such as greater prestige, income, self-esteem and social support have affected the levels of women's life satisfaction positively, something which is not always associated with lower occupational classes.

For women's satisfaction with marital life, there also was a statistically significant association (Pearson's Chi-square test on the relationship between women's marital satisfaction and being in a manual or non-manual job = 28.12, df=4, $p<.001$). Table 5-14 shows the crosstabulation. Women from non-manual jobs reported a higher level of satisfaction than manual workers. This might be affected by husbands' characteristics such as educational level, income and material resources. Non-manual workers were already reported to be married to more educated husbands and as a consequence to husbands with higher occupational classes. This may have affected their marital life in financial and intellectual dimensions, in that more educated men may be more affectionate, supportive and understanding to their wives due to better education, and less traditional attitudes/or they may provide better material resources for their family-members.

Table 5-14. Working women's marital satisfaction

		marital satisfaction			Total
		low	medium	high	
women's occupation	nonmanual	52	147	363	562
		9.3%	26.2%	64.6%	100.0%
	manual	32	35	61	128
		25.0%	27.3%	47.7%	100.0%
Total		84	182	424	690
		12.2%	26.4%	61.4%	100.0%

In every aspect of satisfaction, working women in non-manual occupations showed a higher level of satisfaction compared with manual job-holders. As suggested before, this might be due to the advantages of non-manual work over manual work in terms of material resources or non-material rewards such as greater prestige, self-esteem or social support associated with higher occupational classes, if not due to the effects of other background factors which may be involved in this relationship, such as husband's characteristics or household's socio-economic status (in which case the *whole sample* should be looked at and not only the working women's sub-sample). In bivariate analyses it is not possible to control for spurious or suppressed effects of other variables such as husband's occupational class as a measure of the households' socio-economic status, but multivariate analyses (in later chapters) will be helpful in this respect.

Paid work and economic independence

Economic independence (see chapter 4) is a concept usually associated with women's working role. This variable is assumed to be associated with women's paid work role on the one hand, and health on the other. This chapter focuses on the first part of this relationship. Hypothesis b-7 examines the relationship between whether or not a woman works and her level of economic independence (Q. 61[10], see also chapter 4). I carried out a chi-square test for the crosstabulation of the two variables (Chi-square value=18.66, df=2, p<.001).

Table 5-15. Economic independence related to working/not-working

			three category- independence			
			low	medium	high	Total
	working	Count	78	238	376	692
			11.3%	34.4%	54.3%	100.0%
	nonworking	Count	69	126	148	343
			20.1%	36.7%	43.1%	100.0%
Total		Count	147	364	524	1035
			14.2%	35.2%	50.6%	100.0%

As seen in Table 5-15 above, working women show higher levels of economic independence. Further crosstabulation also showed a statistically significant difference (Chi-square value =12.68, df=4, p<.01) between manual and non-manual workers. That is, those in higher occupational classes reported higher levels of economic independence compared with manual workers (see Table 5-16).

[10] The answers to Question 61 (on who usually makes the economic decisions on the respondent's own income/savings or wealth are recoded to be interpreted as 'dependent' (only husband, mostly husband), medium dependence (equally both), and independence (mostly her, only her).

Table 5-16. Economic independence among working women

		dependent	medium	indep.	Total
women's manual/nonmanual occupation	nonmanual	55	192	316	563
		9.8%	34.1%	56.1%	100.0%
	manual	23	46	60	129
		17.8%	35.7%	46.5%	100.0%
Total		78	238	376	692
		11.3%	34.4%	54.3%	100.0%

Therefore, the working role in general and working in non-manual occupations in particular seem to be associated with women's higher levels of economic independence. In both of these cases we can consider the effect of educational achievement. Nevertheless, women who work seem to be generally more self-confident in dealing with their own financial affairs, perhaps because they have their own income, feel more relaxed in public spheres, less reliant on their husbands in sorting their finances and so on. Manual workers' lower levels of economic independence might be because their work is possibly more motivated by the household's basic financial needs, so that a woman's income would be less freely in her control, to spend on herself or as she wishes, or is affected by lower educational levels.

The work and social support relationship

As discussed in chapter 2, social support is expected to be affected by the working role (hypothesis b-8). It is believed that the working role broadens the levels of social support that a woman enjoys. Social support is operationalised here in different ways to take account of its multiple dimensions and complexity (see chapter 4).

Practical and financial support was examined by two questions (Q.74 and 74-a) which asked the respondent how much she thought she could rely on friends and family's help if she was in trouble, for example in financial need. A crosstabulation of the responses to the question on relatives' and family's support (Q.74) with the variable of working/non-working did not result in a statistically significant Chi-square value (=5.78, df=4, p=.217). The Chi-square value for the crosstabulation of friends' help and support was 8.427 (df=4, p=.077), which is also not statistically significant. The lack of significant difference is however not surprising since this dimension of social support is not necessarily expected to be affected by the working role as much as other indicators of social support, such as social contacts and number of friends.

Emotional and practical help (e.g. in the case of illness) was explored as another dimension of social support (Q.24) in relation to the working role. Interestingly, it was non-working women who said they received a significantly higher amount of this kind of support (see Table 5-17) (Chi-square value = 9.44, df =1, p< .01).

Table 5-17. Crosstabulation of women's working/non-working status by the availability of help when in need.

		Availibility of help in need (sick)		
		yes	No	Total
	working	554	156	710
		78.0%	22.0%	100.0%
	nonworking	305	50	355
		85.9%	14.1%	100.0%
Total		859	206	1065
		80.7%	19.3%	100.0%

As with the previous indicator of social support, this was not necessarily expected to be affected by the paid work role, therefore the result is not surprising. However the fact that non-working women reported receiving higher levels of support is interesting. It may be helpful to look at the second part of this question to find reasons for this. A further question (Q.24-a) asked who a woman thinks would help her when in need, with a range of options. 'Husband' was the most frequently chosen option by both working and non-working women (48.6 and 50.4 per cent respectively). Second came 'parents' (37.7 per cent) in case of working women, and 'children' (38.3 per cent) in case of non-working women (see Table 5-18).

Table 5-18. Who helps when in need (in case of illness)[11]

	Working women	Non-working women
Helpers	%	%
Parents	37.7	34.1
Sisters/brothers	17.6	12.7
Children	18.7	38.3
Husband	48.6	50.4
Friends/neighbors	3.9	3.7
Other relatives	5.5	7.6
Others	0.6	0.0

With respect to women relying on their husband's support, Brannen and Moss (1991:208) found that: 'women... talked about husband's emotional support in terms of being "always there", or being there "if I wanted him" '. They also point to the importance of mothers' support in a similar way. Thus, 'husbands and mothers appear to be key figures in providing women with a sense of basic security - persons upon whom women felt they could rely in an emergency or crisis' (Brannen and Moss, 1991:208). Elsewhere, the reliance of women on husbands' support has been hypothesised to be due to the spread of nuclear families in the West; 'in nuclear families women often lack the support of an extended family and are particularly dependent on the quality of their relationship with their husband or partner' (Williams, *et al.* (1997:827). In my sample, we see the importance of both 'husbands' and 'parents' (evidently mostly mothers), but the point is that in the case of non-working respondents, we find that after husband's support, it is their children, on whom they rely most, and perhaps this is where working and non-working mothers are different, which provides clue to why we see a difference in this respect between the two sub-samples. Earlier we found that non-working mothers had significantly lower ages at first marriage and first pregnancy.

[11] The percentages do not add up to 100 because multiple answers were possible.

They also had a significantly higher number of children than working women and also, because of their lower average age at first marriage, relatively older children on whom they can rely when in need. This can apparently influence the fact that next to 'husband' they have referred most to 'children' as their sources of help. They have these two sources of help available at home, whereas for working mothers with fewer or younger children the next available helper is reported to be 'parents'.

Socialising and contact with friends. Through a series of questions (Q75, 75-a, 75-b, 75-c), I inquired about the number of friends, close friends and colleague-friends the respondent had, and how many she had seen within the last month. Working women had on average (median=) 9 friends of whom, on average (median=) 3 were considered close friends (of which 2 i.e. 62 per cent of these three close friends) were among colleagues or associated with their paid work. On average, the respondents had seen 2 of their close friends within the last month.

On average, non-working women had 6 friends, 3 of whom were close friends, and reported having seen 2 of their close friends within the last month.

Comparing the *mean* figures, it seems that working women enjoy a wider spectrum of friendships, and work is perhaps effectively influencing their chances of enhancing the grounds for friendship relationships. A t-value of 3.47 ($p<.001$) revealed a statistically significant higher average number of close friends (mean = 3.44) for working women than for non-working women (2.64). The mean number of friends they had managed to see was higher for non-working women (1.89 compared with 1.75 for working women). However, the t-test

revealed that the difference was not statistically significant (t-value = -1.04, p=.297). These results suggest that this indicator of social support clearly reflects the importance of paid work for broadening women's social contacts as referred to by Fuller *et al.* (1993).

Social participation. The arena of social activities is another dimension of social support.

Table 5-19. Percentages of working and non-working women attending itemised social activities either regularly or irregularly *.

Activities	**Working mothers (%)**			**Non-working mothers (%)**			**Chi-square**	**sig.**
	Regularly	Non-regularly	No activity	Regularly	Non-Regularly	No activity		.
Sport clubs	4.1	25.6	70.3	5.6	22.8	71.5	1.89	.169
School assemblies	17.5	20.8	61.7	32.4	25.4	42.3	2.28	.023
Religious, charity events	10.1	32.7	57.2	14.9	30.7	54.4	2.04	.036
Art, baking, .. Classes	3.1	11.4	85.5	5.4	13.0	81.7	1.13	.247
Foreign language	3.0	8.0	89.0	2.3	8.5	89.3	0.68	.493
Trips with friends	4.6	29.7	65.6	3.4	14.1	82.5	1.06	.247

1. The total percentages of less than 100 are due to missing values (2% working sample and 1.1 % non-working sample).

As seen in Table 5-19, the highest percentage of both working women (17.5%) and non-working women (32.4%) regularly attend their children's school assemblies, though the percentage for non-working women is statistically significantly higher. Another area of statistically significant difference among the respondents is that of 'participation in religious and charity events' where, again, non-working women take the lead. In general, it seems that more non-working than working women are socialising and going out. This might be because

non-working women enjoy more spare time compared with women in paid work for whom lack of spare time is usually a problem, and/or they are eager for participation and social activities as remedies to escape the monotony of housework. Charity and religious assemblies are popular with both groups of women, since they are traditionally and historically amongst women's favourite leisure activities in Iranian society (see chapter 3). Such gatherings and meetings serve various functions; to visit friends and relatives, chat to each other, get psychological relief by crying for the religious saints and over their own problems, give donations for the poor and those in need, as well as to pray.

Marital support and companionship

There were two questions on this dimension of social support. First it was asked how much the respondent felt her husband would help and be there for her if she was in trouble and in need of his companionship. In total 52.7 per cent of working women, compared with 54.9 per cent of non-working women said that they counted highly on their husband's help and companionship when in need (Chi-square=1.31, df=2, p=.518) A second question asked the respondent how much she thought her husband appreciated her efforts and work for the family. In this case, 51.8 per cent of working women and 53.5 per cent of non-working women said their husbands highly appreciated their wives' work. Again, the difference was not statistically significant (Chi-square=.503, df=2, p=.778).

Reviewing the results for different aspects of social support, the areas which revealed statistically significant differences between the two sub-samples, which could possibly indicate the influence of paid work on women's social support seem to be those of the

number of friends in general and number of close friends, in which working women did remarkably better compared with non-working women. On the other hand, in terms of emotional support and social participation in particular activities such as school assemblies (where parents and teachers gather to discuss children's and educational affairs) and charity and religious events, non-working women did better. As discussed earlier, the demographic characteristics of non-working women and the fact that they have more spare time compared with working women seems influential.

Paid work and the domestic division of housework and responsibilities

One tends to expect that in dual earner households there will be a more equitable division of responsibilities between spouses. Indeed Western research has found that 'husbands' participation in household tasks and child-care is gradually increasing' (Pleck, 1985 cited by Wortman *et al.*,1991:94) even though actually 'wives still perform a disproportionate share of the duties' (Wortman *et al.*,1991:94). According to Annandale and Hunt (2000:16 referring to Britain), 'there is some evidence that the amount of work that women undertake in the home has declined as they have entered paid employment' with men increasing their proportion of housework. To examine the situation among the women in the sample, I classified the terrain of sharing household responsibilities into three main areas: housework, child-care and decision making:

a. Housework:

First, I asked a general question on how much the respondent thought her husband actually helped with housework and chores (Q.55). Among working women 40.9 per cent and among

non-working women 42.4 per cent said their husbands helped them to 'some' extent (in the middle point of the five option-response set). On the extremes, slightly more working women (8.3 per cent) than non-working women (6.8 per cent) perceived their husband's help at a high level ('very much') and fewer working women (12.6 per cent) than non-working women (16.7 per cent) said their husbands' share of housework was 'none'. The Chi-square for this crosstabulation was 16.2 (df=4, p= .003).

Looking at the items individually, the picture becomes clearer. I had a uniform set of questions (Q.56) on different aspects of housework, which asked the respondents to indicate who (regardless of children's help) was actually in charge. The answers were recoded into three main categories of wife, equally, and husband, where a job being performed either 'only' or 'mostly' by women was classified as 'wife', the middle category remains 'equally both', and the final category combines 'mostly husband' and 'husband only'.

As seen in Table 5-20, in both sub-samples there are similarities in the patterns of sharing tasks. In both sub-samples women's share of the 'cooking' and 'laundry' is the highest. Also not surprisingly, in both sub-samples the husband's share of the 'repairs' and 'bill-payments' is the highest. The area of greater interest may be items which are performed equally by both spouses. The highest percentages for equal sharing pertained to 'hospitality when having guests' followed by 'grocery-shopping'. The least shared area is that of 'cooking'. The results here broadly resemble the situation in Britain concerning the sharing of typical housework tasks such as washing and repairs (see Annandale and Hunt, 2000). As seen in Table 5-20

husbands' participation, e.g. in shopping and washing up, is significantly greater among working women than among non-working women.

Table 5-20. Itemised housework responsibilities performed by the spouses

	Working sub-sample			Non-working sub-sample			
Items	**wife performs**	**equally both**	**husband performs**	**wife performs**	**equally both**	**husband performs**	**Sig. of Chi-square**
Washing up	85.7	10.9	3.4	91.7	7.7	.6	.004
Cooking	95.3	3.6	1.0	97.7	2.0	.3	.145
Laundry	89.8	7.3	2.9	94.2	4.9	.9	.033
Cleaning up	84.2	13.4	2.3	91.4	8.0	.6	.004
Shopping	30.2	20.8	49.1	34.8	26.4	38.8	.006
Repairs	12.5	9.3	78.2	12.0	9.1	78.9	.973
Paying bills	22.7	18.2	59.0	21.5	16.3	62.2	.603
Hospitality	57.9	36.8	5.2	58.6	38.3	3.1	.312

Apparently working women's husbands are sharing more housework responsibilities in their wives' views than non-working women's husbands.

Respondents were also asked how much they would *like* their husbands to help with the housework (compared with what they actually did, Q59). Interestingly, working and non-working women reacted differently to this question; that is the majority of working women (47.3 per cent) said they would like their husbands to help 'quite a bit', whereas the majority of non-working women (50.9 per cent) wished their husbands helped only to 'some' extent (the middle option). There was a highly statistically significant difference among the two sub-samples on this (Chi-square= 32.76, df=4, $p<.001$). Seemingly non-working women are inclined to believe that men are not to be expected to participate in housework, perhaps due to the idea that housework is considered a woman's duty.

This may be in line with the 'low expectations' referred to by Brannen and Moss following their findings (1991:203):

> Exemptions to excuse men's low participation in domestic work were closely connected to low expectations held by women. These might be focused on some specific aspect of the partner's job or his perceived domestic competence, but more generally reflected a view about what men could reasonably be expected to do, given acceptance of their primary breadwinning role and the priority attached to their employment. Low expectations could make women grateful for even the most modest domestic contribution by a partner.

Baxter and Western (1998:117) believe that gender role attitudes play a key role; 'women with more traditional attitudes tend to be more satisfied with the domestic division of labour than women with more liberal gender role attitudes'. On the role of educational achievement, they conclude that 'more educated women are less satisfied with their domestic labour than less educated women are' (Ibid. 117). This seems to be the case with our sub-samples. As seen earlier, the non-working women in this research are significantly less educated than working women. To explain further, Baxter and Western (1998:117) write,

> more educated women have more valued social resources than women with less education, and they may therefore feel the mismatch between their educational status and an inegalitarian division of domestic labour more strongly than women with fewer educational resources.

Adding the scores of the 8 items (Table 5-20) together to derive an overall score of husband's help with the housework, I constructed a scale ranging from 8 to 40 on which the lowest score meant husbands did not share in the housework at all, and the highest score meant that husbands were doing all the housework (Cronbach's alpha = 0.72). The mean 'help' score for working mothers was 19.51 and for non-working mothers it was 18.64 (t-value= 2.79, $p<.01$). Working women's husbands appeared to share more than non-working women's husbands in housework.

To see if the reason behind a more equitable division of household responsibilities among working women was their husband's higher education or younger age, I carried out further statistical tests which showed a significant Pearson's correlation coefficient of 0.14 ($p<.001$) for husband's educational level and a statistically significant negative correlation coefficient (-.22, $p<.001$) for husband's age in relation to the participation-scale, i.e. the higher the educational level, the higher the husband's participation, and the older the age, the lower the participation. Therefore younger age and higher educational level, which may indicate husband's less traditional attitudes and more liberal orientations towards sex-roles, are contributing to the fact that working women's households show a more equitable division of housework duties. The issue of whether or not husbands' help in housework affects women's health will be considered among other hypotheses (category c) in chapter 6.

B- Child-care

First, respondents were asked how much they thought their husbands helped them with childcare (Q57). Both working (41.2 per cent) and non-working (44.3 per cent) mothers tended to choose the middle response of 'some' help (Chi-square 1.58, df=4, p=.813).

In addition, there was a set of questions on who was actually in charge of tasks which concerned children, giving instances of child-care items (Q.58).

Table 5-21. The relative distributions on division of child-care responsibilities in working and non-working women's households

	Working mothers			Non-working mothers			
Child-care items	Wife performs %	Equally both %	Husband Performs %	Wife performs %	Equally both %	Husband performs %	Sig. of Chi-square
Taking to school/ picking up	53.7	25.0	21.3	52.4	26.7	20.9	.901
Disciplining	53.3	44.9	1.8	43.3	54.1	2.5	.009
Entertainment	38.0	43.6	18.4	28.3	56.0	15.8	.001
Looking after a sick child	70.9	27.1	1.9	74.0	24.9	1.1	.441
Education matters	69.7	21.1	9.2	66.1	28.3	5.6	.017

As seen in Table 5-21, the areas which show statistically significant differences between the two sub-samples are those concerning children's discipline, entertainment and education matters. In these areas, husbands seem to be more involved among the non-working mothers' sub-sample (looking either at the column 'equally both', or 'husband performs'). In the case of education matters or discipline, this may partly be due to the fact that on average non-working mothers have lower educational levels themselves, so that they cannot help with their children's educational matters as much as working mothers.

For a generated scale based on all 13 items of the scales of housework responsibilities (8 items) and child-care (5 items) together, the Cronbach's alpha was 0.81. The potential range of scores for this scale was 13 to 65 (t-value for the equal variances = 1.32, p =.187). No significant difference between the working and non-working women's means for this overall scale was found.

C. Decision-making on household affairs

Respondents were asked questions on who was in charge and responsible for making decisions on issues such as buying or selling the family's precious items (financial decisions), deciding on the number of children they had or were to have, and socialising, such as whom to visit and socialise with (Q.60, 62, and 63).

Among the working women sub-sample, the financial decisions were largely taken equally by both spouses (52.3 per cent), with the second highest 'mostly by the husband' (25.0 per cent) and the least by 'women only' (3.9 per cent) (see Table 5-22). For non-working women, the bigger percentage also chose the option 'equally' (though with a relatively lower percentage of 38.1 per cent). 'Mostly husband' was the second highest (33.0 per cent) option and the lowest percentage was 'only you '(wife) (0.9 per cent). The result of a test showed that the difference among the two samples was statistically significant (Chi-square value =61.00, df=4, p<.001).

Table 5-22. Who usually makes financial decisions in the household

		Who decides in your family: about selling/buying important items:					Total
		wife only	mostly wife	equally	mostly husb.	only husb.	
	working	27	50	364	174	81	696
		3.9%	7.2%	52.3%	25.0%	11.6%	100.0%
	nonworking	3	8	133	115	90	349
		0.9%	2.3%	38.1%	33.0%	25.8%	100.0%
Total		30	58	497	289	171	1045
		2.9%	5.6%	47.6%	27.7%	16.4%	100.0%

In working women's households, women are more involved in financial decision making than in non-working women's households. This means that working women have more control in the family's economic life, in line with their greater economic independence. This perhaps indicates a change from a traditional family, where only men were in charge of household finances towards a modern family with both spouses having a say in decision making and with more egalitarian attitudes. This seems to be affected by the fact that in dual earner families in this sample, both spouses are of higher educational levels, which seems to predispose them to being open to new ideas about women's rights and capabilities.

Another example of decision making concerned who in the family decided how many children they should have. In total, 68.1 per cent of working women, and 70.9 per cent of non-working women, said it was decided by both spouses 'equally'. A marked difference was observed in the percentages of the choice 'only you' (wife) at 10.1 per cent of working women and only 5.5 per cent of the non-working women. Relatively fewer respondents said 'husband only'

among working women (2.4 per cent) than among non-working women (5.5 per cent). The observed difference between these two groups of women was statistically significant (Chi-square=16.09, df=4, p=.003). It seems that in working women's households women have greater control on this matter than in non-working women's households (see Table 5-22).

Table 5-23. Who decides on the number of children in the family

		Who decides: No of children to have?					
		only wife	mostly her	equally	mostly him	only him	Total
	working	68	86	457	44	16	671
		10.1%	12.8%	68.1%	6.6%	2.4%	100.0%
	nonworking	18	30	231	29	18	326
		5.5%	9.2%	70.9%	8.9%	5.5%	100.0%
Total		86	116	688	73	34	997
		8.6%	11.6%	69.0%	7.3%	3.4%	100.0%

Deciding with whom to socialise was another dimension of decision-making. The working women (49.4 per cent) and non-working women (49.3 per cent) largely said it was equally both of the spouses who decided. Only 2.3 per cent of working women, compared with 6.9 per cent of non-working women, said it was decided only by the husband and 12.8 per cent of working women, compared with 10.7 per cent of non-working women, reported that only they made the decisions. This difference was statistically significant (Chi-square= 20.107, df=4, p<.001) (see Table 5-24). Considering that the option of 'equally both' spouses was selected by about 50 per cent of both sub-samples, it appears that working women have a higher level of control on this issue than non-working women. This is in line with working women's greater control in household's affairs generally.

Table 5-24. Who decides on the household's social and friendship relations

		Who decides: With whom to socialis/visits?					
		only you	mostly her	equally	mostly him	only him	Total
	working	89	156	342	90	16	693
		12.8%	22.5%	49.4%	13.0%	2.3%	100.0%
	nonworking	37	57	171	58	24	347
		10.7%	16.4%	49.3%	16.7%	6.9%	100.0%
Total		126	213	513	148	40	1040
		12.1%	20.5%	49.3%	14.2%	3.8%	100.0%

So far in this chapter we have reviewed the relationships between two main groups of variables in our theoretical model i.e. 'work and work-related variables' and their effects on the group of 'life/social context variables'. In the following section we will also look at the effects of some of the socio-demographic variables on the life-social context variables (i.e. Group-1 and Group-3 variables relationships).

Education and a more equitable division of responsibilities

The third group of hypotheses (Category C) deriving from the theoretical model guiding this research concern relationships between 'socio-demographic factors' and a number of 'life/social context variables'. In this category, and also in other sets of hypotheses, I do not examine all of the *possible* relationships among the groups of variables present in the theoretical model, but those which, according to the theoretical framework, specifically contribute to the work-health relationship. Category-C hypotheses are as follows:

c- 1. Working women with husbands of higher education are more likely to enjoy greater agreement from their husbands on their working.

c-2. Women of higher educational level are more likely to engage in health-promoting behaviour (This hypothesis will be looked at in chapter 6).

Husband's educational level and his agreement with wife's working

Hypothesis c-1 refers to the effect of husband's education on his agreement with his wife's working. Earlier we saw that women whose husbands consented to their working role experienced less role-conflict (which in turn is hypothesised to affect health). A crosstabulation of the two variables (Chi-square=169.6, df=25, $p<.001$) revealed a statistically significant association. Thus, more educated husbands were more in favour of their wives' working role (see Table 5-25).

Table 5-25. Husband's educational level and his consent to his wife's working

			husband's consent		
			agrees	disagrees	Total
Husband's educational level	1.00	low	45	14	59
			76.3%	23.7%	100.0%
	2.00	medium	213	44	257
			82.9%	17.1%	100.0%
	3.00	high	315	35	350
			90.0%	10.0%	100.0%
Total			573	93	666
			86.0%	14.0%	100.0%

Earlier, I also examined the importance of husband's age and education on level of help with housework and found out that younger and more educated husbands showed more egalitarian attitudes towards the division of domestic division of labour in their households. All this shows the importance of socio-demographic factors on life-social context variables.

In this chapter I have looked at the socio-demographic characteristics of the two main sub-samples, and then reviewed the relationships between Group 1, 2 and 3 variables according to the hypothesised relationships of the category A, B, and C hypotheses. In the following

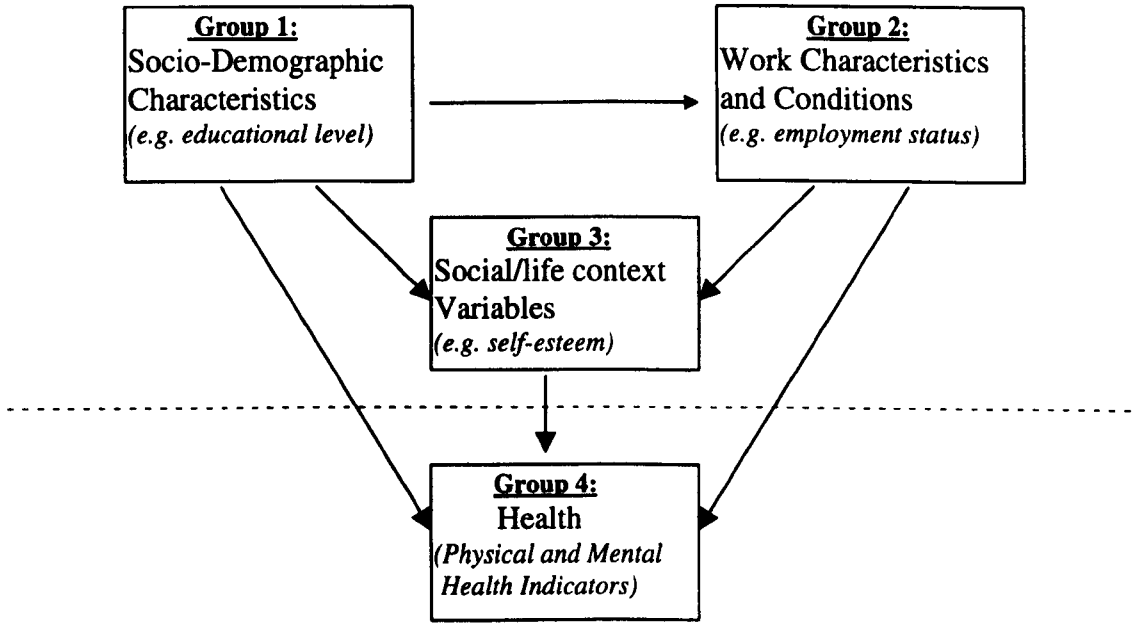
chapter we will look at the bivariate associations between these three groups of variables on the one hand and the indicators of women's health on the other.

Chapter 6

Data on Women's Health

In the previous chapter we looked at the relationships between the groups of variables in the upper part of the theoretical model; that is the relationships between factors influencing health. This chapter deals with the second (lower) part, which concerns the effects of various explanatory variables on health.

Figure 6-1. Theoretical model of this research (repeated)



The category-D hypotheses concern certain expected relationship between group 3 and 4 variables as follows:

D- Group 3 and 4:

d-1. Women with higher self-esteem are likely to be in better health.

d-2. Women with broader social support are likely to be in better health.

d-3. Women experiencing more stress are likely to be in worse health.

d-4. Women with higher satisfaction are more likely to be in better health.

d-5. Women experiencing role-conflict are likely to be in worse health.

d-6. Women with better behaviours are likely to be in better health.

d-7. Women from households with a more equitable division of household responsibilities are more likely to be in good health.

Hypotheses about relationships between Group-1 and Group-4 variables, as well as between Group-2 and Group-4 variables, will be examined (see Figure 6-1).

Hypotheses concerning those relationships are as follows:

Category E-hypotheses: (Group 1 and 4 relationship)

e-1. Younger age is associated with better health.

e-2. Women with a care-taker role are more likely to be in worse health.

e-3. Working women with under-school age children are more likely to be in worse health.

e-4. Women from households with better material resources/ higher socio-economic status are more likely to be in better health.

Category F-hypotheses: (Group 2 and 4 relationship)

f-1. Women with better psycho-social conditions at work are more likely to report better mental health.

f-2. Women with worse physical conditions at work are likely to be in worse health.

In this chapter, which is entirely devoted to the analyses concerning the health indicators, I first report the distributions of the various health measurements used in this survey. Then I move on to discuss the observed relationships and interconnections between the above mentioned groups of variables of the theoretical model.

Health and morbidity

Discussions of the complexity of health measurements and the concept itself have already been referred to in previous chapters. Suffice it to say here that health is multi-dimensional (Armstrong, 1989) and, as Stein (1997:80) has pointed out, 'envisioning health as a changing and complex web of interacting factors implies that the measurement of health itself is complex and variable'. In spite of all the problems associated with operationalising this concept, researchers in the field have provided a basis for health-analyses. I draw on existing research for some of the commonly and inter-culturally approved methods of operationalising health.

a. Physical health

Being aware that there are critical views on attempting to separate 'physical' and 'psychological' health (Clarke, 1983), I first review physical dimensions of health. I will compare the outcomes for the two sub-groups of working and non-working women. For certain health indicators, I exclude data from respondents who were pregnant at the time of the interview (11 non-working women and 20 working women) to avoid the effects of the state of pregnancy, which could possibly influence assessments of health.

Illness symptoms

Among measurements of the subjective experience of morbidity, I used a list of 15 physical symptoms. I calculated the total number of symptoms to construct a new variable to distinguish between low (0-1 symptoms), average (2-3) and high (4+) levels, as used in The Health and Life-Style Survey (HALS) (Cox, *et al.* 1993). Moreover, respondents were asked to specify whether the symptoms they referred to related to the last month, or if they tended to suffer from them generally. This is useful in order to distinguish between potentially temporary symptoms related to the particular season (winter) when the interview took place, and more durable/chronic symptoms (see Table 6-1).

Table 6-1. Last month's symptoms reported by working and non-working women *

Symptoms	**Working women**		**Non-working women**	
	(N)	%	(N)	%
Headaches	183	**20.5**	77	**20.5**
Trouble with periods	62	7.0	23	6.1
Catarrh	36	4.0	6	1.6
Faints or dizziness	16	1.8	9	2.4
Allergies	20	2.2	4	1.1
Trembling hands	14	1.6	5	1.3
Diarrhoea	6	0.7	2	0.5
Sore throat	50	5.6	30	8.0
Teeth problems	**97**	10.9	**41**	10.9
Trouble with ears	13	1.5	8	2.1
Constipation	30	3.4	10	2.7
Sight-problems	56	6.3	28	7.5
Cold and flu	172	**19.3**	66	**17.6**
Leg-ache	100	**11.2**	42	**11.2**
Palpitations or breathlessness	36	4.0	24	6.4
Total	891	100.0	375	100.0

* The three highest percentages are in bold characters.

As seen in Table 6-1, the most frequently reported symptoms for both sub-samples of women pertain to 'headache', 'cold and flu' and 'leg-ache'. Looking at the list of symptoms women

generally tend to suffer from (see Table 6-2), we can see that 'headache' and 'leg-ache' are among the highest percentages for both groups, but instead of 'cold and flu' which is a temporary symptom related to the season of the interview (winter), we have 'sight problems' and 'teeth-problems' for both sub-samples as the third and forth highest percentages among all other symptoms.

Table 6-2. Symptoms respondents tend to suffer generally, reported in working and non-working women's sub-samples

Symptoms	**Working women**		**Non-working women**	
	(N)	%	(N)	%
Headache	105	**14.8**	55	**14.0**
Trouble with periods	52	7.3	35	8.9
Catarrh	34	4.8	17	4.3
Faints or dizziness	20	2.8	8	2.0
Allergies	52	7.3	21	5.3
Trembling hands	20	2.8	17	4.3
Diarrhoea	4	0.6	4	1.0
Sore throat	9	1.3	31	7.9
Teeth-problems	**79**	11.2	**48**	**12.2**
Trouble with ears	16	2.3	6	1.5
Constipation	50	7.1	28	7.1
Sight-problem	92	**13.0**	34	8.7
Cold and flu	18	2.5	9	2.3
Leg-ache	107	**15.1**	51	**13.0**
Palpitations, breathlessness	50	7.1	29	7.4
Total	708	100.0	393	100.0

The results based on an additive score of number of symptoms in the last month (after excluding the pregnant women) and symptoms generally, and their percentages, are shown in Table 6-3.

Table 6-3. Working and non-working women who reported low, average and high illness levels in the last month and generally

Illness-level	**Working women**		**Non-working women**	
	Last month %	Generally %	Last month %	Generally %
Low illness	64.5	74.2	72.6	69.4
Average illness	27.4	16.9	20.1	23.0
High illness	8.1	8.8	7.3	7.6
Total	100.0	100.0	100.0	100.0

The Pearson's Chi-square analysis revealed that the observed difference between working and non-working women for symptoms in the last month was statistically significant (Chi-square=7.25, df=2, p<.05), with working women appearing to have higher illness levels. However, the Pearson's Chi-square (5.62, df=2, p=.060) shows no significant difference between the two sub-samples for symptoms suffered generally.

Long-standing illness

In total, 38.6 per cent of the sample reported some kind of long-standing illness or disability, 73.1 per cent of whom reported it to be of a limiting kind (see Table 6-4 and 6-5).

Table 6-4. Long-standing illness

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	411	38.6	38.6	38.6
	No	654	61.4	61.4	100.0
	Total	1065	100.0	100.0	

Table 6-5. Does the long-standing illness limit respondent's daily activities?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	275	25.8	73.1	73.1
	No	101	9.5	26.9	100.0
	Total	376	35.3	100.0	
Missing	na	654	61.4		
	missing	35	3.3		
	Total	689	64.7		
Total		1065	100.0		

In total, 40.4 per cent of working women and 37.0 per cent of non-working women reported they were suffering from a long-standing illness or disability (Chi-square value=1.05, df=1, p= .303). There was also no difference between the two sub-samples in terms of whether the condition was limiting or not; 26.5 per cent of working women and 26.2 of non-working women had such condition (Chi-square = .43, p= .510).

Long-standing problems reported by the respondents were recoded into the 19 categories of the International Classification of Diseases (ICD) (see Table 6-6).

Table 6-6. The frequencies and percentages of illnesses coded to ICD- categories

	Categories of Diseases*,**	**Working women**	**%**	**Non-working women**	**%**
1	Infectious and parasitic diseases	5	1.3	0	0.0
2	Neoplasms	3	0.8	1	0.5
3	Endocrine, nutritional and metabolic diseases, and immunity disorders	25	6.5	15	7.8
4	Diseases of the blood and blood-forming organs	12	3.1	4	2.1
5	Mental disorders	22	5.7	15	7.8
6	Diseases of the nervous system	35	9.1	13	6.7
7	Diseases of the circulatory system	53	**13.8**	34	**17.6**
8	Diseases of the respiratory system	27	7.0	8	4.1
9	Diseases of the digestive system	28	7.3	22	11.4
10	Diseases of genito-urinary system	21	5.5	11	5.7
11	Complications of pregnancy, child-birth	1	0.3	0	0.0
12	Diseases of skin and subcutaneous Tissue	3	0.8	1	0.5
13	Diseases of musculoskeletal system and connective tissue	75	**19.5**	41	**21.2**
16	Symptoms, signs and ill-defined conditions	73	**19.0**	28	**14.5**
17	Injury and poisoning	1	0.3	0	0.0
	Total	384	100.0	193	100.0

* Four of the 19 categories (i.e. categories 14, 15, 18 and 19) are missing because they were not reported by the respondents. ** People could have referred to more than one category.

When we compare the working and non-working sub-samples, we find overall similarities in terms of the chronic illnesses they reported (see Table 6-6). For both sub-samples the highest percentages related to problems of the 'musculoskeletal system and connective tissue' (19.5 per cent and 21.2 per cent for working and non-working women respectively). For the working women's sub-sample, the second and third highest percentages related to 'symptoms, signs and ill defined conditions' and 'diseases of the circulatory system'. For the non-working women's sub-sample the same categories emerged but in inverse order.

To compare the relative distribution of the chronic illnesses in the two sub-samples in terms of the severity of the diseases, they were recoded as 1=trivial, 2=intermediate and 3=severe using Morbidity Statistics from General Practice, 1991-92 (McCormick *et al.*, 1995) which were based on the International Classification of Diseases. Accordingly each category was defined as follows (Ibid.:63):

> **Serious** diseases include:
> 1- Those which at the time are invariably serious,
> 2- Those which invariably require surgical intervention,
> 3- Those which carry a high probability of serious complications or significant recurring disability.
>
> **Intermediate** diseases include:
> 1- Those which, though sometimes potentially serious, are classified to a morbidity code which spans a wide range of severity, or embraced by a diagnostic term which is used with widely disparate meaning by general practitioners;
> 2- Those which, though not often serious, are usually brought to the attention of the general practitioner.
>
> **Trivial** diseases include:
> 1- Illnesses commonly treated without recourse to medical service,
> 2- Minor self-limiting illnesses which require no specific treatment,
> 3- Diseases which are not included above.

The working and non-working women were compared in terms of the degree of severity of their diseases. The tables which follow demonstrate the distributions of the incidents of illnesses in terms of the three severity levels for both sub-samples.

Table 6-7. Long-standing illnesses with the severity level 1 (trivial)

		Incidence of illnesses with severity 1(trivial)					
		1.00	2.00	3.00	4.00	5.00	Total
	Working women	116	38	12	1	1	168
		69.0%	22.6%	7.1%	.6%	.6%	100.0%
	Non-working women	48	19	3			70
		68.6%	27.1%	4.3%			100.0%
Total		164	57	15	1	1	238
		68.9%	23.9%	6.3%	.4%	.4%	100.0%

As seen in Table 6-7, only two of the working women report either four or five illnesses, and these have all been categorised as trivial. For those who have mentioned only one illness, the percentages in both samples are almost the same (Chi-square = 1.90, p=.755). There is no statistically significant difference between the two distributions.

Table 6-8. Long-standing illnesses with severity level 2 (intermediate)

		Incidents of illnesses with severity 2			
		1.00	2.00	3.00	Total
	working	90	19	2	111
		81.1%	17.1%	1.8%	100.0%
	nonworking	47	8		55
		85.5%	14.5%		100.0%
Total		137	27	2	166
		82.5%	16.3%	1.2%	100.0%

According to the data in Table 6-8, working women report slightly more intermediate chronic illnesses than non-working women, but the difference is not statistically significant (Chi-square value=1.23, p=.542).

Table 6-9. Long-standing illnesses with the severity level 3 (severe)

		Incidents of illnesses with severity 3			
		1.00	2.00	3.00	Total
	working	81	8	1	90
		90.0%	8.9%	1.1%	100.0%
	nonworking	41	12		53
		77.4%	22.6%		100.0%
Total		122	20	1	143
		85.3%	14.0%	.7%	100.0%

The Chi-square value of 5.73 (p=.057) for severe illnesses was almost significant, with more non-working women suffering from severe illnesses.

However, in general the distributions reveal that there are not significant differences between the two groups of women in terms of the incidence, kind and severity of their long-standing illnesses.

Doctor-consultations and hospital in-patient stays

Respondents were asked (Q.32) if they had consulted their general practitioner (GP), consultant or a medical centre for their own health problems during the two weeks before interview (as used in the General Household Survey). Visiting the GP or medical centre can also be considered an indicator of one's illness behaviours (see e.g. Nathanson, 1980). Nearly one third of the sample (28.4%) reported they had been to the GP or a surgery at least once within the last two weeks. On average, the whole sample had paid 1.43 visits (with a standard deviation of 0.73) for their health problems.

Table 6-10. Number of visits to the GP's or surgeries within the last two weeks

		GP-visits:No of visits in the two weeks				Total
		1	2	3	4	
	working women	130 63.4%	47 22.9%	25 12.2%	3 1.5%	205 100.0%
	nonworking women	81 82.7%	10 10.2%	6 6.1%	1 1.0%	98 100.0%
Total		211 69.6%	57 18.8%	31 10.2%	4 1.3%	303 100.0%

A t-test revealed more visits by working women (see Table 6-10) (mean 1.5 for working women, and 1.2 for non-working women, t-value=3.20, p= .002). Recalling earlier evidence, working women also reported a significantly greater number of symptoms for the month prior to the interview (see Table 6-1). This appears to be in line with Nathanson's (1980: 463) finding that 'women with heavier role obligations will respond to perceived symptoms by visiting a physician, while fewer responsibilities will be associated with self-treatment at home'. In explaining why women with a larger number of role responsibilities use health services more often than other women when they do get ill use, Kane (1994:98) wrote, 'the explanation generally seems to be that they have fewer opportunities to restrict their activities, and so tend to go straight to a doctor for some intervention to cure them or reduce discomfort'.

Within the year prior to the interview, 95 (8.9 %) respondents in the whole sample (7.9 per cent of working women and 11.0 per cent of non-working women) (Chi-square=2.8, p=.094)

reported hospital inpatient stays (Q.33) for various medical reasons (including pregnancy)[1]. Of the overall 95 cases, the most frequently reported reasons for hospital inpatient stays were 'giving birth' (22.0 per cent of working women, 24.4 per cent of non-working women); 'abortion' (10.2 per cent of working women, 7.3 per cent of non-working women). The third highest percentages for the two groups were 'broken hand' (6.8 per cent among working women) and cases under the general term of 'gynecological problem'(12.2 per cent among non-working women). As we can see, the majority of cases concern women's reproductive life and or gynecological problems. Since abortion is illegal in Iran (except to save a mother's life), these cases are actually stillbirths and miscarriages. Overall, 347 (32.8 per cent) of respondents reported that they had had at least one abortion, stillbirth or miscarriage in their lives (32.5 per cent of working women, and 33.3 per cent of non-working women). A question on bereavement asked if the respondent had ever lost a child, including through miscarriage or stillbirth. Of the working respondents, 18.0 per cent, said 'yes' to this question, compared with 24.2 per cent of non-working respondents (Chi-square = 5.66, df=1, p= .017). In all, 14.5 per cent of working women and 17.5 per cent of non-working women referred to miscarriages among their lost children. This seems to be connected with the discussion on lower age at first marriage and first pregnancy and the consequent health risks for non-working mothers (see chapter 5). The age range of the lost children varied from one month to 30 years among the working women, and from one month to 32 years for the non-working women.

[1] There was only one pregnant woman among these. After excluding the pregnant woman, the number was 94 cases (9.2%)..

Acute illnesses

Respondents were asked whether they had cut down their normal activities within the two weeks before the interview, which was meant to reveal the presence of any acute sickness or health problem. A total of 361 (34.0 per cent) replied 'yes'. After excluding the pregnant respondents, there were 342 (33.6 per cent) who replied 'yes'. There was no statistically significant difference between the two sub-samples in this respect (Chi-square=2.30, df=1, p= .130). In total, 35.2 per cent of working respondents and 30.4 per cent of non-working respondents reported that they had restricted their activities within the two weeks before the interview. Thus in terms of acute sickness, the two groups of respondents broadly resemble each other.

Health state for her age

Respondents were asked to assess their own health considering their age. Here, more working women assessed their health as being 'good' (43.9 per cent) than housewives (37.2 per cent). In both cases, the majority rated their heath as 'fair', although more housewives said that their health for their age was excellent (8.5 per cent) than working women (4.5 per cent) and fewer housewives described it as 'poor' (3.7 per cent) than working women (5.4 per cent)(see Table 6-11). The pregnant respondents were also included in this analysis, since their being pregnant did not seem likely to affect their assessment of their general health for their age.

Table 6-11. Respondents' health for their age

	Excellent %	Good %	Fair %	Poor %	Total %
Working women	4.5	43.9	46.2	5.4	100.0
Non-working women	8.5	37.2	50.7	3.7	100.0
Total (N=1065)	5.8	41.7	47.7	4.8	100.0

A Pearson's Chi-square test revealed that the observed difference between the two groups was statistically significant (Chi-square value=11.34, df=3, p<.01). It seems that, all in all, working women *feel* in better health than non-working women. Thus is interesting, given that they reported a significantly larger number of symptoms for the last month. However, as explained by Blaxter (1990:36), 'normal health, even 'good health' can accommodate an 'ordinary' level of symptoms or complaints'. Having realised that, in terms of various health indicators used in this research, working women have not actually been shown to be in better health compared with non-working women, it is important and interesting to know that they subjectively feel better about their health in general.

Stein (1997:80) refers to the result of Blaxter's (1985) research to highlight the fact that 'absence of health problems was always related to a positive self assessment, but presence of problems did not necessarily relate to a negative self-assessment. People can feel that their health status is excellent or good even if they have a chronic illness, disability or disease'. She adds, 'this is reflected in the finding that physicians may not be the best judges of a person's health' (Stein, 1997:80). Bowling (1997) explains this in terms of the distinction between the medical concepts of *disease*, and subjective feelings and perceptions of *dis-ease*, often labeled as *illness* or *sickness* by lay people. Research has shown that some people can be diseased according to biochemical indicators, while not actually feeling sick or ill. She refers to 'high

blood pressure' as an example of such a problem, and 'chronic back pain' as instances when people can feel ill without any biochemical evidence of being diseased (Ibid.).

Health status within the last year

Another question on self-assessed health state (Q.21) focused on the last year. For this distribution, the pregnant women's data were excluded. The percentages for this table differ noticeably from the distribution for self-assessed health considering one's age (see Table 6-12).

Table 6-12. Respondents' self-rated health state within the last year

	Excellent %	Good %	Fair %	Poor %	Total %
Working women	5.3	45.9	41.8	6.9	100.0
Non-working women	6.7	44.0	43.4	5.8	100.0
Total (N=1022)	5.8	45.3	42.4	6.6	100.0

The largest proportion of working and non-working women still rated their health as 'fair', that is, 45.9 per cent and 44.0 per cent respectively. But at the extremes more housewives rated their health as excellent (6.7 per cent) than working women (5.3 per cent), and more working women reported poor health (6.9 per cent) than housewives (5.8 per cent). However the observed difference was not statistically significant (Chi-square = 1.84, df=3, p=.678)[2]. There is no significant difference between the sub-samples for this indicator of health (which concerns respondent's recent health state), in contrast with the indicator of 'health state considering her age' (seen in Table 6-11).

[2] Even with data from pregnant women included, the difference was not statistically significant (Chi-square 1.84, p=.607)

Health selection effect

A question (Q.7) was included in the questionnaire to see if there was any evidence that respondents' health status could have affected their chances of employment, i.e. to look at the issue of health selection (see e.g. Hibbard and Pope, 1993, Arber, 1997). Only 1.7 per cent of non-working mothers and 4.5 per cent of working mothers said that sometime in their life they had failed to get a job or had had to give up their job for health-related reasons, which included pregnancy as well as problems such as weakness, nerves, anxiety, fatigue, neck-arthritis, bad back, injury, thyroid problems, teeth deformity and heart problems. There is not much evidence to support the health selection hypothesis: only a negligible percentage of non-working mothers said that health related problems affected their working role and working women who reported health problems were working at the time. Health problems have not been a barrier to women's entering or continuing paid work.

Health risks due to paid work and housework

Respondents were asked (Q.53 and Q.66) whether they found that their paid work and housework affected their health and, if so, what health problems they associated with their work. For both paid and unpaid work, the three top categories of health problems referred to by respondents were back-ache (14.5 per cent from paid work, 25.3 per cent from housework), leg ache (10.8 per cent from paid work, 13.0 per cent from housework) and tiredness (9.5 per cent from paid work, 17.5 per cent from housework). It is interesting that these percentages were higher for housework than for paid work. However, the number of reported health problems associated with paid work was greater (46 items) than those associated with housework (32 items), i.e. there was more problems associated with paid work (reported by

women in paid work only) than for housework, but there were more complaints about housework, from both working and non-working women.

Summing up the results on physical health indicators, working and non-working women generally reported similar patterns of physical health state and status. The significant differences observed in a few cases such as 'symptoms for the last month' and 'number of GP-visits' seem to be due to the fact that the interviews took place in winter. Perhaps the larger number of GP-visits by working women also indicates a differential illness behaviour by women in paid work. It seems that working women, due to their more hectic lives, need to be more observant about the symptoms they experience and take action such as visiting the GP more often than non-working women, in order to deal with the problem before it is aggravated. Another significant difference related to self-rated health state considering respondent's age, which revealed that, compared with non-working women, working women feel themselves in better health, even though the two sub-samples resembled each other in terms of the majority of health indicators.

b- Mental Health

As discussed in chapter 4, the measurements I used to assess the mental dimension of respondents' health were the Goldberg (1972) GHQ for minor psychiatric disorders, and self-perceived psycho-social well-being or malaise.

Minor psychiatric disorders

The 12-item Goldberg General Health Questionnaire (Banks *et. al.* 1980) was used to detect minor psychiatric disorders. Using a Likert-style recoding method, as it has been suggested that this produces a wider and less skewed distribution of scores than the GHQ-method (Bank's *et. al.* 1980:190), I calculated the overall score for each respondent, based on the additive score of the 12 items (codes 0, 1, 2, or 3), which eventually generated a score ranging from 0 (indicating good mental health) to 36 (indicating poor mental health)(Cronbach's alpha = 0.86). The mean score for the whole sample was 12.5 (standard deviation = 5.5). The average GHQ score for the working mothers was 12.47 and for the non-working mothers 12.62 (t-value = -.41, p=.693). There is not a major difference between the two groups of women in terms of this indicator of mental health.

Malaise

The self-perceived psycho-social well-being or malaise-scale (Blaxter, 1991) was generated, based on an additive score of malaise symptoms ranging from 0 to 14 (see chapter 4 for more details). The higher the score, the higher the malaise level. The mean score for the whole sample was 3.9 (standard deviation=2.27). Table 6-13 shows the relative distribution of a recoded three-category frequency list of malaise.

Table 6-13. The three category 'malaise' for the two sub-samples

		Malaise score (range=0-14)			Total
		0-2	3-4	5+	
	working women	164 24.0%	306 44.8%	213 31.2%	683 100.0%
	nonworking women	95 29.1%	143 43.9%	88 27.0%	326 100.0%
Total		259 25.7%	449 44.5%	301 29.8%	1009 100.0%

The malaise scores of the two sub-samples do not show a significant difference (a mean score for working women of 3.97, standard deviation = 2.3, and 3.74 for non-working women, standard deviation = 2.2)(t-value =1.49, p=.138).

Since malaise and GHQ-scores concern similar dimension of health, we would expect them to be highly correlated. The Pearson's correlation coefficient of 0.47 ($p < .001$) substantiates this. As for both mental health indicators, the two sub-samples broadly resemble each other.

In conclusion to this section, neither physical nor mental health seem to be directly affected by women's working role in broad terms. As discussed earlier in the literature on work-health relationship, however, researchers have referred to different factors as mechanisms which could potentially influence this relationship. They take the paid working role to be either detrimental or beneficial for women's health through such mechanisms. Based on this research evidence, the theoretical model of this research includes a number of variables (Group-3 variables), namely life/social context variables, to study their effects on health. In

chapter 5 we examined the effects of socio-demographic factors as well as work-related factors on Group-3 variables. In the following sections, we look at the effects of three explanatory variable groups (Group 1 to 3) on health indicators. We shall see if the effects of such variables on health are as expected in the theoretical model.

Life/social context variables and health

In this section we look at the effects of Group-3 variables (life/social context variables) on Group-4 variables (health indicators) through category-D hypotheses (see the first section of this chapter). We examine each hypothesis by gradually looking at individual explanatory variables of Group-3 and health indicators.

Before moving on, it is important to explain how particular dependent variables for these bivariate analyses were selected. Since there are various indicators for physical and mental health in the survey (to cover different dimensions of health), the number of bivariate analyses needed for testing the hypotheses would be too large. Therefore, to avoid unnecessary complexity, I was selective in terms of the health indicators for the statistical analyses. From among all health indicators, I consider only three, which seem to be representative, as main dependent variables:

For *physical health*, two health indicators were selected; 'self-rated health for her age' which I consider subjectively indicates women's general health state; and 'long-standing illness' which I consider to be a more objective indication of health status. For mental health I will use GHQ. Other health indicators are omitted here, either because they overlap with the above

mentioned indicators (such as malaise for mental health, or symptoms one tends to suffer generally which seem to be affected by one's long-standing illness), or because they seem to be affected by temporary circumstances, such as the season of the year (winter aggravating the symptoms of the last month), or because some indicators are also measures for other variables (for example GP-visits can be an indicator of illness-behaviour). Therefore, I limited the analyses to the three dependent variables. Next, as mentioned earlier, I will begin looking at the specific hypotheses (category-D hypotheses) regarding the effects of Group-3 variables on health indicators by looking at the effect of self-esteem on health.

Self-esteem and health

Nathanson (1980) and others have referred to the positive effects of employment on health through higher self-esteem. Accordingly I expected women with higher self-esteem to score better on health (hypothesis d-1). The results of the bivariate analyses for this hypothesis are shown in Table 6-14.

Table 6-14. Self-esteem - health correlation results

The explanatory variable	**Dependent**	**Statistics used**	**Obtained value**	**Sig.**	**N**
Self-esteem	Health state for age	Spearman's correlation	0 .190	.000	1011
Self-esteem (3-categ.)	Long-standing illness	Pearson's Chi-square	6.12	.047	1011
	GHQ-score	Pearson's R	-0.33	.000	1011

As seen in the table, self-esteem is positively related to women's health state and negatively associated with GHQ-score. The higher the respondent's self-esteem, the better her self-rated

health, the less likely she is to report a long-standing illness, and the lower her level of minor psychiatric disorders. The reverse causation is also possible. That is, better health may increase a person's self-esteem. I examined the relationships separately for the two sub-samples of working and non-working women. I checked the significance of the self-esteem-health relationship, and there was no significant difference between the results for the sub-samples individually and for the whole sample.

Social support and health

It is assumed that broader social support will be associated with better health outcomes (hypothesis d-2). There are different dimensions to the concept of social support (as reviewed in chapters 3 and 4). However, I use the indicator which could be considered most closely related to the working role effect, women's socialising with friends (see Lee, 1998). As Fuller *et al.* (1993:254) states, 'employed women may receive social support from co-workers and supervisors and may escape the monotony and low social status of being housewives ... employment tends to be emotionally satisfying, providing both financial security and social resources'. I use the 'number of close friends' as an indicator of social support for this analysis (see Table 6-15).

Table 6-15. Social support and health relationship

The explanatory variable	Dependent	Statistics used	Obtained value	Sig.	N
Social support: No of close friends (categorical)	Health state for age	Pearson's Chi-square	6.05 (df=9)	.735	914
Social support: No of close friends (categorical)	Long-standing illness	Pearson's Chi-square	6.99 (df=3)	.072	914
No of close friends (interval)	GHQ-score	Pearson's R	-0.12	.000	902

Apparently, mental health is significantly affected by social support in terms of the dimension focused on here; that is, the larger the circle of friendship a woman enjoys, the better her mental health. This link is not significantly associated with either of the physical health outcomes. Having carried out the statistical tests separately for each of the sub-samples, however, it was revealed that long-standing illness and social support were significantly correlated (Chi-square 13.3, p= .004) for working women, but not for non-working women. The non-significance of the relationship for non-working women was not due to the smaller size (after multiplying the chi-square statistic by 2 to control for the size-effect, it was still statistically non-significant). This might be because working women suffering from long-standing illnesses can rely much more on social support of this kind (friends' support) since they have significantly more friends than non-working women (as seen earlier). Not surprisingly, for both sub-samples mental health was significantly affected by the number of close friends women had. More friends meant better mental health.

Stress and health

Stress is another explanatory variable assumed to have direct connections with women's mental health in particular. Waldron *et al.* (1998:218) refer to the 'Role strain hypothesis', and emphasise that, 'multiple roles result in role overload and role conflict, each contribute to increased stress and excessive demands on time, energy and psychological resources- resulting in poorer health'. Hypothesis d-3 concerns the effects of stress on health. The level of stress felt by the respondents was measured using the response set of question 80 which asked how much stress has affected respondent's health during the last month (with a score of 0 to 4, indicating no stress to high stress) (see Table 6-16).

Table 6-16. Work-stress relationship

		Stress-levels			
		low	medium	high	Total
	working women	331 47.9%	212 30.7%	148 21.4%	691 100.0%
	nonworking women	187 53.9%	93 26.8%	67 19.3%	347 100.0%
Total		518 49.9%	305 29.4%	215 20.7%	1038 100.0%

The mean stress-score for the working women sub-sample was 1.62 while for non-working women it was 1.51. However, the difference is not significant (t-value = 1.64, p= .101). The working role does not significantly affect women's stress. Table 6-17 displays the results of the analysis of the relationship between stress and health.

Table 6-17. The stress health relationship

The explanatory variables	Dependent	Statistics used	Obtained value	Sig.	N
Stress	Health state for age	Pearson's Chi-square	107.6 (df=12)	.000	1038
	Long-standing illness	Pearson's Chi-square	33.1	.000	1038
	GHQ-score	Pearson's R	0.54	.000	1027

As expected, stress has a strong and significant link with both physical and mental health indicators. The more stressed a person is, the more likely she is to report worse health physically and mentally and vice versa, in that long-standing illness can certainly be considered a cause of stress.

Satisfaction and health

Satisfaction is believed to have positive influences on women's health (Hypothesis d-4). Higher levels of satisfaction, which itself has multiple dimensions relating to the different potential roles one plays, are assumed to have a positive effect on health. We examine four different dimensions of satisfaction in association with each of the 3 health measures (see Table 6-18).

Table 6-18. Different dimensions of satisfaction in relation to health

The explanatory variables	Dependent	Statistics used	Obtained value	Sig.	N
Job satisfaction	Health state for age	Pearson's correlation	28.2	.001	672
	Long-standing illness	Pearson's Chi-square	0.64 (df=3)	.888	672
	GHQ-score	Spearman's R	-0.20	.000	655
Satisfaction with housewifery	Health state for age	Pearson's Chi-square	51.27 (df=9)	.000	1049
	Long-standing illness	Pearson's Chi-square	6.95 (df=3)	.073	1049
	GHQ-score	Spearman's R	-0.19	.000	1029
Marital satisfaction	Health state for age	Pearson's Chi-square	84.72 (df=12)	.000	1038
	Long-standing illness	Pearson's Chi-square	18.33 (df=4)	.001	1038
	GHQ-score	Spearman's R	-0.31	.000	1023
General life satisfaction	Health state for age	Pearson's Chi-square	95.88 (df=9)	.000	1042
	Long-standing illness	Pearson's Chi-square	15.10 (df=3)	.002	1042
	GHQ-score	Spearman's R	-0.39	.000	1029

As highlighted also in the literature on job-satisfaction and health (see e.g. Emslie, *et al.*, 1999), job-related satisfaction (for the working women sub-sample) is significantly correlated with women's physical health state and mental well-being. However it is seemingly not associated with whether or not a woman has a long-standing illness. Satisfaction with housewifery in the whole sample is significantly correlated with both physical health and mental health (with the exception of long-standing illness). In this case, consideration of the correlations for the two sub-groups separately revealed that the relationship was significant for the working women sub-sample (Chi-square = 8.8, p= .031), but not for the non-working women sub-sample (even after accounting for the difference in sample sizes). Therefore, there is apparently not enough evidence to assert that for non-working women suffering from a

long-standing illness affects their satisfaction with their housewifery role. For working women, on the contrary, it was found that those who were more satisfied with their housewifery role were more likely to suffer from a long-standing illness. This probably reflects working women's overload. Perhaps for working women who tend to fulfill their housewifery role alongside their working role, the double burden of the two roles has resulted in a higher likelihood of chronic illnesses. Marital satisfaction showed a highly significant relationship with all three indicators of health. The higher the satisfaction, the better the women's health and vice versa. The same was true for the indicator of general life satisfaction, even after accounting for the sub-samples separately. That is, by and large, all satisfaction measures are strongly associated with the health variables, as expected.

Role-conflict and health

We move on to examine the relationship between the indicator of role-conflict and health. The literature stresses the significance of job-family conflicts for women's health. It is argued that combining domestic and work roles may result in role conflict or role overload which may, as a consequence, adversely affect women's health (Burke and Weir, 1976; Hibbard and Pope, 1991). Hypothesis d-5 expected the health of working women to worsen in direct relationship to higher levels of role-conflict.

Table 6-19. The role-conflict and health relationship

The explanatory variables	Dependent	Statistics used	Obtained value	Sig.	N
Role conflict (higher score = higher conflict)	Health state for age	Pearson's Correlation	52.73 (df=9)	.000	665
	Long-standing illness	Pearson's Chi-square	8.14 (df=3)	.043	665
	GHQ-score	Spearman's R	0.23	.000	647

As we can see in Table 6-19, the results confirm a strong relationship between all health measures and role-conflict. Greater role-conflict is associated with worse health. Generally, we can see that working under the circumstances of high role conflict seems to be associated with both mental and physical morbidity.

Health-behaviour and health

Another area of interest is women's health behaviour and its effect on their health status. This variable (Group-3) is assumed to be affected by women's working life as well as their socio-demographic background. I generated a scale of 'health behaviour' by adding up the scores from six items (Q.36) which inquired about different issues concerning women's health such as taking regular or irregular health-oriented actions (in order to maintain or promote personal health) i.e. visiting a doctor for gynecological check-ups, practicing contraception to avoid unplanned pregnancies, as well as practicing physical activities/sports on a regular or irregular basis (scale, Cronbach alpha = 0.70). This collection of items perhaps reminds us of the definition of health behaviour referred to by Bowling (1997:29) as 'action taken to maintain health and prevent ill-health'. The responses to questions were coded and the scores summed (range = 6 to 18, i.e. least amount of healthy behaviour to the best assumed behaviour). There

was also a question on smoking. Hypothesis d-6 proposes that women who adopt healthier behaviours are more likely to be in better health (see Table 6-20).

Table 6-20. Health behaviour and smoking in connection with health

The explanatory variables	**Dependent**	**Statistics used**	**Obtained value**	**Sig.**	**N**
Health Behaviour (recoded into 3 categories)	Health state for age	Pearson's correlation	26.7 (df=6)	.000	851
Health Behaviour (recoded into 3 categories)	Long-standing illness	Pearson's Chi-square	3.33 (df=2)	.189	851
Health Behaviour (interval)	GHQ-score	Spearman's R	-.07	.032	834
Smoking (yes/no)	Health state for age	Pearson's Chi-square	17.27 (df=3)	.001	1065
	Long-standing illness	Pearson's Chi-square	7.56 (df=1)	.006	1056
	GHQ-score	T-test	1.37	.171	1036

According to the results of the analyses shown in Table 6-20, the healthy behaviour indicator was significantly associated with both physical and mental health, with the exception of the indicator for long-standing illness. That is, for the whole sample, the greater the behaviour indicator, the better the health status. However, looking at this relationship for the sub-samples separately, it was revealed that in the case of non-working women, none of the associations are significant. It is only for the working women sub-sample that there is evidence of significant relationships between reporting healthy behaviours and better health for the indicators of health for age and GHQ. That is, it is seemingly only for working women (who are also of significantly higher educational levels than non-working women) that 'health

state for age' and mental health state *are* positively affected by the health-oriented behaviours as defined here. This is perhaps affected by their educational levels as well as because working women might be more sensitive and concerned about getting ill (which could affect their paid work) (see Kane, 1994) since the scale of health behaviours looks at preventive actions for maintaining health.

One key aspect of health behaviour is women's smoking. In our sample, only 6.2 per cent of women reported currently smoking cigarettes (6.5 per cent among working, and 5.6 per cent among non-working women). The results of the analysis concerning cigarette-smoking (whether or not the respondent smokes) revealed statistically significant associations between the indicators of physical health and smoking (those who were smokers had worse physical health), but surprisingly not between mental health and smoking for the whole sample. Looking at the sub-groups individually, however it was revealed that none of the correlations were significant for the non-working women's sub-sample, but the first two health indicators (of physical health) were significantly correlated with whether a woman smokes only for the working women's sub-sample. Perhaps working women's smoking habits are affected by another factor specific to their lives, which so distinctively established such a link between their physical health and smoking. The reason why smoking affects women in paid work and in unpaid work differently and whether it has something to do with paid work (such as job-related stress, which is not measured in this research) requires further investigation. It is therefore likely that job-related stress, which probably inclines women (as well as men) towards smoking for relief, has contributed to this result.

Martikainen (1995) refers to the 'convergence hypothesis' which assumes that women will undergo the risks of work-related stress as they increasingly enter the 'male world' of employment. Women will gradually adopt 'male life styles' (such as smoking and alcohol consumption) and will therefore suffer the disadvantages typical of men. However, regarding the particular religious social context of Iranian society, which prohibits alcohol consumption, such expectations are unlikely to be found with alcohol consumption. Also, there is no significant difference between working and non-working women in terms of whether or not they smoke (Chi-square = .29, p = .590) and a very small percentage of women smoke.

Before moving on to the next explanatory variable, I need to refer to a further hypothesis concerning health-behaviour, which concerns the effects of education on health-related behaviour (hypothesis c-2, which suggests that more educated women are more likely to exhibit a healthy behaviour than less educated women). This was associated with the idea that, if working women's health behaviour is better, it may be because they are more highly educated. A Pearson's correlation coefficient of 0.29 ($p<.001$) revealed a statistically significant and positive relationship between educational level and adoption of healthy behaviours. There was a statistically significant difference between the two means (for working and non-working women) in terms of their score on health behaviour, with working women showing a higher mean-score (11.64 for working women, compared with 11.21 for non-working women, with a scale ranging from 6 to 18)(t-value for equal variances =2.11, p=.035).

Equitable division of household responsibilities and health

Hypothesis d-7 concerned the possible links between a more equitable division of household responsibilities and women's health. It is assumed in the theoretical model that women who enjoy their husbands' participation in household responsibilities may have better health status (either due to practical help a woman receives, decreased work-load and demand on her shoulders, and/or to the contentment she gains from the supportive attitude of her husband). Earlier, in chapter 5, we had evidence that in working women's households husbands shared more housework responsibilities than in non-working women's households. Here, we look for evidence on whether or not this greater share of housework has a significant association with wives' health. In order to examine this hypothesis, I used the scale of housework division of responsibilities (based on the sum of the coded responses to question 56 with overall range of 8 to 40, see appendix-A). A higher score on this scale meant higher levels of husbands' help with housework responsibilities. Another scale involved a combination of the overall score of housework division of responsibilities and the scale of childcare division of responsibilities (based on sum of the coded answers to question 58) (see Table 6-21).

Table 6-21. The domestic division of housework, child-care and health

The explanatory variables	Dependent	Statistics used	Obtained value	Sig.	N
Housework sharing (categorical)[3]	Health state for age	Pearson's Chi-square	23.6 (df=6)	.001	897
	Long-standing illness	Pearson's Chi-square	9.32 (df=2)	.009	897
Housework sharing (interval)	GHQ-score	Pearson's R	-.16	.000	877
Both housework and child-care sharing (categorical)	Health state for age	Pearson's Chi-square	16.40 (df=9)	.059	459[4]
	Long-standing illness	Pearson's Chi-square	9.30 (df=3)	.026	459
Housework and child-care sharing (interval)	GHQ-score	Pearson's R	-.18	.000	447

As seen in Table 6-21, there are statistically significant relationships between both mental and physical health and sharing of housework responsibilities. That is, the more the husband helps with housework, the better the woman's health is likely to be. At first, looking at the results for the two sub-samples separately, the physical health indicators were not significantly associated with husband's level of sharing housework for the non-working women's sub-sample. However, when the effect of size was explored (by multiplying the chi-square value by 2), it emerged that the pattern was the same for non-working women and working women, that is with a larger sample size we would have had the same significant relationships for the non-working women's sub-sample.

[3] In order to carry out Chi-square tests, I recoded the scale scores into 3 categories of low, medium and high levels of husbands' share of responsibilities in housework.

[4] The N is lower for this variable because of the greater number of non-applicable cases for this scale, since not all respondents had children of school-age. Therefore the number of valid cases is lower for the scale on child-care responsibilities.

As for the two scales of housework and child-care summed together, we see that the relationships are significant with the exception of general health for her age. That is, a woman's health state considering her age was not affected by the amount of husband's help, when both housework and child-care were considered. This probably is affected by particular child-care items in the scale used here. For example items such as who is responsible for a child's entertainment, or studying perhaps do not so much affect a woman's physical health as some housework responsibilities do.

Women's mental health is however affected significantly by the overall housework and child-care scale, so that for both working and non-working women, the fact that the husband helps more with both of these responsibilities improves their health. Looking at the sub-sample results separately, it was shown that for the non-working sub-sample, the likelihood of suffering from a chronic illness was not significantly affected by the degree to which husband shared housework and child-care responsibilities. However, this was due to a size-effect; with a bigger sample size, the relationship would have been found significant for this sub-sample as well.

So far in this section we have looked at the hypotheses concerning the effects of social/life context variables on health. In most cases, expected relationships are found for the whole sample as well as independently for each sub-sample. We saw, for example, that a woman's self-esteem affects her mental and physical health positively; a larger number of close friends (as an indicator of social support) also improves a woman's mental health. Stress, on the other hand, affects both women's mental and physical health negatively, not surprisingly. For the

working women's sub-sample, satisfaction with paid work improved physical ('health state for age') and mental health. For the whole sample, this was the case also with respect to the role of housewifery. For these women, satisfaction with their marital relationship and also general life satisfaction significantly favoured both their physical and mental health. Role conflict for working women shows a negative effect on both mental and physical health. Health behaviours oriented towards maintaining one's health are significantly associated with better health (with the exception of the indicator of long-standing illness). Husbands' greater help with housework as well as with child-care responsibilities seems to be positively associated with women's health (with the exception of 'health state for age' in the case of combined housework and childcare responsibilities, for which there is not enough evidence).

Now, having reviewed the relationships between Group-3 variables (life/social context variables), which are sometimes referred to as 'mechanisms' in the (indirect) work-health relationship and Group-4 (health-indicators), we look at relationships between other groups of variables and health. It is assumed that health could be affected directly and indirectly by various variables. Although our theoretical model and the hypotheses driving from it do not cover all possible links in this respect, the following sections concern some of the direct associations between other groups of variables (socio-demographic and background variables as well as working characteristics) and health according to the theoretical model of this research.

Relationships between selected background variables and health

(Category-E hypotheses: relationships between Group-1 and Group-4 variables)

This group of relationships deals with the impact of specific socio-demographic characteristics on women's health. The effects of some of these variables on the Group-3 variables (life/social context variables) have already been discussed in chapter 5. Here, we look first at direct links between these variables and the health indicators.

Age and health

Since age is obviously often associated with (physical) health, hypothesis e-1 proposes that mothers of younger age are more likely to be in better health than older ones.

Table 6-22. Age and health relationship

The explanatory variables	**Dependent**	**Statistics used**	**Obtained value**	**Sig.**	**N**
Age (categorical)	Health state for age	Pearson's Chi-square	35.8 (df=9)	.000	1052
	Long-standing illness	Pearson's Chi-square	24.2 (df=3)	.000	1052
Age (interval)	GHQ-score	Pearson's R	-.02	.610	1025

Clearly physical health is strongly affected by age, but mental health is not. Older age seems to affect mental health less directly and there may be many other life/social context factors involved, such as the amount of stress and/or one's socio-economic status. Looking at the sub-samples individually, however, at first health for age was not significantly associated with age for the non-working women's sub-group. This was due to the smaller size of the sample, and significance would be obtained when the Chi-square value was doubled to account for size.

Therefore, we can assume that the results would hold for both sub-samples in the case of balanced sizes.

The carer role and health

Another variable listed among background variables (Group-1) assumed to affect women's health is whether or not a woman has a carer role besides her other roles. Referring to women's carer role, Gove and Hughes (1979:144) believe that, 'it is an excess of role demands that partially accounts for why women have higher rates of physical illness'. Having the additional role of a care-taker is assumed to be associated with worse health (Hypothesis e-2).

Among the respondents, 4.6 per cent said that they were 'permanently' caring for someone, 8.4 per cent reported to be caring for someone 'most of the time' and 16.5 per cent 'only at times'. I recoded the original values to generate a dichotomy variable (for carrying out a t-test, see Table 6-23). I took those who said they were caring permanently and most of the time as 'care-takers' together, and the rest as 'non-care-takers'.

Table 6-23. The carer role and health relationship

The explanatory variables	**Dependent**	**Statistics used**	**Obtained value**	**Sig.**	**N**
Care-taking (categorical)	Health state for age	Pearson's Chi-square	22.9 (df=9)	.006	1061
	Long-standing illness	Pearson's Chi-square	28.3 (df=3)	.000	1061
(whether or not a carer) (yes/no)	GHQ-score	t-test	1.67(for equal variances)	.096	1035

According to the results shown in Table 6-23, physical health is affected significantly by the role of carer, but the same is not true of mental health for the whole sample. It seems that the burden of caring affects women more physically than mentally. Looking at the sub-samples separately, different results emerge. For working women, being in a carer role is not associated with the variable 'health state for age', but is significantly associated with the other two. For non-working women, however, the carer role is associated with 'health for age' but not with the other two. For the indicator of long-standing illness, however, it was revealed that the non-significance was due to the smaller size and therefore with a bigger sub-sample size, we would have statistical significance for the relationship for non-working women too. However, the non-significance of the relationship for GHQ and whether or not a woman has a carer role was not due to the difference in sizes, that is, it seems that non-working women are not mentally affected by being a carer, but working women are. This is likely to be due to the fact that working women have a greater work-load due to having multiple responsibilities.

Women's small children and health

The presence of under-school age children (i.e. children under 7 years old in Iran) (hypothesis e-3) was assumed to affect women's health. According to Table 6-24, only one of the physical health indicators (long-standing illness) has a statistically significant relationship with whether or not a woman has small children at home. It seems that this is an age-effect (as younger mothers are in better physical health than older ones) rather than an effect of the higher stress or greater work-load associated with child-care.

Table 6-24. The relationship between whether or not a woman has underschool-age children and health

The explanatory variables	**Dependent**	**Analyses used**	**Obtained value**	**Sig.**	**N**
The presence of small child (yes/no)	Health state for age	Pearson's Chi-square	7.44 (df=3)	.059	1065
	Long-standing illness	Pearson's Chi-square	5.30 (df=1)	.021	1065
	GHQ-score	t-test	-.76	.450	1036

Socio-economic status (SES) and health

Hypothesis e-4 concerns the association of SES and health status This concept has been measured in various ways. Apart from occupational class as an indicator for SES, which is discussed later in this chapter, we look here at 'car ownership' and 'housing tenure' which are commonly used indicators for socio-economic status. Their individual influences on health status are reviewed here and their combined effect will be discussed later in the multivariate analyses. For the variable 'housing tenure', I generated a new variable based on the responses to Q. 47 (see appendix-A) with one value covering those who owned a house or were living in a house owned by their parents (in social terms, meaning still owned by the family) and the other value covering all others who were tenants in one way or another and therefore did not own a home.

Table 6-25. Socio-economic status (indicators) and health

The explanatory variables	Dependent	Statistics used	Obtained value	Sig.	N
Car ownership	Health state for age	Pearson's Chi-square	5.42 (df=3)	.14	1048
	Long-standing illness	Pearson's Chi-square	.152 (df=1)	.696	1048
	GHQ-score	t-test	-.1.41	.158	1016
Housing tenure (4 categories)*	Health state for age	Pearson's Chi-square	14.30 df=9	.112	1042
	Long-standing illness	Pearson's Chi-square	3.38 (df=3)	.337	1042
(2 categ.)	GHQ-score	t-test	-2.10	.037	1027

* Four categories as the response choices to Q.47.

According to the statistics shown in Table 6-25, car-ownership shows no significant association with health status for the whole sample or for the sub-samples individually. It was only housing tenure which showed any statistically significant difference in health in terms of GHQ-score, with those not owning their home reporting worse mental health. Looking at the sub-groups individually, there was no evidence of any of the relationships, even for GHQ, being statistically significant. Only for the two sub-samples together did a statistically significant pattern emerge.

As another indicator of socio-economic status, we can look at the responses to question 86 (see appendix-A) on how easily one can make ends meet in the respondent's household. There was a statistically significant difference in terms of health outcomes between those who said they could make financial ends meet considering their current financial situation, and those who believed they could not (see Table 6-26). Those who said it was easy or almost easy, reported significantly better health status. Looking at the results for the sub-samples individually revealed the same pattern.

Table 6-26. Making ends meet and health

The explanatory variables	Dependent	Statistics Used	Obtained value	Sig.	N
Make ends meet (4 categories)	Health state for age	Pearson's Chi-square	46.83 (df=9)	.000	1034
	Long-standing illness	Pearson's Chi-square	12.25 (df=3)	.007	1034
(2-categories) (easy/difficult)	GHQ-score	t-test	-6.37 (for unequal variances)	.000	1020

Another indicator of the households' socio-economic status is the ratio of household members to the number of bedrooms in the place they live. The mean ratio observed was 1.9 which would mean roughly four people for two bedrooms. As the result of the analyses show in Table 6-27, there are significant differences in terms of physical and mental health for those with higher ratios and lower ones (except in the case of long-standing illness). The households with higher ratios had worse mental and physical health.

Table 6-27. Statistics on 'ratio of household size to bedrooms' and health.

The explanatory variables	Dependent	Statistics Used	Obtained value	Sig.	N
Ratio of household size to bedroom (3-categ.)*	Health state for age	Pearson's Chi-square	24.81 (df=6)	.000	1025
(3-categ.)	Long-standing illness	Pearson's Chi-square	5.81 (df=2)	.055	1025
(interval)	GHQ-score	Pearson's R	0.10	.002	1000

* The scores were recoded into three categories of low, medium and high. For GHQ, however, the scale itself with an interval level of measurement is used.

However, looking at sub-samples individually, there was no significant association for any of the health indicators for the non-working women. It was the case only for the working

women's sub-sample that the three health indicators were all significantly associated with the variable of the number of household-members to bedroom ratio. That is, better off households among working women showed distinctly better health when they reported better ratios (lower ratios). This pattern was not observed for the non-working women's sub-sample.

Household monthly expenses was taken as another indicator of the household's socio-economic status. This variable did not show any significant relationship with any of the health indicators (see Table 6-28) for the whole sample, or for either of the sub-samples. Seemingly, the level of household expenses is not associated with women's health.

Table 6-28. Household monthly expenses and health

The explanatory variables	**Dependent**	**Statistics used**	**Obtained value**	**Sig.**	**N**
Household expenses (3-categ.)	Health state for age	Pearson's Chi-square	3.1 df=6	.801	912
	Long-standing illness	Pearson's Chi-square	4.10 df=2	.129	912
(interval)	GHQ-score	Pearson's R	-.002	.956	856

Occupational class is used commonly as an indicator of socio-economic status, which is assumed to affect health. Regarding the whole sample, only 'health state for her age' (see Table 6-29) was significantly associated with husband's occupational class, in that women with husbands of higher classes reported better health.

Table 6-29. Husband's occupational class and health

The explanatory variables	Dependent	Statistics used	Obtained value	Sig.	N
Occupational class (Husband's) (3 categ.)[5]	Health state for age	Pearson's Chi-square	18.3 (df=6)	.006	871
	Long-standing illness	Pearson's Chi-square	5.10 (df=2)	.080	871
(9-categories)	GHQ-score	Pearson's R	.031	.370	855

Among the working women sub-sample, the first physical health indicator was significantly associated with occupational class, i.e. those from higher classes were in better health in terms of health state for respondent's age, but not for the other two indicators. In the case of non-working women, the first health indicator was not significant, because of the smaller size, and with doubling the Chi-square it would have been significant as for working women. The middle health indicator, that is, the presence of long-standing illness was statistically significantly associated with husband's occupational class for the non-working women's sub-sample although not for the working women's sub-sample. That is, among housewives, those from higher occupational classes (classified by husbands' class) were less likely to report suffering from long-standing illnesses. This kind of affluence effect is not, however, found in the case of working women, which is surprising. This might be because working women's husband's occupational class is overshadowed by another factor, such as their own occupational class (see multivariate analyses, chapter 7).

In studying the effects of material circumstances on health, Arber (1990:38) distinguishes between *household* variables and *individual-level* variables, and reminds us that, 'for a married woman there may be some direct effect of her own paid employment on her health,

but the major effect of material conditions is likely to be better captured by a household based measure'. She refers to a man's occupational class, which 'can be used as a surrogate for both the material conditions extant in the household (a household-level variable) and the direct effects of the nature of paid employment on his health (an individual level variable)' (Ibid.:38). For women, she reminds us, 'it is necessary to theorise and measure the effects of a woman's material circumstances (household variables) separately from any effects of her own employment status and the nature of her own occupation (individual level variables)' (Arber, 1990:38). She believes that the assumption that a man's occupational class measures both these types of material effects may no longer be appropriate because of the changes in social circumstances since the 1950's [in Britain] and since, 'for the two thirds of married men with working wives, it is likely that their wives' labour market position will influence the material circumstances of the household' (Arber, 1990:38).

Summing up the results of the analyses for category-E hypotheses which looked at the effects of group-1 variables (i.e. socio-demographic factors) on health, we found that a woman's age and whether she has a carer role alongside her other roles significantly affects her physical health. Those with small (under-school-age children) are significantly more likely to be in better health only in terms of likelihood of long-standing illness. Among different indicators of socio-economic-status applied individually here such as car ownership, housing tenure and a few others, few were associated with women's health; for example, only whether the respondent's household can easily make ends meet was significantly associated with all three health indicators. Ratio of household-size to bedrooms was also associated with two of the

[5] Recoded as: Classes 1 and 2=1(high class), classes 3-5=2 (middle class), and classes 6-9=3 (low class).

health indicators, and housing tenure showed a statistically significant association only with mental health. For the commonly used indicator of husband's occupational class the relationship was also significant for only one of the indicators of health, i.e. 'health state for her age'. The next section concerns the effects of work and work-related variables on health.

Relationships between work-characteristics and health

In this section we look at the Category-F hypotheses concerning the relationships between the other two groups of variables in the theoretical model i.e. Group-2 and Group-4 variables, concerning a number of work-related variables which could affect health.

The two hypotheses in Category F concern the influences of women's psycho-social and physical working conditions on their health.

Hypothesis f-1 proposes that women with better perceived psycho-social working conditions are in better health. Psycho-social work conditions were examined through a series of items (Q.51 for paid work, and Q.64 for unpaid work/housework), the responses from which were summed to generate two overall scale-scores for each respondent (see Table 6-30).

Table 6-30. The relationship between women's psycho-social job-conditions (paid work) and health

The explanatory variables	**Dependent**	**Statistics used**	**Obtained value**	**Sig.**	**N**
Psycho-social job-conditions scale(recoded 3 categ.)	Health state for age	Pearson's Chi-square	35.1 (df=6)	.000	646
	Long-standing illness	Pearson's Chi-square	5.1 (df=2)	.078	646
Scale-scores (interval)	GHQ-score	Pearson's R	-.27	.000	631

As shown in Table 6-30, there are statistically significant health differences between working women with good and poor perceived psycho-social job-conditions. This is true for mental health as well as for physical health, excluding long-standing illness. The better the respondent perceives her psycho-social job-conditions to be, the lower (better) her GHQ-score is. There are chances for inverse causation too, such that better mental health may lead women to perceive their psycho-social job-conditions to be better. Equally, we can also expect that being satisfied and happy about the psycho-social conditions under which work is performed can act as a buffer against the stresses usually associated with a busy working life which could result in psychological distress. Lee (1998:102) believes that 'it is certainly not the case that more roles automatically means more stress'. It is not surprising that long-standing illness has no significant association with this variable since it concerns psycho-social and not environmental/physical aspects of work.

Since the concept of work in this survey covers also unpaid work, in Table 6-31 we see the results of the psycho-social unpaid work conditions on health.

Table 6-31. The psycho-social housework conditions and health

The explanatory variables	**Dependent**	**Analyses used**	**Obtained value**	**Sig.**	**N**
Psycho-social housework-conditions (scale recoded into 3 categ. of poor, medium, good conditions)	Health state for age	Pearson's Chi-square	50.82 df=6	.000	989
	Long-standing illness	Pearson's Chi-square	19.90 df=2	.000	989
Scale-scores (interval)	GHQ-score	Pearson's R	-.33	.000	975

As seen in Table 6-31, psycho-social conditions of unpaid work are also highly associated with all health indicators, i.e. both women's mental health and physical health are significantly affected by their perceived psycho-social working conditions in the home. Those who experience and perceive better working conditions reported better physical health status and fewer psychological disorders. Looking at the sub-samples of working and non-working women individually, the observed patterns and their significance are the same as for the whole sample.

Hypothesis f-2 concerns the effect of physical (environmental) job-conditions on women's health. Here again a similar pattern emerges. First, looking at paid work conditions; women who perceive better physical job-conditions are in better mental, as well as physical, health (see Table 6-32).

Table 6-32. Physical job-conditions and health

The explanatory variables	**Dependent**	**Statistics used**	**Obtained value**	**Sig.**	**N**
Physical job-conditions scale (recoded 3 categ.)	Health state for age	Pearson's Chi-square	34.96 (df=6)	.000	634
	Long-standing illness	Pearson's Chi-square	8.72 (df=2)	.013	634
Scale-scores	GHQ-score	Pearson's R	-.26	.000	621

As expected, working in better environmental conditions in terms of light, safety, temperature, and so on may significantly improve women's health.

Here, we also look at the physical conditions of *unpaid* work in the home and its effects on health.

Table 6-33. Physical conditions of housework and health

The explanatory variables	Dependent	Statistics used	Obtained value	Sig.	N
Physical housework-conditions scale (recoded into 3 categ.)	Health state for age	Pearson's Chi-square	37.65 df=6	.000	972
	Long-standing illness	Pearson's Chi-square	7.31 df=2	.026	972
Scale-scores	GHQ-score	Pearson's R	-.25	.000	958

As seen in Table 6-33, women's mental and physical health are also significantly affected by their physical unpaid work conditions. These conditions, which also reflect women's household material resources (because the question actually refers to their accommodation circumstances), are significantly associated with women's health. The better the conditions, materially and environmentally, the better their health. As for the two sub-samples individually, the association of physical unpaid work-conditions with the indicator of long-standing illness was not significant. For non-working women, health state for age was at first not significantly associated with this independent variable of physical housework conditions. However, by correcting for the effect of size, it was revealed that with a similar size as the working women's sub-sample the same significant pattern would exist.

Summing up the results concerning category-F hypotheses which concerned the effects of women's working conditions on their health, we saw that, with respect to women's *paid* work, both physical and mental health are significantly affected by both environmental and psycho-social work conditions (with the exception of long-standing illness in the case of psycho-social job-conditions). For women's unpaid work, the same pattern emerged i.e. better

conditions in terms of environmental physical conditions and psycho-social conditions were associated with better health both mentally and physically for women as a whole.

Generally, among physical health indicators the prevalence of long-standing illness seems to show less significant associations with many explanatory life/social context variables. This health indicator is better explained, not surprisingly, by socio-demographic variables such as age. This is perhaps because of a strong age effect and its more direct relationship to one's *physical* health-status. In Arber's (1990:43) research too, 'health status [using limiting long-standing illness] is strongly associated with age, but the association for health state [using restricted activity due to illness] is much weaker'. The multivariate analyses presented in chapter 7 will help to control for the age-effect on long-standing illness in connection with other explanatory variables. The mental health indicator (GHQ) was, on the other hand, significantly associated with many life/social context variables such as self-esteem, social support, stress and such like as clearly expected.

In this chapter and the previous one (chapter 5) we reviewed the bivariate associations between sets of factors and variables according to the theoretical model of the thesis. Although interesting information on the mutual links and associations for a number of variables have emerged, for a better understanding of multi-faceted interaction of relevant factors we need to apply multivariate analyses. This will be discussed in chapter 7.

Chapter 7

What affects women's health in Tehran

Explaining variations in women's health

This chapter explores the relative importance of a range of socio-economic and demographic characteristics, work-related variables as well as social context variables in explaining variations in women's physical and mental health as indicated in the theoretical model of this research.

The specific issues to be addressed, according to the research objectives, are whether paid and unpaid work have any substantial effects on women's health. Special attention will be paid to different working characteristics and conditions involved when other relevant factors are controlled for, and the extent to which the presumed influential explanatory variables may have positive or negative empirical significance and/or can explain the variations in women's health in Tehran.

The results of bivariate analyses in chapters 5 and 6 revealed that, in terms of the majority of the health indicators, there were no statistically significant differences between the two main sub-samples, working and non-working women. However, there was evidence of an association between paid work and social context variables (Group-3 variables), which in turn were also significantly associated with the health indicators. Looking at the differences among working women themselves, in terms of job-characteristics, it was evident that the effects of

paid work on women's health were different for women with occupations in different social classes.

To obtain a deeper insight into these relationships, multiple linear regression and logistic regression have been employed. These techniques enable us to analyse the relationships between a number of independent and dependent variables while the direct influence of each explanatory factor (such as working role) upon the dependent variable (a health measurement) is assessed individually, as every independent variable is simultaneously controlled for. Both logistic and linear regressions can be used with nominal and interval explanatory variables though, as Grim and Yarnold (1995) describe, logistic regression is used when the dependent variable is dichotomous.

The dependent and explanatory variables

The main dependent variables are selected indicators of physical health, namely; self-rated 'health for her age', 'health within the last year', symptoms suffered within the last month, and those the respondent tends to suffer from generally, presence of a long-standing illness, limiting long-standing illness and acute illness. The indicators of mental health are the General Health Questionnaire (GHQ) and malaise.

Three main groups of explanatory variables comprise the theoretical model of this study. The first group is the background socio-demographic factors (Group 1), the second concerns women's work and work conditions (Group 2), and the third is the group of life/social context variables (Group 3) expected to be affected by group 1 and group 2 variables, and themselves to influence health. Hierarchical regression, namely, a series of analyses using the same

dependent variable, was used (see Licht, 1995). In hierarchical regression, the order of entry of explanatory variables is determined by the researcher and in this case is guided by the theoretical model. Since the working/non-working variable is of particular theoretical importance and the focus of this analysis, I included it throughout all analyses so that its relative importance, after controlling for other relevant factors and variables, could be observed.

Before moving to the results of the regression analyses, it is crucial to refer to the modifications made to the data before the multivariate analyses were carried out. To control for the effects of women's pregnancy on the health outcome variables, pregnancy at the time of the interview (Q.4) was included and treated like other explanatory variables, and wherever the variable did not show a significant effect on the dependent variable it was excluded.

To avoid losing data due to missing cases on particular variables, a policy of the replacement of the missing values with the median value (for interval level variables) was adopted. However, since the median value may not reflect the characteristics of the cases with missing values, the missing values of each variable were also entered into the equation in the form of a recoded dummy variable (with 1 for missing, and 0 for the remaining values) along with the original variable so that the effect of the missing cases would be taken account of properly. In the case of categorical variables, cases with missing values were included as an additional category.

For interval-level variables exclusive to working women, where the non-working respondents received the not-applicable code (NA), to avoid excluding the non-working respondents, the NA-values were recoded using median values. With the inclusion of the variable 'working/non-working' into the regression equation (with value 0 for non-working women and 1 for working women) the non-working sub-sample would thus be compared with working women with the median values for the interval-level variables exclusive to working women.

Mental health and its explanatory factors

GHQ

The dependent variable for measuring women's psychological distress, i.e. General Health Questionnaire (GHQ) scores (based on the Likert-type scoring method), is a 'scale with higher scores indicative of increasingly greater distress' (Fuhrer *et al.*, 1999:81). Due to its interval level of measurement, linear multiple regression analysis was used. Using the method 'enter' in SPSS - which forces a number of explanatory variables into the equation regardless of their statistical significance, the three groups of explanatory variables of the theoretical model, that is socio-demographic variables (Group-1), work and work related variables (Group-2) and life/social context variables (Group-3), were entered into the regression equation progressively and cumulatively. As mentioned earlier, the 'working/non-working' variable was included throughout so that the variations to its B-coefficient could be monitored as other explanatory variables were gradually added into the equation.

After gradually entering the explanatory variables, and monitoring the changes to the B-coefficients following the entrance of each new variable, those variables which showed statistically significant effects on GHQ were kept in the final version of the regression equation. During this procedure some of the explanatory variables such as age, psycho-social job-conditions and socio-economic status were dropped because they did not provide statistically significant contributions to the prediction of GHQ-scores.

Multiple regression and correlational analyses (MRC) create both a regression equation and 'an index of the degree of relationship between the dependent variable, on the one hand, and the weighted combination of explanatory variables as specified by the regression equation, on the other hand, that is, R' (Licht, 1995:29) which in this case is 0.66. The obtained R here is statistically significant and relatively large in magnitude, which indicates a strong relationship between the combination of all (remaining) explanatory variables and the dependent variable, which is GHQ-score. However the meaningfulness of multiple correlations, according to Licht (1995:29), 'might be more easily evaluated by examining the R-square, which indicates the proportion of variance in the criterion [dependent variable] that is shared by the weighted combination of predictors [explanatory variables]. It follows, then, that 1 - R-square is the proportion of variance that is *not* predictable'.

The multiple coefficient of determination or 'R-square' for this linear regression equation is .44 (P = .000) which indicates that 44 percent of the variance in GHQ-scores was predicted by combination of the explanatory variables. We also need to determine the independent

contributions of each of the explanatory variables[1]. The frequently used forms of the regression equation are the *raw score*[2] and the *standard score regression equations*[3]. As Wright (1995:222) explains, 'the coefficient for the explanatory variable estimates the change in the dependent variable for any one-unit increase in the independent variable. The constant term [in this case = 24.6] estimates the value of the dependent variable for a case that has an explanatory value of 0'.

The statistical significance of the partial regression coefficient (raw or standard) means that 'within the probability of error represented by the *p* value, the magnitudes of these coefficients differ from zero (Licht, 1997:39)'. Therefore, 'the corresponding predictors [explanatory variables] would be considered to make statistically significant independent contributions to the prediction and understanding of the criterion' [dependent variable] (Ibid:39).

Being aware of the problematic effects of multicollinearity[4], and the fact that usually not much can practically be done to overcome this problem, during the entering of the explanatory variables, special attention was given to examining the bivariate correlations between all relevant pairs of the explanatory variables, as suggested by Licht (1995) in order to reduce such effects as much as possible.

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[1] Bearing in mind that 'the contribution is only independent of the other variables included in the equation' (Licht, 1995:38).

[2] 'For which the scores on the criterion and on the predictors are in the original units of measurement' (Licht, 1995:27). In the raw score form of the equation, a numeric constant called the *intercept* [constant] is included, which indicates 'the score on the criterion [dependent variable] when all of the predictors are zero' (Ibid.:28).

[3] 'For which the scores for the criterion and predictors are presented in standard deviation units (i.e. z scores)' (Licht, 1995:27). Here the intercept is zero, and therefore it is not included in the standard score form of the equation.

Before discussing the final regression model for GHQ (forthcoming Table 7-3), there are notes to be made, starting with a brief summary of the previous regression models.

Considering the theoretical model, the first group of variables to enter the equation was the series of socio-demographic variables (Group-1 variables). The respondent's own educational level was statistically significant at first, but with the inclusion of her husband's educational level became non-significant (they were highly correlated, r= 0.69, p<.001, see chapter 5). Not surprisingly, husband's educational level was highly correlated with his income (r = .31, p <.001), and therefore the effect of income was diminished. On the whole, for Group-1 variables, only husband's educational level had a statistically significant effect on GHQ-scores, although eventually with the entrance of other groups of variables, its effect became non-significant. At this stage, the variable (paid) working/non-working was not statistically significant (see Table 7-1).

Table 7-1. First stage regression results for GHQ

Explanatory variables	B-coefficients	Betas
Working/non-working	.17 ns	.01
Husband's educational level	-.11 + +	-.09
Constant=13.6		
R-square= .007		

* Statistical significance of variable in the model, + p < 0.05; + + p <0.01; + + + p<0.001.

In the second stage, (paid and unpaid) work-related variables (Group-2) were gradually entered. With the inclusion of the respondent's physical job-conditions, the husband's

[4] The term multicollinearity is used when discussing the intercorrelations among the predictors in an MRC analysis...In general, 'the greater the multicollinearity, the more problems exist in terms of technical aspects of MRC, as well as for practical prediction and theoretical interpretations' (Licht, 1995:45).

educational level effect became non-significant. Having included all of the Group-2 explanatory variables, those which were statistically significant are shown in Table 7-2.

Table 7-2. Second stage regression results for GHQ

Explanatory variables	B-coefficients	Betas
Working/non-working	1.92 +	.165
Psycho-social job-conditions	-.12 + +	-.09
Physical job-conditions	-.18 + +	-.10
Psycho-social housework conditions	-.28 + + +	-.26
Physical housework Conditions	-.26 + + +	-.14
Place of work	-2.37 + +	-.21
Constant=32.9		
R-square= .16		

Statistical significance of variable in the model, + $p < 0.05$; + + $p < 0.01$; + + + $p < 0.001$.

In this stage, however, the resulting r-square for this set of variables (0.16) was not a remarkable one. The important issue to bear in mind is that, with regard to this indicator of mental health, the socio-demographic factors as well as common indicators of household's social class, such as husband's occupational class and education, have not shown significant effects with other explanatory variables such as women's physical and psycho-social job and housework conditions present. Therefore, seemingly, women's own job-characteristics explain their mental health better than their husbands'.

At stage three, the series of life/social context variables were included, that is stress, self-esteem, social support indicators, economic independence, role-satisfactions, health behaviour score, housework and childcare division of responsibilities, marital companionship, and husband's agreement with paid work. The inclusion of stress made the earlier effect of

physical job-conditions nonsignificant and, due to their relatively high internal correlation (r = .36, p = .000), self-esteem made psycho-social job-conditions non-significant too.

We move on to the final regression model with the remaining explanatory variables which are both theoretically and empirically important (see Table 7-3). However, for the variable of '(paid) working/non-working status' I need first to explain what this variable actually means, since the presence of other explanatory variables in the regression which are exclusive to the working women's sub-sample modifies the definition and the interpretation of its B-coefficients. The sub-sample of working women is in itself divided into sub-divisions (such as working full-time/part-time, high/medium/low occupational class and so on), therefore our non-working sub-group is not always compared with a homogenous working women's sub-group, but instead to a specific subset of the working women which needs to be into taken account when interpreting the results of each regression equation.

In the final regression model, the B-coefficient for the variable 'working/non-working' is 1.99, which, means that a change of one unit in this particular variable from value 0 (non-working status) to 1 (working status) causes the GHQ-score to increase by 1.99 units or, in other words, a move towards worse mental health (higher GHQ-score) which is statistically significant (p = .012). Considering the explanatory variables exclusive to working women present in this regression model (namely, 'physical job-conditions' and 'place of work'), this does not, however, pertain to paid work in general, but actually to a specific subset of women who do paid work at home who have an average score of physical job-conditions. In other words, women who are not in paid work of any kind are in better mental health than women

who work *at home* and enjoy an *average score in the scale of physical job conditions*. Since this is not a comparison between non-working women and women who work out of home, I needed to do some calculations. By adding the B-coefficient for the working/non-working variable (1.99) and the B-coefficient for variable 'place of work' (-2.48) multiplied by one unit (which is the difference between working at home and working out of home for this dummy variable), the result will be a new B-coefficient for the working/non-working variable which compares non-working women with women working out of the home (again with an average value of the variable physical job-conditions), which equals to -.48. This new B-coefficient for the variable 'working/non-working' would mean that a change from being non-working to working out of home (with average physical job-conditions) decreases the amount of psychological distress. However, since the result is not statistically significant ($p = .098$) there is not enough evidence to confirm this result[5]. Since in this research we are more interested in the relationship of women's paid work *out of home* with their health[6], the B-coefficient we must consider for our conclusion is -.48 (and not 1.99, as seen in Table 7-3) which is not significant.

[5] The significance for this coefficient was obtained through recoding the values of the variable work-place so that working out of home was the reference category.

[6] This is because, according to the literature reviewed in chapter 2, the rewards and positive consequences of working role for women largely concern working out of the home.

Table 7-3. Final stage regression model for GHQ[7]

Explanatory variables	B-coefficients	Betas
Working/non-working	1.99 +	.17
Physical job-conditions	-.15 +++	-.08
Psycho-social house-work conditions	-.06 +	-.05
Place of work	-2.48 +++	-.22
Stress	2.38 +++	.43
Self-esteem	-.20 +++	-.15
Social support: no of close friends	-.11 ++	-.07
Economic independence	-.30 +	-.06
Satisfaction: generally in life	-1.30 +++	-.17
Marital support/companionship	-.23 ++	-.09
(Constant = 24.6)		
R-square= .44		
N= 1036		

Statistical significance of variable in the model: + $p < 0.05$; + + $p < 0.01$; + + + $p < 0.001$.

We can see that working women with better physical job-conditions are more likely to be in better mental health than those with poorer physical job-conditions. The better women's psycho-social housework conditions are, the better their mental health (-.06).

The variable 'place of work', which is exclusive to working women, has a B-coefficient of -2.48 which means (one unit of) change from working *at home* to working *out of home* means a remarkable and statistically significant decrease in women's GHQ-score. Therefore, working out of home seems to be more beneficial in terms of women's mental health. The B-coefficient for stress (2.38) is, not surprisingly, high and highly statistically significant. Women who reported higher stress levels also had higher GHQ scores (worse mental health). Women who have higher self-esteem, on the other hand, tend to have less psychological distress (-.20). The results of bivariate analyses (chapter 5) revealed that among working

[7] The dummy variables for missing values of every relevant explanatory variable were included in this regression and all other regressions but they are not reported here to save space and also because they are not necessary to

women, those with higher incomes had significantly higher self-esteem scores. This evidence is a step forward regarding the link between paid work and mental health.

Number of close friends (an indicator of social support) has a statistically significant coefficient (-.11). That is, with every additional single friend, a woman's GHQ-score diminishes by .11 unit. Or, the more friends a woman has, the better her mental health is. Recalling the bivariate analyses (chapter 5), we found that women in paid work reported significantly more close friends (62 per cent of whom were friends associated with the paid work they had, that is, friendship through the working role) than housewives.

Greater economic independence improves women's mental health (B-coefficient = -.30). The result of bivariate analyses has already shown that the working women's sub-group had a significantly higher level of economic independence than non-working women (see chapter 5).

The B-coefficient of -1.3 for general life satisfaction means that, the more satisfied a woman the lower her GHQ-score (i.e. less psychological distress).

Summing up the results for the GHQ-scores, we found that the socio-demographic variables such as age, educational achievement, the household's material resources and even the role of carer do not greatly explain variations in women's mental health, as much as her own working role (Group-2 variables) and life/social context variables (Group-3 variables). In terms of the

interpret the results.

relative importance and the degree of influence according to the Betas seen in Table 7-3, stress (.43), place of work (-.22) and general life satisfaction (-.17) show greater effects.

In terms of the Group-2 variables (work role), different job-configurations showed important differential effects on a woman's mental health, with working out of home and also better perceived environmental/physical working conditions being associated with better mental health.

Among Group-3 variables (social/life context variables), the perceived psycho-social housework conditions significantly affect women's mental health and in a positive way. Seemingly, the more positive a woman's image of housewifery, the better her mental health. This holds for women in and out of paid work.

Other variables such as social support, self-esteem and economic independence, which were found to be positively correlated with the working role in the bivariate analyses, show significant effects on GHQ-score here as well. The significance of the variable 'marital companionship and support' indicates the importance of quality of married life and its impact on women's mental health. This is indicated also by the fact that women's experience of general life satisfaction, which is also significantly associated with GHQ-scores, can be directly or indirectly affected by her marital life as well as her working role.

Malaise

Since the final regression model for this indicator of mental health is largely similar to the final model for GHQ, to save time and space I briefly report the results concerning this indicator (see Table 7-4) and discuss only the differences between these two final models. In this research and also elsewhere (see e.g. Emslie, 1997) there are some cases where different measurements, such as malaise and GHQ, overlap each other because of similarities or common items used in constructing them.

Table 7-4. The final regression model for malaise

Explanatory variables	**B-coefficients**	**Betas**
Working/non-working	-.27 ns	-.06
Psycho-social housework conditions	-.05 + + +	-.11
Physical job conditions	-.06 + +	-.08
Physical housework conditions	-.06 + +	-.08
Stress	.64 + + +	.28
Social support: no. of people who help	-.13 +	-.06
General life satisfaction	-.61 + + +	-.19
Marital support & companionship	-.10 + +	-.09
Role conflict	.34 + + +	.09
Constant = 9.89		
R-square = 0.33		

As seen in Table 7-4, five out of eight significant explanatory variables for malaise are shared with those of the final regression model for GHQ (see Table 7-3). The ones which are exclusive to malaise are physical housework conditions, (social support) number of people who help, and role-conflict. According to these results, the better the physical housework conditions, the less malaise a woman suffers, which is not surprising considering the fact that physical and environmental housework conditions also reflect a woman's general material resources and the quality of her material life, which supposedly means that women with better life circumstances are more likely to enjoy themselves and have more resources to foster a

happy and satisfied life. It is also not surprising that having a larger number of people giving practical and emotional support is an effective way of reducing mental distress. Role-conflict, with all its associated stress and distress, as seen in Table 7-4 (B. = .34), clearly has a detrimental effect upon mental health (Dennerstein, 1995).

Summing up the results concerning mental health, we have seen that none of the socio-demographic and back-ground variables (Group-1) affect women's mental health significantly. The most important explanatory factors among Group-2 variables (paid and unpaid work-related variables) are physical job-conditions, psycho-social and physical housework conditions, and even place of paid work (whether in or out of the home). Among social/life context variables, the significant variables are stress and general satisfaction in life (most influential), followed by self-esteem, social support indicators, marital support and role-conflict, with their negative and positive effects on women's mental health.

Physical health and its explanatory factors

Self-assessed health for her age

One of the key self-assessed health indicators was the respondent's health state considering her age (from poor to excellent). Due to the restricted range of answers it was decided to dichotomise the four responses into poor (poor/fair) and good (good/excellent) and use logistic regression (similar use of such recoding for self-rated health for logistic regression analyses can be found in Arber, 1997; Bartley *et al.* 1999).

The three groups of explanatory variables in the theoretical model were all entered into the equation gradually, with some being dropped due to their non-significant effects. The working/non-working variable was kept throughout, regardless of its significance, due to its crucial theoretical value. In the logistic regression models, as in the previous linear regression (for GHQ, for example), the meaning of the coefficient for this variable depends upon, and is modified by, other explanatory variables exclusive to working women present in the regression models.

Before looking at the final regression model for this dependent variable, a brief summary of the steps towards building the final regression model is given.

At the first stage, among the Group-1 variables (socio-demographic variables), since a woman's own and her husband's educational level were internally correlated, only the husband's education, which had a stronger coefficient, was kept in the regression. But husband's occupational class and educational level were also highly correlated, which eventually led to the exclusion of husband's educational level. Husband's occupational level was also dropped due to the significance of his income categories. In the end, the remaining significant variables for this stage are displayed in Table 7-5.

Table 7-5. First stage (logistic) regression results for health state for age

Explanatory variables	B-coefficients	Exp. (B)
Working/non-working	-.01 ns	.99
Respondent's age	.05 + + +	1.05
No. of children	.14 +	1.15
(Husband's) low income	.74 + + +	2.10
(Husband's) medium income	.45 + +	1.56
Original -2 Log Likelihood = 1473.8		
Obtained -2 Log likelihood = 1407.3		
Model Chi-square improvement =66.5; df=8*, p =.000		
N=1065		

* The degrees of freedom do not match up with the (number of) variables in the table because some variables in the regression (those dummy variables for missing cases, as explained elsewhere) are omitted here. This is the case with all other logistic regression results in this chapter.

As seen in Table 7-5, with every additional year in respondent's age the odds of reporting ill-health increase. So do the odds for every additional child. Interestingly, the variable of husband's income also significantly affects health, with better off households showing better health states for women.

When group-2 variables (work and work-related variables) were gradually entered, the inclusion of the respondent's own occupational class made the husband's occupational class nonsignificant, since the two are internally correlated. Her occupational class also became nonsignificant when the variable of psycho-social *job*-conditions was entered. The physical job-conditions, which showed a significant effect initially, became nonsignificant when the variable 'physical housework conditions' was entered. By the end of the second stage, those explanatory factors, which showed significant effects are seen in Table 7-6.

Table 7-6. Second stage regression results for health state for age

Explanatory variables	B-coefficients	Exp. (B)
Working/non-working	-.75 +	.47
Respondent's age	.07 + + +	1.08
Husband's low income	.60 + +	1.82
Husband's medium income	.48 + +	1.62
Respondent's low income	.81 + +	2.24
Respondent's medium income	.53 ns	1.71
Psycho-social job-conditions	-.07 + + +	.93
Psycho-social housework-conditions	-.07 + + +	.93
Physical housework conditions	-.09 + + +	.91
Original -2 Log Likelihood =1473.7		
Obtained -2 Log likelihood =1309.4		
Model Chi-square improvement =164.4; df=15, p =.000		
N=1065		

In stage two, we see respondent's income significantly affecting her health state. Taking the high-income category as the reference category, we can see that there is a significant difference between the health of women who earn high and low incomes, with high-income working women reporting better health states for their age. We can also see that women with better psycho-social and housework conditions and better physical housework conditions, are in a better health state which is not surprising.

In the third stage, with the Group-3 variables (life/social context variables) gradually entered, the variable 'respondent's own income' (highly correlated with the respondent's 'self-esteem'), became nonsignificant. The effect of income on health was actually because of self-esteem. When self-esteem is present, the significance of income diminishes. The inclusion of 'marital satisfaction' diminished the significance of 'husband's income', and 'psycho-social housework conditions'. The number of years the respondent worked was obviously correlated with the respondent's age.

Table 7-7. Final logistic regression model for self-rated health for age

Explanatory variables	B-coefficients	Exp. (B)
Working/non-working	.09 ns	1.09
Respondent's age	.06 + + +	1.05
No. of children	.14 +	1.15
Husband's: low income	.45 +	1.56
Husband's: medium income	.41 +	1.50
Higher occupational class (her own)[8]	-.65 +	.52
Middle occupational class (her own)	-.60 +	.55
Role conflict	.34 + +	1.45
Psycho-social job-conditions	-.04 +	.96
Psycho-social housework conditions	-.03 +	.97
Physical housework conditions	-.07 + +	.94
Stress	.37 + + +	1.44
Self-esteem	-.05 +	.95
Marital satisfaction	-.25 + + +	.78
Original -2 Log Likelihood = 1473.7		
Obtained -2 Log likelihood = 1243.8		
Model Chi-square improvement = 229.9; df=24, p =.000		
N=1065		

Statistical significance of variable in the model, + $p < 0.05$; + + $p < 0.01$; + + + $p < 0.001$.

To interpret the meaning of the variable 'working/non-working', we need to refer to those variables which are exclusive to working women in the regression model. Since there are three such variables, namely; women's occupational class[9]; psycho-social job-conditions; and role conflict, the non-working women in this sample are actually being compared with working women with lower occupational class (as the reference category, absent in Table 7-7 at present), average psycho-social job-conditions, and low role conflict. The B-coefficient for the variable for working/non-working is .09 (ns.). There is no evidence of any significant differences in self-assessed health state between these two groups of women. I changed the category of reference

[8] This stands for class 1 and 2 as high occupational class (as opposed to low occupational class i.e. classes 7, 8 and 9 which is the reference category in this model). Classes 3, 4 and 5 come together as the middle class, which is also compared with the lower class here.

to (the respondent's) high occupational class, with which non-working women were then compared. The new B-coefficient for the variable 'working/non-working' was -.58 (p = .19, Exp. (B)=.56), which would mean that a change from non-working to working in higher occupational class jobs (with average psycho-social job-conditions and low role-conflict), would reduce the odds ratio for reporting poor health by 56 percent for a woman. But since the coefficient is not significant there is insufficient evidence to confirm this.

The within-group comparisons for the working women in terms of their occupational class yield interesting results. With lower occupational class as the reference category (see Table 7-7) with which the high and middle occupational class categories are compared, there are statistically significant differences in reporting poor health between each of the two classes and the reference category which is the lower class. The odds ratios for reporting poor (and fair) health are lower by factors of .52 and .55 respectively for higher and middle occupational classes compared with lower occupational class, as is usually the case with the effect of socio-economic class on health (see e.g. Hart, 1985). However, it is interesting that here it is women's *own* occupational class, and not that of their husbands, which reveals this common finding, although of course it is perhaps to some extent due to the fact that there is a high correlation between women's and their husband's occupational classes. Nevertheless, considering that, in the regression model, husband's occupational class was accounted for (and did not show significant effect) and his income has been controlled for, this is an independent effect of the women's occupational class.

[9] This variable showed significant effect in this stage although not in the previous stage and therefore I re-entered

Looking at the odds ratio for the variable of perceived psycho-social job-conditions, we find that every single unit of higher score towards better psycho-social job-conditions in the scale decreases the odds of a woman reporting less than good health by a factor of .96. Those who perceived their jobs as more interesting, varied, less mentally tiring, more socially rewarding, less repetitive and more valued in other people's view seem less likely to report poor or fair health than those who perceived their working conditions less positively.

The last explanatory variable exclusive to working women remaining in the final regression model was the 'role-conflict' scale. The higher the score, the higher the role conflict experienced. As shown in table 7-2, every single unit of higher score in role conflict causes the odds of reporting poor health to increase by 45 per cent. Role conflict is among the concepts referred to by the supporters of the negative approach to women's multiple roles (see chapter 2) as one of the consequences of women's paid work which would diminish the rewards and advantages paid work would otherwise provide for women. This is considering the fact that women both in industrialised and traditional societies are still primarily responsible for housework and childcare. Having a paid work role as well as motherhood, women have to cope with high demands from both domains, neither of which tolerates any neglect and both of which expect quality service. As revealed in chapter 5, one of the main reasons that some working women felt inclined to give up working, was because work hindered their fulfillment of motherhood and childcare roles.

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it.

We see that among the socio-demographic explanatory variables, respondent's age, number of children and husband's income are significantly associated with a woman's self-assessed 'health for her age'. Age is strongly correlated, with the odds of reporting poor health increasing by a factor of 1.05 for every single additional year of age. A woman's number of children also significantly affects her odds of poor health, with the larger the number of children, the higher the odds of reporting a poor or fair 'health state for age'. This exists after controlling for age and therefore is an independent effect. A larger family size is likely to mean increased responsibilities for the mother and a larger work-load, which understandably increases the health risks associated with the housework and, in the case of working mothers, also paid work.

Husband's income is also associated significantly with women's self-assessed health, but the respondent's own income is not. Women's income is on average lower than their husband's income, and accordingly seems to play a less crucial role in the financial situation of their households, although for the largest percentage of women who worked, the main motivation for taking the paid work was to help their household budget (see Table 7-8).

Table 7-8. The reasons working women chose to work

The reasons	**N**	**Per cent of responses**
Support the family	352	25.5
Personally likes working	308	22.3
Educational qualification	146	10.6
To be economically independent	272	19.7
Likes to socialise with people	283	20.5
Other reasons	22	1.6
Total	1383	100.0

In general, it is most probably the husband's earnings which determine the standard of living and the life style in the household, so that higher income would, for example, mean a better diet, better use of medical services and greater general material welfare, which directly or indirectly affects the health of the family (see later in this section on physical housework conditions). The odds of poor health are lower for women with husbands earning high incomes (with a significant odds ratio of 0.64 (= 1/1.56, see Table 7-7), but there is not enough evidence to prove this with regard to women with husbands with medium income, for the odds ratio in this case was less than significant.

The way a woman perceives the psycho-social circumstances of her work in the house is significantly associated with her health state. Those who perceive better psycho-social housework conditions are less likely to report poor or fair health. This scale, it will be remembered, looks at how women find their housework in terms of being interesting, varied, valued in other people's views, and the extent to which they feel themselves in control of things and capable of socialising. The odds ratio for reporting poor health for every added unit in the scale for this concept is .97. Those who have higher scores on this scale are those who have associated more positive qualities with their housework role, and for these women, apparently, the odds of reporting worse health state are lower.

Accordingly, physical housework conditions significantly affect the odds of reporting poor health. The variable also reflects material household conditions to some extent and, as the odds ratio reveals, every unit increase in the scale of physical housework conditions decreases the odds of reporting poor or fair health for women by a factor of .94. This result is in line

with the affluence-effect of the husband's income on this indicator of health (discussed earlier), which suggests the importance of material resources in determining the health status of the mother as well as, perhaps, the rest of the family.

Another variable from the group of life/social context variables is stress which, predictably, has a strong and highly significant effect on women's self-assessed health. Higher levels of stress increase the odds of women reporting poor or fair health.

Self-esteem, on the other hand, has a positive as well as significant effect on woman's health state. The higher the self-esteem, the lower the odds of reporting poor or fair health. Bivariate results already showed a similar association, and also that working women, and particularly women in higher occupational classes, experience higher self-esteem. Self-esteem, according to the literature (e.g. Pugliesi, 1995), is considered as one of several mechanisms through which the working role can affect women's health positively (see chapter 2).

Finally, the effect of marital life and the husband's role on women's health is reflected here in the strong association between satisfaction with marital life and women's health. As we can see, greater satisfaction decreases the odds of women reporting worse health (by a factor of .78). This is also remarkable because, when material resources (such as his income) are already controlled for, such a strong effect still remains, perhaps highlighting the non-material dimensions of the husband's role. Husband's attitudes therefore seem to be very influential on women's health both in terms of modifying the effects of the work-role and the general stressors of the household's financial and economic situation.

Health state within the last year

Health state within the last year is constructed in a similar way to the health indicator of self-rated health considering age. As a dependent variable in logistic regression it was recoded into poor (poor or fair) health and good (good or excellent) health. Since the two indicators largely resemble each other, I report only the final regression model for health in the last year with reference to the few differences in the results for the two (see Table 7-9).

Table 7-9. Final regression model for health state within the last year

Explanatory variables	**B-coefficients**	**Exp. (B)**
Working/non-working[10]	-.80 ns	.45
Respondent's age	.06 + + +	1.06
Husband's educational level	-.06 + +	.95
Psycho-social job-conditions	-.03 +	.96
Psycho-social housework conditions	-.03 +	.97
Physical housework conditions	-.07 + +	.93
Stress	.39 + + +	1.47
Role conflict	.38 + +	1.47
Division of housework responsibilities	-.04 +	.96
Original –2 Log Likelihood = 1475		
Obtained -2 Log likelihood =1277		
Model Chi-square improvement =198 df=19, p =.000		
N=1065		

As seen in Table 7-9, six out of 8 significant explanatory variables of health state within the last year are shared with those of self-rated 'health state for age' (Table 7-7). The two additional variables here are husband's educational level and division of housework responsibilities. These two variables seem to contribute to each other, as we expect husbands with higher education to show a more egalitarian attitude towards sharing the responsibilities

[10] The variable 'working/non-working' is not significant but is however presented here due to its theoretical importance

of housework and therefore to help their wives more. The odds of reporting poor health are significantly lower for women whose husbands have higher educational achievement levels (.95) and those whose husbands help more with the housework (.96). The other variables show similar effects to those as for self-rated health for age.

Long-standing illness

Another indicator of physical health status is whether or not the respondent suffers from any long-standing illness, disability or infirmity. Therefore a logistic regression analysis was carried out.

As the first group of explanatory variables (socio-demographic ones) were gradually entered into the regression, similar results on the internal correlations were found as in the previous regressions which resulted in some exclusions of variables. The significant socio-demographic variables at the end of the first stage regression analysis are displayed in Table 7-10.

Table 7-10. The first stage regression model for long-standing illness

Explanatory variables	B-coefficients	Exp. (B)
Working/non-working	.31 +	1.36
Respondent's age	.04 + + +	1.04
Respondent's age at first pregnancy	-.04 + +	.96
Husband's educational level	-.04 + +	.96
Carer-role	.57 + +	1.78
Original -2 Log Likelihood =1420		
Obtained -2 Log Likelihood =1362		
Model Chi-square improvement=58 df=9, p =.000		
N=1065		

As seen in Table 7-10, having included only the socio-demographic factors, working role significantly affects women's odds of suffering from a long-standing illness, so that a change from not being in a paid work to having a paid work role is associated with greater odds of suffering from a long-standing illness (1.36). Also, older age and having a carer role increase the odds of ill-health here. On the other hand, we can see that husband's higher levels of education and having her first pregnancy later in life decrease a woman's odds of suffering from a long-standing illness. Since in Iran the average age at first pregnancy is relatively low, in line with the fact that the age of first marriage too is relatively low (see chapter 5), early pregnancies seemingly contribute to women's odds of developing chronic health problems, some of which are clearly related to gynaecological problems. The large percentage of women reporting such problems among respondents in our sample (see chapter 6) confirms this point.

At the end of stage two, with the inclusion of work and work-related explanatory variables (Group-2 variables), the significant variables associated with women's long-standing illness are displayed in Table 7-11.

Table 7-11. Second stage regression results for Long-standing illness

Explanatory variables	B-coefficients	Exp. (B)
Working/non-working[11]	.24 ns	1.27
Respondent's age	.04 + + +	1.05
Respondent's age at first pregnancy	-.05 + +	.95
Husband's educational level	-.05 + +	.96
Carer-role	.57 + +	1.77
Physical job-conditions	-.05 +	.95
Psycho-social housework conditions	-.07 + + +	.93
Original -2 Log Likelihood =1420		
Obtained -2 Log likelihood =1322		
Model Chi-square improvement=98 df=13, p =.000		
N=1065		

We can see that better job-conditions and better perceived psycho-social work conditions significantly affect women's odds of reporting a long-standing illness by factors of .95 and .93 respectively (see Table 7-11). In this stage, by including the variable of job-conditions, the variable of working/non-working, which earlier showed a significant deteriorating effect on women's health, becomes nonsignificant. That is, whether or not working affects women's health negatively depends on job-conditions. Therefore we see that better job-conditions significantly lessen women's odds (.95) of reporting ill-health (long-standing illness). Women's unpaid work also significantly improves the odds (.93). The better the respondent perceives her psycho-social conditions to be, the better her health.

After adding the third group of variables (the life/social context variables), the remaining significant explanatory factors are displayed in Table 7-12.

[11] The variable 'working/non-working' is not significant, but is presented here due to its theoretical importance.

Table 7-12. The final regression model for long-standing illness, disability or infirmity

Explanatory variables	B-coefficients	Exp. (B)
Working/non-working	.24 ns	1.26
Respondent's age	.04 + + +	1.04
Respondent's age at first pregnancy	-.05 + +	.95
Carer role	.60 + +	1.82
Husband's educational level	-.05 + +	.96
Psycho-social housework conditions	-.09 + + +	.92
Stress	.26 + + +	1.29
Number of close friends	.06 + +	1.06
Satisfaction with housewifery	.27 +	1.31
-2 Log Likelihood =1420.5		
Obtained -2 Log Likelihood = 1295.46		
model chi-square = 125.11, df=16, p=.000		
N=1065		

Statistical significance of variable in the model, + $p < 0.05$; + + $p < 0.01$; + + + $p < 0.001$.

The 'working/non-working' variable compares the non-working women to the working women sub-sample as a whole since there are no variables exclusive to working women in the equation. The effect of the 'working/non-working' variable on the dependent variable is not statistically significant, therefore there is not sufficient evidence that paid work can affect women's chances of suffering from a long-standing illness.

Respondent's age, not surprisingly, had a strong statistically significant association with long-standing illness. With every additional year of age, the odds of suffering a long-standing illness rose by a factor of 1.05.

An expected association is revealed for respondent's age at first pregnancy and her long-standing illness. The result here shows that the odds of reporting a chronic illness decreases by higher age at first pregnancy (with an odds ratio of .95). Non-working women in our sample

had significantly higher ages at first marriage and, consequently, higher ages at their first pregnancy than working women (see chapter 5). This is perhaps affected by the fact that the working women had higher educational levels. Higher education is associated with smaller family size too. As we discussed earlier in chapter 2, Waldron *et al.* (1998:218) refer to 'the ages of a woman's children and the woman's age when she has her first child' as influential on the extent of role strain, and on whether or not the parental role has harmful effects on health.

Having a carer role (included among the socio-demographic group of variables) showed a statistically significant effect on the chances of suffering from a long-standing illness. Apparently, among those who are caring 'permanently' or 'most of the time', the odds of reporting a longstanding illness are of much greater magnitude, by a factor of 1.82 compared with the reference category (those who do not care or care only occasionally). This may be due to the fact that caring adds to the degree of physical burden a woman has to put up with alongside her routine housewifery, motherhood and perhaps paid work responsibilities, so that this additional demanding nurturing role effectively increases the odds of her suffering a long-standing illness. This result is also consistent with the other research findings (e.g. Gove and Hughes,1979, Waldron *et al.* 1998) concerning the effects of excessive role demands on women with higher rates of stress and physical illness.

Apparently, women with husbands with higher education are less likely to suffer from a long-standing illness. The odds of reporting a long-standing illness decreases by a factor of .96 for every additional year in the husband's level of education. This could partly be due to the fact

that the husband's educational achievement and his income are usually internally correlated. On the other hand, since husband's income did not show greater significance than his educational level, it may be concluded that there must be something more to husband's educational level to make it highly significant in this relationship. Perhaps qualities such as more health-oriented behaviour, health information or taking up a healthier life-style, which seem to be associated with higher educational achievement, also contribute to the greater importance of this variable compared with other variables such as income.

'Perceived housework psycho-social conditions' is among the life/social context variables, which significantly affect women's odds of having a longstanding illness. As for the previous indicator of physical health (health for her age), scores in the scale of psycho-social housework conditions meant that with every added unit in the scale, the odds of a woman's reporting long-standing illness decreases by a factor of .92. Women's perceptions of the psycho-social conditions of their housework significantly affect this indicator of health. However, the physical conditions of housework did not show any significant effect here, perhaps because they also reflect the material resources of the household and, since the husband's educational level is present in this equation, the affluence effect is therefore covered by that variable.

Stress is among the third group of explanatory variables which significantly affects both women's *mental* health (as seen in the regression model for GHQ-scale) and *physical* health. Every additional unit of stress increases the odds of women suffering from a long-standing illness by a factor of 1.29. Stress apparently has implications for both the mental and physical

dimensions of health, although a reverse causation may well be the case in certain circumstances when, for example, stress levels increase due to limitations caused by illness.

Another explanatory variable with a significant effect is the number of close friends (an indicator of social support). The obtained odds ratio is 1.06. Seemingly, having more friends is associated with higher odds of a woman's reporting a chronic illness. The result probably suggests a reverse causation; those who suffer from chronic illnesses are perhaps more in need of a friend's support, and are therefore more likely to rely on their friendship relationships. This link seems to be particular to Iran, i.e. people tend to receive more support from friends in illness.

Satisfaction with housewifery too is positively associated with reporting longstanding illness (the odds ratio = 1.31). That is, with more satisfaction the odds of reporting long-standing illness increases (by 31 per cent). Perhaps those more satisfied with housewifery tend also to push themselves into more hard work and, consequently, tend to increase their likelihood of becoming ill due to the hardship of housework they are subject to, considering that in Iran the material and technological circumstances of performing housework are not as advanced as in Western countries where dishwashers, microwave ovens, and many other quality household appliances (see Popay and Bartley, 1989) are available and generally used. Recalling responses to the question on what the respondents thought the health risks of housework would be, we saw that large percentages of women counted various chronic conditions such as backache, leg-ache and similar problems as examples of health problems housework had caused them, or was most likely to cause them (see chapter 6).

As the results reveal, paid work does not directly influence the odds of reporting long-standing illnesses since there are no paid-work related variables present in the final regression model. However there are explanatory factors, which may intervene in the relation between work and health, such as stress and housewifery role satisfaction.

Limiting long-standing illness

Since this indicator largely resembles the measure for long-standing illness (Table 7-12), only the statistically significant variables of the final regression model for this health indicator are reported, plus the variable 'working/non-working' (see Table 7-13).

Table 7-13. The final regression model for limiting long-standing illness

Explanatory variables	**B-coefficients**	**Exp. (B)**
Working/non-working	-.04 ns	.96
Respondent's age	.04 + + +	1.04
Respondent's age at first pregnancy	-.06 + +	.95
Carer role	.45 +	1.57
Paid help	.67 + +	1.95
Psycho-social job conditions	-.04 +	.96
Psycho-social housework conditions	-.04 + +	.96
Stress	.32 + + +	1.37
Social support: no. of close friends	.05 +	1.05
-2 Log Likelihood =1216.62		
Obtained -2 Log Likelihood = 1123.09		
model chi-square = 93.53, df=15, p=.000		

In general, there are 8 major significant explanatory variables for this dependent variable, 6 of which are common to longstanding illness (see Table 7-12).

The two variables significantly associated with limiting longstanding illness in this model but not in the previous one are paid help and psycho-social job-conditions. Seemingly, those who are suffering from a limiting chronic illness are more likely to be in need of paid help. Better

psycho-social job-conditions show beneficial effects in decreasing the odds of suffering from a limiting chronic illness (by a factor of .96 for every additional unit). This may be because socially and economically active women are practically less able to spare any time for themselves while being ill, therefore they cannot even think of allowing illness to limit their activities, which have to be performed regardless of their condition. As one of the factory workers during the interview said, 'my illness is limiting, but I can not limit my work. I am bound to do it anyway. So my illness is not limiting!'. The same point is referred to also by Kane (1994).

Physical symptoms women tend to suffer from generally

Another physical health indicator is the number of symptoms the respondents generally tend to suffer from, which largely resembles the result for the variable longstanding illness. It is perhaps because such symptoms are usually those associated with the chronic illness(es) one suffers. Thus, looking at the significant explanatory variables for the dependent variable of (number of) symptoms women tend to suffer (see Table 7-14), five out of seven significant explanatory variables are found to be the same as those for longstanding illness.

Table 7-14. Final regression model for the number of symptoms respondents tend to suffer generally

Explanatory variables	B-coefficients	Betas
Working/non-working	-.01 ns	-.002
Age	.02 +	.08
Age at first pregnancy	-.03 +	-.08
Carer (yes/no)	.30 +	.06
Husband's occupational class (high)	-.30 +	-.08
Husband's occupational class (middle)	-.37 + +	-.11
Stress	.19 + + +	.11
Psycho-social house-work conditions	-.04 + + +	-.11
Physical house-work conditions	-.05 + +	-.09
(Constant = 3.37)		
R-square= .09		
N= 1064		

Statistical significance of variable in the model, + $p < 0.05$; + + $p < 0.01$; + + + $p < 0.001$.

Being or not being in paid work does not significantly affect women's number of reported symptoms (see Table 7-14). The two explanatory variables which are present in Table 7-14 and not in Table 7-12 are husband's occupational class and perceived physical housework conditions. Women with husbands in higher and middle occupational classes report significantly fewer symptoms than women with husbands in lower occupational classes. We can also see that women who perceive better physical housework conditions, reflecting better material living circumstances, report better health status, which is not surprising. The remaining five significant variables are common to the dependent variable of long-standing illness, and thus are interpreted in the same way (see the text following Table 7-12). The number of symptoms generally suffered by women seems to reflect the kinds of problems which are not affected by temporary causes such as particular seasons (winter), and perhaps

this is why the variable of symptoms for the last month, which will be discussed next, does not have many common significant explanatory variables with this one.

Physical symptoms in the last month

As with the previous dependent variables, the explanatory variables were entered gradually according to the theoretical model. The statistically significant variables of the first stage regression, which concerns significant socio-demographic variables, are displayed in Table 7-15.

Table 7-15. First stage regression model for physical symptoms within the last month

Explanatory variables	B-coefficients	Betas
Working/non-working	.20 +	.07
Carer role (yes/no)	.34 + +	.08
Constant = .86		
R-square = .02		
N=1064		

In the first stage, having a carer role was significantly associated with number of symptoms experienced in the last month, as was being in paid work. Those in paid work and those with a carer role both reported more symptoms than those not in paid work, and those not playing a carer role, respectively (see Table 7-15).

In the second stage, the Group-2 variables (work and work-related) were entered. The significant variables are shown in Table 7-16.

Table 7-16. Second stage regression model for physical symptoms within the last month

Explanatory variables	B-coefficients	Betas
Working/non-working	.69 + +	.24
Carer role (yes/no)	.30 +	.07
Physical job-conditions	-.04 + +	-.09
Place of work (home/out of the home)	-.53 +	-.19
Constant = 1.18		
R-square = .03		
N=1064		

In the second stage, two more significant variables of physical job-conditions and place of work show significant effects. The better respondents' physical job-conditions are, the smaller the number of physical symptoms they report (B-coefficient = -.04). A change from working at home to working out of the home is also significantly associated with a smaller number of symptoms reported (see Table 7-16). Next we look at the final regression model, including all significant variables from the three explanatory groups of variables in the theoretical model.

Table 7-17. Final regression model for symptoms in the last month

Explanatory variables	B-coefficients	Betas
Working/non-working	.62 +	.21
Carer role	.27 +	.07
Physical Job-conditions	-.03 +	-.06
Place of work (home/out)	-.50 +	-.18
Respondent's occupational class (high)	.37 +	.13
Respondent's occupational class (med.)	.31 ns	.10
Stress	.18 + + +	.13
Marital satisfaction	-.22 + + +	-.18
Marital companionship	.10 + +	.14
Constant = .97		
R-square = .06		

There are similarities between the results of this regression model and those of the previous models for physical health indicators. Here again 'stress' and having a 'carer role' show detrimental significant effects on this health indicator. As seen in Table 7-17, a change from

being in paid work at home to being in paid work out of the home significantly improves the respondent's health state (B-coefficient = -.50). Stress showed an increasing effect while satisfaction from marital life significantly decreased the likelihood of reporting physical symptoms. Perception of better physical job-conditions was not surprisingly associated with better health state. As for the variable of marital support and companionship, which shows a positive association with the number of symptoms (.10), it seems that there is a reverse causal effect, i.e. with the higher number of symptoms experienced, women received more companionship from their husbands.

The interpretation of the variable 'working/non-working' needs more attention. As in Table 7-17, the B-coefficient (.62), which is significant, means that with a change from not being in paid work to being in paid work at home (since this is the reference category for the variable working at home/out of the home) with average physical job-conditions, health worsens significantly. Since we are actually concerned about working out of home we need to obtain a new coefficient for the change from non-working status to working out of the home and average physical job-conditions. After changing the reference category for variable of place of work, the new coefficient is 0.62-0.50 = 0.12, which is not significant. Therefore, with other significant variables present in the equation, the working/non working status of the respondent does not significantly affect this indicator of health, so that working women (working out of the home) do not report significantly more number of symptoms than non-working women and it is only women working at home who appear to report more symptoms. This might be affected by the fact that working at home is often associated with poorer working conditions and lower occupational classes (see chapter 2).

Acute illness:

Whether or not a woman has an acute illness forms the last dependent variable discussed in this chapter. According to its dichotomous values, logistic regression was used. As for the first stage of regression analysis, entering only the 'working/non-working' variable and the socio-demographic variables resulted in no significant associates with acute illness. Only being pregnant at the time of the interview showed a close to significant effect (B-coefficient = .15, p= .08).

The second stage, with work-related explanatory variables entered into the regression equation, is shown in Table 7-18.

Table 7-18. Work-related (stage 2) significant explanatory variables for acute illness

Explanatory variables	**B-coefficients**	**Exp. (B)**
Working/non-working	.22 ns	1.24
Physical job-conditions	-.06 + +	.94
Physical housework-conditions	-.04 +	.96
Psycho-social housework-conditions	-.03 +	.97
-2 Log Likelihood =1364		
Obtained -2 Log Likelihood =1336.5		
Model chi-square = 27 df=7, p=.000		

In this stage, three variables are significantly associated with acute illness, all concerning working conditions. Not surprisingly, better environmental and psycho-social working conditions decrease the odds of reporting an acute health problem (see Table 7-18).

Next we look at the final regression model with all explanatory variables examined in terms of significant effects on the acute illness indicator.

Table 7-19. The final regression model for acute illness

Explanatory variables	B-coefficients	Exp. (B)
Working/non-working	.12 ns	1.12
Pregnant at the time	.91 +	2.48
Husband's occup. class (high)	-.19 ns	.83
Husband's occup. class (med.)	-.39 *	.68
Physical job-conditions	-.06 *	.94
Stress	.53 + + +	1.69
Satisfaction with housework	.19 +	1.20
Husband's agreement with her paid work (1= disagrees/0=agrees)	.55 +	1.73
Original -2 Log Likelihood =1363.94		
Obtained -2 Log likelihood = 1274.85		
Model Chi-square improvement =89.09; df=14, p =.000		
N=1065		

Statistical significance of variable in the model, + $p < 0.05$; + + $p < 0.01$; + + + $p < 0.001$. Statistical significance of difference from the reference category, * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

For the final regression model we have the variable of whether a woman is pregnant at the time significantly affecting the incidence of acute illness, such that those who reported being pregnant have higher odds of reporting suffering an acute illness (2.48) (see Table 7-19). We can see also that husband's occupational class shows a significant effect only in the case of the middle classes, with women married to middle occupational classes being less likely to report poor health than those married to men in the low occupational class. Among the life/social context variables, we have stress and husband's disagreement with a woman's paid work as variables which significantly affect the likelihood of reporting acute illness (see Table 7-19). That is, the more stress, the greater the odds of women having an acute illness (1.69). The odds of reporting an acute illness increase by a factor of 1.73 for those working women who reported their husbands disagreed with their working role. Working under circumstances of their husband's disagreement seems to have a detrimental effect on women's physical health. On the other hand, we can see that satisfaction with housewifery seems to have increased the

odds of reporting an acute illness (Exp.(B)=1.20). This might be because, as for the case of long-standing illness, those who are more satisfied with their housewifery role are those who probably endanger their health for the sake of fulfillment of proper housewifery. Women in Iran are particularly concerned about cleanliness of their homes since it is considered a duty as well as an element of appearance and tidiness (see chapter 3). Therefore, sometimes the desire to keep the house clean and tidy goes too far and may result in health problems. Earlier, we found that back-ache, leg-ache and tiredness, which seem to be indicators of excessive work, are among the most frequently reported health problems in the sample associated with paid, and particularly unpaid, work (see chapter 6).

The variable 'working/non-working' is not significant, i.e. when controlling for all variables common to working and non-working women in our sample the change from non-working status to working under average physical job-conditions and enjoying husband's agreement with paid work (since these two are the only variables in the final model exclusive to working women), does not significantly affect a woman's health state.

In this chapter we have examined the various physical health indicators used in this study and the effects of groups of explanatory variables. Perhaps one of the advantages of this study is the fact that health was measured in its various mental and physical dimensions simultaneously, which enabled us to compare the results from various health measurements and to find out more about the similarities and dissimilarities of these measurements in explaining health compared with each other.

One of the limitations of this research, however, with respect to its statistical analyses is the fact that, due to the constraints on the use of probability sampling methods, the findings must be regarded with some level of caution in terms of their generalisability. This is perhaps the case with many other studies of this kind, due to a well-known problem particular to Third World countries in general, i.e. the lack of appropriate sampling frames. In this case the lack of a sampling frame, particularly on working women in Tehran, created difficulties in conducting the probability sampling methods (see chapter 4).

Another problem with this research was the fact that due to constraints on time, budget and administrative resources, it was impossible to aim for a sub-sample of non-working women proportional to its real size (almost ten times its present size compared with the size of our working women sub-sample) in Tehran. Nevertheless, wherever possible, the necessary corrections and considerations for the effect of size have been carried out to control for this problem (see chapter 6).

One of the issues to bear in mind with regard to the findings of this research is the issue of causality. Since this is a cross sectional rather than a longitudinal study, we can not be sure of the direction of the causality for most of the relationships explored here, which is a problem experienced by other researchers (see, for example, Emslie, 1997).

Since this research is among the very first attempts to study women's health from a sociological point of view in Iran, I tried to provide as much data as possible, according to the research objectives in order to develop a more or less comprehensive body of data on the issue

- in line with and alongside other relevant research on women's issues by women's organisations.

The next chapter will provide a conclusion to the thesis by reviewing the results of the analyses in this chapter and the previous ones, in the context of the theoretical background of the research.

Chapter 8

Concluding discussion

Through this thesis I have sought to contribute empirical data towards debate around the impact of women's working roles - either paid or unpaid- on their health, by providing new analyses and findings about women in Iran, about whom very little is known in this regard. Although research in this area has continuously developed over the last 30 years, theories and hypotheses have usually originated in, and concentrated on, Western societies. This thesis is an attempt to examine particular hypotheses in the field of women's health in a somewhat different socio-cultural environment and intends to explore how far hypotheses developed and examined in the West can be adopted to study women in dissimilar social contexts; in this case women's lives in the middle eastern society of Iran.

In this study, in the capital city of Tehran, 1065 married women with children in paid and unpaid work were interviewed or themselves completed a research questionnaire. Their responses to the research questions provided data upon which analyses on the impact of women's working role on their mental and physical health were carried out and conclusions drawn. Working women (the sub-sample of women in paid work) were occupied in heterogeneous working environments and, along with women in unpaid work (the sub-sample of housewives), came from all walks of life and social backgrounds.

The research specifically aimed to find out if there were any health differences (in terms of both physical and mental health) between mothers at home (not in paid work) and mothers who also have a paid work role alongside their traditional roles of housewife and mother. In the case of any important and statistically significant health differences between the two samples, a concern was areas of difference, and furthermore, which social, economic or cultural factors contributed to health outcomes for women. Various demographic, occupational, and social life context factors at the individual, household and social structural levels, and the magnitude of their positive or negative effects on several multidimensional indicators of health employed in the survey, were examined respectively through bivariate (chapters 5 and 6) and multivariate (chapter 7) analyses. Since health in itself is known to be one of the most complex concepts to investigate (see, for example, Bartley *et al.* 1992; Stein, 1997), not surprisingly, the examination of each dimension of health through various measurements revealed differences.

In this chapter, first, I remind the reader of the two competing explanatory hypothetical models which largely influenced the development of the theoretical model used to study mothers' health in this thesis. I will recall the theoretical model upon which the hypotheses of this research were based as I review the empirical findings of the survey. I refer also to other research findings on similar subjects in the West and try to provide explanations for how far and why the findings of this study are in accordance with, or in contrast to, the results of research elsewhere in the world. Finally, being aware of the inevitable limitations and possible flaws in this survey, I will also provide suggestions in the light of the evidence here which may hopefully be of use to policy-makers in the area of social and economic affairs in Iran.

Women's roles: how they affect health

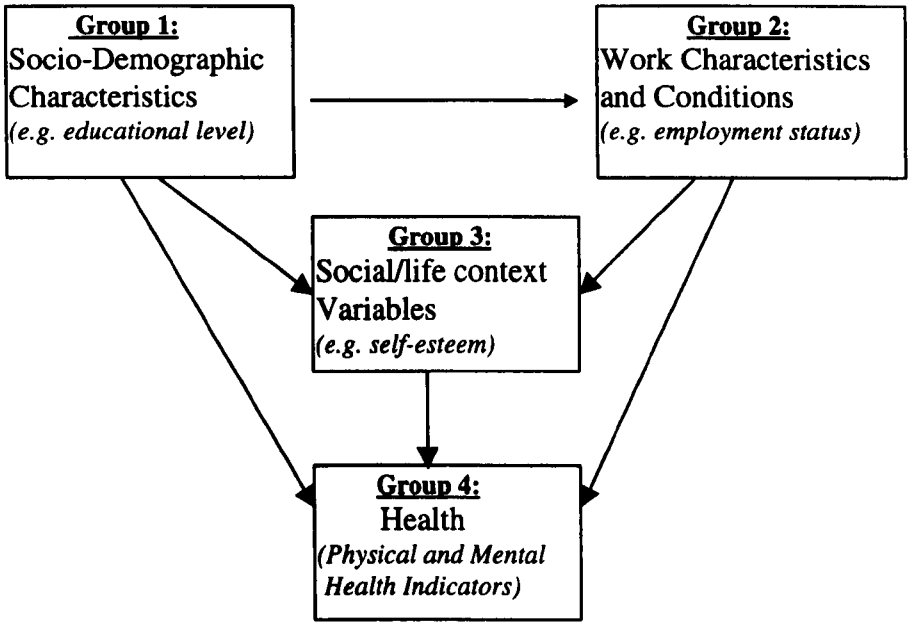
Among studies dealing with women's health inequalities in the West, two main competing approaches stand out (see e.g. Verbrugge, 1983; Arber *et al.*, 1985) which, within a role analytical framework, investigate the impact of the relatively new role of paid work for women in contemporary industrial societies and consider work as either beneficial or detrimental for women's health.

As discussed in more detail in chapter 2, the hypotheses in favour of women's paid work are referred to as 'role enhancement' (Bartley, *et al.* 1992), 'role expansion' (Sorensen and Verbrugge, 1987) or 'role accumulation' (Waldron *et al.* 1998). Each refers to mechanisms such as income, social support, self-esteem, satisfaction and economic independence associated with paid work and claims that women's well-being is improved either directly or indirectly through their involvement in broader social activities and socially valued economic participation. On the other hand, hypotheses known as the 'multiple role hypothesis' (Martikainen,1995), 'convergence hypothesis' (Martikainen, 1995), 'scarcity hypothesis' (Barnett, 1993) and 'role strain hypothesis' (Waldron *et al.*, 1998:218), refer to the double burden, role overload, strain and role conflict associated with women's paid work. They argue that the negative consequences of women's social and economic involvement in the labour market, alongside the demanding nurturing roles of wife, mother and in some cases carer, may result in increased morbidity and mortality through increased stress and excessive demands on time, energy and psychological resources. These two main approaches are of major concern

and are referred to in several places in this thesis. Hereafter, I will refer to them as 'positive' for the former and 'negative' for the latter.

In the present study, I adopted elements of both positive and negative approaches in building a theoretical model to study the impact of women's work in general on their mental and physical health with its multiple dimensions, which enabled me to examine some of the suggested factors - negative and positive - together, using multivariate analyses. Furthermore, I included several other factors, which are believed to influence women's health (most of which are used or suggested by researchers in the field, see e.g. Waldron, 1980; Seymour, 1988; Fuller *et al.*, 1993; Noor, 1995; Arber, 1997; Arber and Cooper, 2000) such as age, age at first pregnancy, educational achievement, health behaviours, household material resources and characteristics, the domestic division of labour, marital companionship and so on, as described earlier in this thesis.

Figure 8-1. Theoretical model of potential factors influencing women's health



I distinguished between the 'socio-demographic' and 'work and work-related' variables and a set of 'social life context' variables as three main groups of explanatory factors expected to influence women's health, and affect health outcome variables for women at a more or less proximate level.

A number of bivariate comparisons were carried out between women in paid work and housewives, as well as between sub-samples of working women with regard to their own occupational class, their work characteristics such as employment status (full-time/part-time), or place of work (at home/out of home). The multivariate regressions provide evidence on the significance, direction, and magnitude of the explanatory variables affecting the health outcome variables (while all other explanatory variables were controlled for) (see chapter 7).

The bivariate analyses revealed that there were no significant differences between the health of women in paid work and those not in paid work, in terms of most of the mental and physical health measurements used here, in spite of research evidence elsewhere (see e.g. Bartley *et al.* 1999). However, when some of the work-related variables such as women's own occupational class or psycho-social and physical job conditions were taken account of for women in paid work, statistically significant differences in health were found. The relative non-significance of paid work *per se* as a predictor of women's health needs further explanation. Paid work was expected to have significant effects on women's health, however the association of working role and women's health is a function of a series of mechanisms involved in the process, the outcome of which could result in better or worse health status for women. The process is very complex and the existence of controversial evidence supporting this or that rival approach simultaneously is proof of this. Referring to the two competing (positive and negative) explanatory models traditionally used in research concerning the work-health relationship, Bartley *et al.* (1992: 313) write, 'though a synthesis of these two models is becoming apparent in the literature (Arber, 1990, 1991), a number of important issues remain neglected'.

They refer to the need for consideration of the nature and/or extent of the workload associated with *both* formal and domestic work; the question of whether the relationship between employment and health differs for different types of ill-health; and the role of health-related selection into different social roles. Their findings suggest that the relationship is actually different for different types of ill health and also different for women in different types of occupation. Lee (1998:102) also reminds us of an interesting point. She writes,

A number of research projects from several countries support an integration of the role-overload and role-enhancement hypotheses. This research indicates that multiple roles will have a positive effect on health and well-being up to a certain total level of work, beyond which individuals will begin to suffer from tiredness, stress and overload, with resulting effects on their health.

In the current study, as expected, explanatory variables such as 'stress' and 'role-conflict' (elements of the negative approach to multiple roles for women) were found to adversely affect women's health, while variables such as self-esteem (confirming Pugliesi, 1995), social support (with the 'number of close friends' and 'number of people who helped in sickness' as indicators), and economic independence (representative of the positive approach) proved to be positively associated with women's health.

Considering all this, it may be said that, since elements of both the 'positive' and 'negative' approaches to the multiple role occupancy of women are shown to be statistically and empirically significant, there might be a counter balancing effect of the explanatory factors present, so that the rewards and the expected advantages of the paid work role are perhaps overshadowed by the negative forces involved in the lives of working women in my sample. Thus, while working women actually benefit from some of the rewards of a working life such as a broadened circle of friendship (or co-workers' social support), higher self-esteem, economic independence and feelings of worth, on the other hand they suffer from levels of stress as high as non-working women, as well as suffering from role-conflict and in some

cases, their husbands' disagreement with their (paid) working role. This seems to be particularly important in a society like Iran, where the duties of housewifery and motherhood are considered as the prime and most valued roles a woman performs, in spite of the increasing rates of women's socio-economic participation. Evidence from this research shows that the physical and psycho-social effects of women's unpaid work (housework) have a great impact on the health of both working and non-working women. In the case of working women, this impact is even greater than the impact of paid work.

Apart from the above mentioned variables as elements of the two competing theoretical approaches to women's multiple roles, others considered to be influencing women's health were included in the theoretical model of this survey, including those expected to affect women's health, according to the relevant literature. All these factors and variables and their contribution to the overall work-health relationship were examined through the sets of hypotheses based on the theoretical model. Some of the results of the bivariate analyses were, however, modified in the course of multivariate analyses reported in chapter 7.

The results of the individual regressions concerning different dependent variables (health indicators) were reviewed in detail in chapter 7. In this chapter, instead, a summary of the results of all the final regression models will be given. The significance and non-significance of the three main groups of explanatory variables in relation to the 9 dependent variables will be reviewed individually in Tables 8-1, 8-2 and 8-3.

First, we distinguish the explanatory variables of the three main groups, which unexpectedly did not show any significant effects on any of the 9 dependent variables in their final regression models (throughout chapter 7).

The factors with no significant effects on health

Among the first group of the explanatory variables, i.e. the socio-demographic set of variables, those which were non-significant in their relation to the 9 health indicators throughout the regressions (or were significant at an early stage but eventually became insignificant due to the inclusion of other variables), are husband's age[1], respondent's educational level (being highly correlated with - and overshadowed by - 'husband's educational level'), household size, the presence of underschool-age children, the composite index of socio-economic status (SES) (consisting of car ownership, housing tenure, monthly expenses, ratio of people to number of home-bedrooms[2]), respondent's father's occupational class (to tap parental occupational history). These results are based on the final regression models for each dependent variable, that is, when all other variables from the two other main groups (components of the theoretical model) were already included in the equation[3] (see Table 8-1).

[1] This variable was included in order to be controlled for when other variables such as husband's participation in domestic labour were examined.
[2] The index was based on a recoding of the values of each component variable into (0 to 3) and summing them up to form an overall scale of SES.
[3] The effects of these explanatory variables before the inclusion of the variables from other two main groups of variables can be found in chapter 7 in the first /second stage regression models for each dependent variable.

Table 8-1. The summary of the results of all final regression models concerning Group-1 explanatory variables in relation to the 9 dependent health variables*

	GHQ	Malaise	General symptoms	Last month-sympt.	hlth last year	hlth for age	Long-standing illness	Limiting long-standing illness	Acute
Working/non-working				+					
Group-1									
Age			+		+	+	+	+	
Age at 1st pregnancy			+				+	+	
Husband's age									
Respondent's education									
Husband's education					+		+		
Husband's income						+			
Household-size									
No. of children						+			
Underschool age child.									
Carer (yes/no)			+	+			+	+	
SES**									
Pregnancy (yes/no)									+
Respondent's father's occupational class									
Husband's occupational class			+						+
Paid help (yes/no)								+	

* (The sign of + is used wherever the explanatory variable concerned has shown a significant effect on the relevant health indicator (p = .05 and less) while all other predictors from Group-1 as well as Group 2 and 3 in the theoretical model have been controlled for in the individual final regression models for each of the 9 dependent variables. This clarification holds also for Tables 8-2 and 8-3.

** SES = housing tenure + monthly expenses + car ownership + ratio of household-members to bedrooms

Among these variables, those which were expected to show significant effects according to existing research but did not were 'the presence of underschool age children', as suggested by Rivkin (1972), Elliot and Huppert (1991) and Waldron *et al.* (1998) (see chapter 2). The current finding, however, may be because working women in Iran are able to benefit significantly from the services of state nurseries (those in the public sector), and also because of Iranian socio-cultural circumstances in which children are most often taken care of by their grandparents where state nurseries are not available or private nurseries are too expensive. Of all working women with underschool-age children in this research, 44.3 per cent sent their

children to public nurseries, 15.7 percent to private nurseries and 27.9 per cent had their parents looking after their children of under school-age[4]. The variable 'women's educational level' was also expected to be associated with health (see Blane, *et al.* 1996; Arber 1997; Williams *et al.* 1997), but did not show a statistically significant effect here for women, perhaps because husband's educational achievement had overshadowed the impact of women's own education (they were internally correlated).

Although it was expected that material resources would influence health (Rahkonen *et al.*, 1995; Arber, 1997), the composite variable of socio-economic status (SES) did not show a significant effect on the health indicators. This was the case even when the effects of its components such as car ownership and housing tenure on health were examined individually (see Chapter 6).

Among the work-related set of variables (Group-2 in the theoretical model), three explanatory variables were found not to have any statistically significant effect upon woman's health indicators[5], namely; 'respondent's income', 'employment status' (full time/part time) and 'overall working years'. This result is unexpected since, in the case of women's own 'income', research findings (see e.g. Bartley *et al.* 1992) and hypotheses (Hibbard and Pope, 1991; Dennerstein, 1995) suggest that increased income improves psychological well-being among women. The regression analyses in chapter 7 revealed that the significant effect of women's income on health was diminished by the inclusion of self-esteem, that is, perhaps the effect of income is because of the raised self-esteem with which it is associated. I found that

[4] The rest were taken care of by other relatives, or husbands, or spent time with the mother at her work-place.

the respondents' own income on average was relatively lower than their husband's income (as is also the case with women's income in the West (Annandale, 1998; Arber and Cooper, 2000), and perhaps it is eventually the husband's income which, in the case of physical health, has an effect, if any, on providing the financial resources to maintain good health for family members in general and for the wife in particular. (This effect is, in fact, revealed in one of the final regression models, that concerning 'health-state for her age'.) Although there is no formal inequality between the sexes in terms of the salaries for equal/same jobs, women in Iran as in many other countries, due to actual job-segregation policies, are concentrated in low paid female jobs such as teaching, nursing, office work and so on (as seen in Table 5-8), mainly in the service sector (concerning the West see e.g. Walby, 1997). Among the reasons why the working women in our sample chose to be in paid work, 25.5 per cent of the respondents (the largest percentage of responses) said they worked to support the family financially. This evidence supports Doyal (1995) in recognising financial need and personal preference, as well as domestic circumstances and job opportunities as motivating women to take paid work. However, among working women, 14.4 per cent of those who were inclined to give up working (again the largest percentage) said the reason was dissatisfaction with their salary (low salary).

[5] This is while variables from the other two main groups (1 and 3) were controlled for.

Table 8-2. The summary of the results of all final regression models concerning Group-2 explanatory variables in relation to the 9 dependent health variables

	GHQ	Malaise	General sympt.	Last Month sympt.	Hlth last year	Hlth . for age	Long-standing illness	Limiting long-standing illness	Acute illn.
Working/non-working				+					
Group-2									
Occupational class (her)						+			
Respondent's income									
Psycho-social job-conditions					+			+	
Physical job-cond.	+	+		+					+
Psycho-social house-work conditions	+	+	+		+	+	+	+	
Physical house-work conditions		+	+		+	+			
Employment status (full-time/part-time)									
Place of work (at home/out of home)	+			+					
Respondent's overall working years									

Employment status with regard to part-time and full-time working hours is not significantly associated with any of the health indicators when other variables are controlled, as Arber (1990) finds in the case of health status. Part-time work has often but not always (see Annandale and Hunt, 2000) been found to be associated with better physical health and/or malaise (Elliot and Huppert, 1991; Bartley *et al.* 1992). Arber (1997:775) refers to research which finds the health of women who worked part-time to be somewhat better than women working full-time and 'much better than full-time housewives'. In fact, in the bivariate results we found that full-timers experienced significantly higher role-conflict than part-timers (see chapter 5). Therefore, the non-significance of this variable following the multivariate analyses is unexpected. I suspect that the effect of this variable has been overshadowed by those of other variables, such as working conditions, in the regression model. For example, a positively

perceived working condition, either physical or psycho-social, could perhaps diminish the harshness of longer working hours for women in full-time jobs. Only 7.5 per cent of working women who said they would like to give up paid work were dissatisfied with working hours (see Table 5-11). 'Respondent's overall working years' was also non-significantly associated with respondent's health and this was evidently due to its association with 'respondent's age'.

Moving to the third group of explanatory variables in the theoretical model, that is social/life context variables, we found that three variables, namely 'job-satisfaction', 'health behaviour', and the 'scale on the division of housework and child-care responsibilities' did not significantly affect any of the health indicators.

Table 8-3. The summary of the results of all final regression models concerning Group-3 explanatory variables in relation to the 9 dependent health variables

	GHQ	Malaise	General sympt.	Last month sympt.	Hlth last year	Hlth . for age	Long-standing illness	Limiting long-standing illness	Acute illn.
Working/non-working				+					
Group-3									
Stress	+	+	+	+	+	+	+	+	+
Self-esteem	+				+	+			
Soc. supp.: No of close friends	+						+	+	
No of people who help when ill		+							
Economic independence	+								
*Satisfaction :job									
Satisfaction :housewifery							+		+
Satisfaction :marital				+		+			
Satisfaction : general	+	+							
Health behaviour									
Division of housework responsibilities					+				
Marital support/ companionship	+	+		+					
Division of housework & child-care									
*role-conflict		+			+	+			
*husband's agreement									+

'Job-satisfaction', among the variables concerning the respondent's work-related duties, did not significantly affect health. As stressed by Hibbard and Pope (1993:217), 'a clear assessment of the effect of multiple roles on health must investigate the inherent characteristics of roles and how those roles are experienced: the privileges, disadvantages and stresses, as well as satisfactions'. Evidence of such associations is, however, not found here for job-satisfaction, perhaps due to the relatively stronger empirical significance of women's other role performance, e.g. satisfaction from housewifery.

'Health behaviour' - which was a scale measuring women's commitment towards maintaining their health by taking some preventative actions such as taking physical activitiy, controlling their weight, being cautious about unplanned pregnancies, and taking actions such as visiting GPs/gynaecologists for gynaecological tests, check-ups and so on - did not show any significant effect. This result has probably been affected by the stronger intervening effect of other factors such as women's educational level and material resources.

I expected the variable 'division of housework *and* child-care responsibilities' to be associated with health (like the variable 'housework division of responsibilities' which *is* statistically significantly associated with one of the health indicators) but there is not enough evidence on this association (p = ns).

Factors which significantly affect women's health

Looking at the significant effects of the individual variables on health indicators, we realise that among socio-demographic variables (Group-1), none were associated with any of the indicators of mental health. They were, however, not surprisingly, associated with the physical dimension of health. 'Age' was quite predictably associated with physical health indicators. 'Age at first marriage' was also significantly associated with health for women who had a lower age at first pregnancy. Waldron *et al.* (1998:218) refer to the 'age-related parental role strain hypothesis', which proposes that 'the ages of a woman's children and the woman's age when she has her first child can influence the extent of role strain, and thus can influence whether the parental role has harmful effects on health'. By including this variable, I actually intended to examine the harmful long-term effects that early pregnancy could have for women who became pregnant at young ages following marriage at too young ages (e.g. below the age

of 18), which still occurs in Iran. As the evidence of this research suggests, this socio-cultural phenomenon, particular to the countries of the Middle-East such as Iran, contributes to the prevalence of chronic illnesses among women.

Arber (1997) writes of educational qualifications being associated with variations in health. However, as mentioned earlier, in this study women's educational level was overshadowed by their husbands' educational achievement. Therefore, for two measurements of physical health husband's educational level showed statistically significant effects (the higher the educational level, the better the wife's health status). This could be either an affluence effect, in that higher education in men is associated with higher income, better material resources, and therefore a better quality of living for family members, and/or because of the effect of education itself in increasing the individual's general health awareness and knowledge. Husband's income was statistically associated with one of the physical health indicators (i.e. health for age) which could also be interpreted as an affluence effect.

Among socio-demographic variables, another variable which showed an expected result was 'the number of children' (see also Dennerstein, 1995). A greater number of children is associated with worse physical health for the mother. Waldron *et al.* (1998) have already alerted us of the harmful effects of full-time employment for women with many children, but here the result concerns both working and non-working mothers, since working status is controlled for in the regression model. A greater number of children could mean work overload and more demands on the mother, threatening her health, particularly for those in more disadvantaged socio-economic groups. This might also reflect the age effect, that is, the older the mother, the more children she has and hence the worse her physical health.

Having a caring responsibility was remarkably and significantly associated with women's physical health. This is in line with findings from Gove and Hughes (1979:144) who, referring to women's carer role, state that, 'it is an excess of role demands that partially accounts for why women have higher rates of physical illness'.

Pregnancy at the time of the interview was included as an explanatory variable to control for its effect on other health indicators. It did not show any significance except for acute illness, which would be expected.

'Husband's occupational class' as well as his 'income' - referred to earlier – had a predictably significant effect on women's physical health in that the higher the husband's class, the better a woman's health. This seems to be in accordance with research evidence on health inequalities in terms of social class in the West (Hart, 1985; Elliot and Huppert, 1991; Macintyre, 1997). There is an ongoing debate on whose occupation (woman's own as in the individualistic approach, or that of the head of household, as in the conventional approach) to use when assessing women's occupational social class (see Matthews *et al*, 1999; Bartley *et al*, 1999; Annandale and Hunt, 2000; Arber and Cooper, 2000). In this research, both husband's and women's own occupational class are examined and both have shown to have significant effects on women's health.

The utilisation of 'paid help' was associated with the presence of limiting long-standing illness, which is seemingly because those who are suffering from a limiting health problem are in greater need of care, and perhaps paid help.

Respondent's own occupational class in the case of women in paid work was associated with their physical health status (health for age) so that higher occupational classes reported better health. This is when their husband's occupational class was controlled for. Arber and Cooper's (2000:139) analysis for Britain also showed that social class (based on the individual's own occupation) is closely associated with self-assessed health, so that those whose 'current or last job is in lower class occupations are most likely to report poor health'.

'Psycho-social job-conditions' and 'physical (environmental) job-conditions', among other work-related variables, showed statistically significant effects on both women's physical and mental health, which confirms earlier research on the association of working conditions and health (Hibbard and Pope, 1987, Sorensen *et al.*, 1996). Women in paid work who perceived better psycho-social job-conditions, reported better *physical* health and those with better perceived physical conditions scored better on *physical* as well as *mental* health indicators. This result, which concerns women in paid work, is important because it reminds us of the positive role of paid work in improving both women's mental and their physical well-being, bearing in mind that as Doyal (1995: 155) stresses, the key question is not 'whether paid work in general is good for all women, but rather what the conditions are under which specific types of work will be harmful or beneficial for particular women in particular circumstances'. This result is not surprising when we also find another relevant work-related variable i.e. 'place of paid work' (at home/out of home) significantly affects health. As Ghavamshahidi (1995) notes, working at home is usually associated with poorer physical job-conditions such as inadequate light, damp, and unsafe equipment particularly in the suburbs, which can understandably lead to poorer health status. In this research we found evidence of an

association of this variable with both physical and mental health indicators, so that the change in women's work status from working at home to working out of home was significantly associated with better health.

On the other hand, the physical and psycho-social conditions of unpaid work, that is housewifery and motherhood duties, have been shown to have significant effects on both women's physical and their mental health, and in even greater magnitudes (see chapter 7). The better women's perceived conditions of domestic work are, the better their health and well-being. Studying role-occupancy and role-quality and their consequences for health also requires an awareness of and interest in women's unpaid work conditions and their subjective perception of them, which apparently can have a significant effect on their health. Hunt and Annandale (1993:636) have highlighted the shortage of 'research which considers the conditions and the psycho-social context of both paid and domestic work .... because so little attention has been given to domestic work as 'real' work until recently, there is as yet no clear consensus about how best to represent the conditions (in the broadest sense) of domestic labour...'. How rewarding, varied, interesting, attractive and socially valued women perceive their work to be evidently has an impact on their physical and mental health. Popay and Bartley (1989:94) remark that 'material conditions in which people live and work will have an effect, either positive or negative, on their experience of health and illness'. They add, 'it is important that researchers take into account the material and psycho-social conditions of women's unpaid labour at home' (Ibid.:94). The results of the multivariate analyses on physical and psycho-social paid and unpaid work conditions here also support Bartley *et al.* 's (1992:313) finding: 'domestic conditions appear to have an effect on women's health equal or

greater than employment status, depending on the health measure used'. We need to bear in mind, however, that, since this is cross-sectional and not longitudinal research, we can not establish firm causal directions for the work-health relationship.

Moving on to the third group of explanatory variables, that is the social/life context variables, as discussed earlier, we find elements of the two theoretical approaches, 'positive' and 'negative', towards women's multiple roles, such as stress and role-conflict (from the negative approach) and self-esteem, social support indicators, economic independence and satisfaction (from the positive approach) significantly affecting health indicators as expected (see chapter 2 for the relevant literature).

As well as the above mentioned variables, there were several others which were expected to contribute to the overall process of the relationship between socio-demographic factors, working role, and health outcome variables. Among these were variables concerning the respondent's relationship with her husband, such as marital satisfaction, husband's participation in housework and child-care responsibilities; support and companionship from husband; and his agreement with his wife's paid work, which were all statistically significantly associated with health indicators in this survey. This research evidence suggests that *husband's attitudes* (consent) towards respondent's paid work; his emotional support and companionship; and the satisfaction the respondent experiences from their marital life together and the degree of the husband's participation in housework remarkably and significantly affect several of women's physical health indicators and, in the case of

'husband's support', her mental health indicators as well. This finding needs to be emphasised, since in the existing research it has not been given a lot of attention.

The health of Iranian women

All in all, the results of this research suggest that working conditions, whether in paid or in unpaid work *do* affect both mental and physical health, as do the social/life context variables which mediate in the relationship between work and health. The results of this research are more or less in accordance with the research findings in the West, in terms of the significance and directions of the effects of many explanatory variables. However, when the overall impact of paid work was examined controlling for various life/social context (mechanism) variables, there was insufficient evidence that the paid work role significantly improves health outcomes for working women compared with non-working women, as is usually suggested by research in West. Recalling Lee (1998:100), 'the majority of research examining the relationships between women's paid work and their physical and mental health is cross-sectional in nature, making it difficult to draw causal inferences'. However, she also reminds us that 'despite this important caveat, longitudinal research does indicate that, in general, paid employment has a beneficial effect on women's physical and mental health' (Ibid. :100).

Therefore, apart from the suggestion of a counterbalancing effect discussed earlier, the dissimilar evidence in this research, i.e. the non-significance of the variable working/non-working for women in my sample must perhaps be partly explained by reference to the socio-cultural characteristics of Iranian society. For example, the importance and magnitude of husbands' influence on women's health, which is reflected in the statistically significant

effects of variables such as marital satisfaction, marital support and companionship, husband's agreement with woman's paid work, equitable division of housework responsibilities, and even husband's educational achievement alongside (and after controlling for) all other important factors which more directly pertain to women's work (see Tables 8-1 and 8-2). Seemingly, women's lives in Iran are still highly influenced by the behaviour and attitudes of men around them. Whether it is a *father* who is in control of his daughter's further education or prearranged marriage[6], or a *husband* who consents to his wife's higher education, or to her taking paid work (particularly when husbands have the legal right to prevent their wives from working at paid work without their consent)[7]. It is not therefore surprising when Moti', an Iranian female sociologist, warns that 'the feminist movement in Iran must know that without the assistance and cooperation of men it cannot succeed' (Moti', 1997:25). This situation can influence women's chances of taking up paid work by making it very challenging and difficult. Simon (1995:191) points to an interesting conclusion, which is perhaps relevant also to Iranian society with its strong gender-role ideology. She writes:

> I also found that having an employed wife was associated with negative self-evaluations and emotions for a sub-group of husbands. For these men, having an employed wife was an indication to themselves and others (e.g. their wives) that they were inadequate providers.

[6] By pre-arranged marriage I mean marriages with the girl's parents' decision and approval of the proposing person, who is not necessarily consented to or approved by the girl herself. Increasingly, though, girls are being allowed to take their own decisions. However, since male/female social and friendship relationships before marriage are not culturally accepted or common in Iran, the decisions on whom to marry are still highly reliant on the parents' opinion and recommendations.

[7] According to article 18 of the Family Protection Law in Iran, 'a husband can with permission from the civil court prohibit his wife from taking any job which he finds to be against the interests of family or his reputation. Also a wife can ask for such permission from the civil courts' (Mehri, 1999:13).

The research evidence here suggests the important role of husband's support and companionship in enhancing women's role-performances, since their supportive attitude has been shown to affect women's mental as well as physical health significantly. The increasing number of female students in higher education institutions in Iran and the growing number of educational qualifications obtained by women raises their chances of integration into jobs with higher status and better job-conditions (a pattern of change very similar to what is apparently happening in Britain). As Annandale and Hunt (2000:8) point, 'there is evidence that women have made more rapid gains than men in educational terms in recent years'. However in Iran, women's opportunities for entering paid work and securing higher level jobs are still highly determined by their relationships with their male relatives, either their fathers or husbands. Sometimes simply the disagreement of her husband can bar a woman from starting work or can cause her to give up work. Additional difficulties and barriers in the labour market at the wider societal level, such as employers' preferences for male employees and formal or informal job-segregation policies, also practically limit women's socio-economic participation (see chapter 3).

The feeling of guilt about not being proper mothers because of paid work was also among the reasons why some working women in this research were inclined to give up working. Those who continue to work in spite of their husband's disagreement are open to the risks of mental and physical health problems by experiencing role-conflict and increased stress levels (see chapter 5 and 6). Therefore, although even in the West there is 'a clear division of labour within the household with men participating mainly in outdoor work and women taking

primary responsibility for child-care and indoor activities' (Baxter and Western, 1998:101) and women feel a strong sense of moral obligation or personal responsibility towards their role as mothers (Popay and Bartley, 1989), it seems that for Iranian women, domestic duties and their traditional roles as wives and mothers are taken even more seriously. Even in their own views, their traditional roles (of wife and mother) come before their paid work role. This is reflected in the greater significance and relative importance of psycho-social housework conditions compared with psycho-social job-conditions for their health (see Table 8-2).

With respect to the influence of cultural and traditional beliefs on the magnitude of women's participation in the non-agricultural labour force, Hadiyan and Heidar-poor (1999:27) attribute low rates of women's participation in countries such as Iran, Turkey, and Pakistan and the Arab world, to women's own avoidance and deliberate isolation from social activities, as well as men's tendency to prohibit women from such activities to safeguard the household's good reputation and honour. This does not seem to be the case in Tehran as much as in the rest of the country. However, we can speculate that women's paid work out of the home is not yet very welcome in families with more traditional tendencies. Rajaram and Rashidi's (1999:51) opinion concerning women in Muslim countries seems to be applicable to women in Iran; 'women, particularly older women are less likely to work outside of the home due to traditional cultural norms and the high value placed on the role of women as mother and homemaker'.

The extra weight women themselves give to their traditional roles and to being devoted housewives, and the higher significance and importance this seems to have for their health

compared with paid work (reflected in the greater significance of housework psycho-social conditions and satisfaction with housewifery for their health), seems to be something particular in the work-health relationship among Iranian women. As seen in Table 5-11 (chapter 5), among the most frequently reported reasons given by women for their inclination to give up working (after dissatisfaction with low income, 14.4 per cent) was that work hinders proper childcare (motherhood) (14.3 per cent) and proper housewifery (10.6 per cent). On the other hand, as seen in Table 5-12, among non-working women too the most common reasons they were not inclined to take a job (following the highest percentage for husband's disagreement, at 22.4 per cent) pertained to 'giving priority to housewifery and child-care' at 18.3 and 16.0 per cent respectively. This is perhaps a confirmation of what Higgins (1985:491), referring to the question of competing ideologies of 'sex roles', believes; that 'most Iranian women do not share the definition of equality or the vision of an ideal society, on which Western feminism is based' (see chapter 3). She points out that in Iranian society 'equality of the sexes should be sought within the framework of a sex-segregated society' (Ibid:491). For the bulk of Iranian women, Higgins (1985:491) appropriately suggests 'the most meaningful model for the future society is based on the Islamic ideology reflected in the *Shari'a* (Islamic law), in which men and women are viewed as being equal before God, but having somewhat different physical, mental and emotional qualities, somewhat different responsibilities in the family and society, and therefore somewhat different rights and prerogatives'. Women in my sample also seem to have prioritised housewifery and motherhood as their natural and prime responsibilities, which evidently influences their health and well-being. Moti' (1997), an Iranian sociologist, has also criticised the spread of Western-

influenced feminism in Iran, by rejecting ideas which denigrate of housewifery and domestic occupation of women as a means of their emancipation (see chapter 3).

The fact that family relationships in Iran are still influenced by the more ancient form of extended families with women who do not have access to public or private nurseries largely enjoying support for child-care from their parents and close relatives (even when they are not actually living with their parents), seems to be reflected in the evidence that being in full-time or part-time work does not make a significant difference to women's health as it would usually, but not necessarily always (see Arber, 1990), be expected to do in the West (Waldron, 1980; Hunt and Annandale, 1993).

Therefore, the rewards associated with paid work in the West although evidently experienced by and large by women in this research too, cannot be achieved and enjoyed as broadly and easily. Working women's health status resembles non-working women's health status in Tehran as the research evidence here suggests, which would however mean that being in paid work is not associated with worse health for women even if it is not associated with better health either, as initially expected.

The religious and cultural traditional values which prohibit women (and men) from alcohol consumption and/or smoking cigarettes must have had an impact with respect to dissimilarities between women's health patterns in the West and in Iran. Some believe that women's growing labour force participation in the West might contribute to women adopting 'male life styles' (such as smoking and alcohol consumption) which will therefore result in

their suffering from the disadvantages typical of men (Martikainen, 1995, referring to the 'convergence hypothesis'), which apparently has negative effects on their life expectancy (see Annandale, 1998 referring to Kane, 1994). A relatively low percentage of Iranian women smoke, in our sample just 6.2 per cent (6.5 per cent working and 5.6 per cent non-working). There were no significant differences in smoking between working and non-working women (Chi-square = .29, p= .590).

Unlike in the West, where the health effects of any participation in the paid labour force by women compared with being a housewife have long been questioned and investigated (Gove and Tudor, 1973; Waldron, 1980; Nathanson, 1980; War and Parry, 1982; Miles, 1991; Hunt and Annandale, 1993; Radley, 1994, Lee, 1998), in Iran there has not yet been much scientific concern about the health implications of women's engagement in paid work. However, for those critical of or sceptical about women's paid work role and its consequences, the research evidence here can at least to some extent provide reassurance about the lack of harm of such role-performances. Moreover it can cautiously suggest that when women are able to engage in jobs which guarantee medium to good working physical and psycho-social conditions, there are chances that their health will even benefit from working rather than deteriorate. Apparently, what Verbrugge (1983b: 26) concludes concerning women in industrialised countries; that 'there is no evidence that multiple roles harm women's health...' seems to be the case also in Iran. For this to occur, however, there is a need for women to feel confident about societal support, as well as support from their spouses and other family members, in order to enter the public sphere of socio-economic participation alongside their private sphere activities at home.

Iranian society is gradually and increasingly moving towards higher degrees of women's involvement in different aspects of social life by providing opportunities for higher education and the socio-political participation of women. However, there seems still to be a need to provide some reassurance in terms of micro-level cultural relationships so that women's paid work is not seen as deviance from the realisation and fulfillment of housewifery and motherhood for women, either by women themselves or by people around them.

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Appendix A.
The Working Women's Questionnaire

Notes:
1. Since the questionnaire was originally in Persian the pagination of this translation is not exactly as in the original copy.
2. Brackets '[ ]' are used here instead of the blank squares in front of the sets of responses as in the original copy.
3. To save on words and space in this appendix, the repetitive response sets for some of the questions are omitted, and in places '...' can be seen instead.
4. The non-working women's questionnaire, which has almost the same content as this one, is not provided here. However the few questions, which were exclusive to non-working women are added at the end of this appendix.

****

Medical/sociological Research
Women's health, their work and their responsibilities
(Working women's questionnaire)

Dear respondent,
We would like to thank you very much for agreeing to participate in this research. This is purely scientific and academic research on women's health in relation to their socio-economic circumstances. This sort of research is relatively new to our country. Through this questionnaire we are asking you and hundreds of other working and non-working women of different age groups in Tehran questions about health, work conditions and their household situation.

Each one of you has been chosen through scientific sampling methods. Therefore, there is no need for your name and address, and any answers you give us will be dealt with as confidential and will not be disclosed to any other person or organization other than the researchers. The sincere and accurate answers which are given by you and other participants in this study will give us a better insight into women's lives and the factors affecting their health in our society. We hope, with your collaboration, that this research will positively influence women's life circumstances and their health. We thank you again for your time and participation in this research.

Shirin Ahmad-Nia
In charge of the research project

Questionnaire No: ...
Completed by: The respondent 1 [ ] The interviewer 2 [ ]
Interviewer's name: ...

Date of completion: .../.../.19..
Place of completion:
Home 1 [ ] Work-place 2 [ ] Other 3 [ ] ...
Date due to return the questionnaire to the interviewer: .../.../.19..

General characteristics for inclusion of respondents in this research:

- Being married (not single, divorced or widowed);
- Aged between 18 and 60;
- Having at least one child (who lives with the respondent);
- Not being a full time student;
- If retired, they should be at least one year beyond their retirement.

If any of the above mentioned conditions do not apply to you, please inform the interviewer before completing the questionnaire.

How to complete the questionnaire:
Completing this questionnaire is very easy and will take much less of your time than may seem at first. In most cases, you need only to put a cross in one of the squares next to your chosen response. In some cases, you need only to write a number. Only a few of the questions ask for a brief description. We would like you to consider and answer all of the questions which apply to you. If there is any ambiguity, please write the number of the question down to ask for the interviewer's clarification and complete your answer. In case you need more information you can contact tel. no.: .... for help.

We would like to begin with some information about your personal characteristics.

1- Would you please tell us how old you are now? ... years

2- Your age at (first) marriage? ... years

3- Your age at first pregnancy? ... years

4- Are you pregnant now?
1- Yes [ ] 2- No [ ] 3- Don't know [ ]

5- your educational level? ....

6-Have you ever had any job other than your present job?
Yes 1 [ ] No 2 [ ] turn to q.7

6a. What was your previous job(s)?
1- First previous job: ...
2- Second previous job: ...

7- Have you ever had to leave your job temporarily or permanently because of a health problem?

Yes 1 [ ] No 2 [ ] turn to q.8

7a. What was your problem, and what was your job? ...

8- Would you please say how many years you have worked over all? ... years

9-What is your current job? (Please indicate your complete job title) ...

10- Could you please tell us what your duties (job-responsibilities) are? ...

11- Would you please tell us where you work?
1- Out of home [ ] 2-At home [ ]
3- Both out and at home [ ]

12- How long have you been in your current job? ... years

13- Please place your job into one of the following categories :
[ ] Employee in public sector 1
[ ] Employee in private sector 2
[ ] Self-employed 3 (We mean those who are neither employed nor employer to anyone else either)
[ ] Employer 4 (we mean those who employ others. Those who are themselves employed are not considered 'employers')
[ ] Family worker 5 (we mean those who work unpaid for their own family-members)
[ ] Don't know 6

14- Is your job, full-time or part-time?
1- Part-time [ ] 2-Full-time [ ]

14a. How many hours a month do you work on average? ... hours

14b. Do you ever work overtime ?
1-Yes at times [ ] 2-Yes most of the times [ ]
3- No [ ]

15- Do you do any job other than the job you just told us about?
1- Yes [ ] 2- No, turn to q.16

15a. What is your second job? ...

15b. How many hours a month do you spend on this job? ... hours

16- Are you covered by any kind of retirement scheme(insurance)?
1- Yes [ ] 2- No [ ]

17- (Only for employees): During sick-absences is your salary still paid to you?
1- Yes [ ] 2- No [ ]

18- Do you have medical insurance cover due to your own job or that of your husband?

1- Yes, due to my own job [ ] 2- Yes, due to my husband's job [ ] 3- No [ ] turn to q.20

18a. If yes, which insurance?

1- Tamin Edjtemai mostly(private) [ ]
2- Khadamate Darmani(public) [ ]
3-Other(specify) [ ] ...

19- How satisfied are you with your medical insurance coverage?

1- Completely satisfied [ ] 2- Satisfied [ ]
3- To some extent [ ] 4-dissatisfied [ ] 5- very dissatisfied [ ] 6- Do not use [ ]

* Next we turn to consider your health status and health background.

20- Would you say that for someone of your age , your own health is generally?

[ ] Excellent 1 [ ] Good 2
[ ] Fair 3 [ ] Poor 4

21- Over the last year, would you say your health has on the whole been?

[ ] Excellent 1 [ ] Good 2
[ ] Fair 3 [ ] Poor 4

22- Now I'd like you to think about the 2 weeks ending yesterday. During those weeks, did you have to cut down on any of the things you usually do (at home/at work or in leisure) because of illness or injury?

1- Yes [ ] 2- No [ ] to q23

22a. What was the matter with you? ...

22b. How many days in all did it last? ... days

23- Do you have any long-standing illness, disability or infirmity? By long-standing we mean anything that has troubled you over a period of time or that is likely to affect you over a period of time?

1- Yes [ ] 2- No [ ] turn to q.24

23a. Would you please give the name(s) of the condition(s) or problems you are suffering from in the following table. In the relevant the places please answer the questions about how intense it/they is/are and how long have you been suffering from it/them by putting a cross in the boxes and writing the relevant number. If you know the medical name(s) used by medical practitioners, please give it/them.

Name of the illness	Intensity/severity	Length of time suffered
Example:	1- Severe [ ] 2- Relatively severe[X] 3- Mild [ ]	.2. years and 6. months
1- ...	1- Severe [ ] 2- Relatively severe[ ] 3- Mild [ ]	... years and ... months
2- ...	...	
.....	.....	.....
7- ...	1- Severe [ ] 2- Relatively severe[ ] 3- Mild [ ]	... years and ... months

23b. Have any of these illnesses restricted your daily activities in any way?

1- Yes [ ] 2- No [ ]

24- If you are expecting problems, e.g. if you are seriously ill and need to stay in bed for a few days, is there anybody who you could turn to for help?

1- Yes[ ]2- No [ ] turn to q.25

24a. In these circumstances, who would help you?

[ ] Mother or father 1 [ ] Sister or brother 2
[ ] Children 3 [ ] Husband 4
[ ] Friend or neighbour 5 [ ] Other relatives 6
[ ] Others, please specify 7...

25- Here, we show you a list of common illnesses. By ticking in the boxes, please tell us if you have suffered from any of these in the past only, or still are suffering from them:

Illness	Treated	Not treated	Illness	Treated	Not treated
1- Asthma	[ ]	[ ]	2- Diabetes	[ ]	[ ]
3- Stomach/digestive problem	[ ]	[ ]	3- Piles	[ ]	[ ]
5- Liver problem	[ ]	[ ]	4- Cancers	[ ]	[ ]
7- Rheumatism	[ ]	[ ]	8- Varicose veins	[ ]	[ ]
9- Hypertension	[ ]	[ ]	10- Stroke	[ ]	[ ]
11- Migraine	[ ]	[ ]	12- Epilepsy	[ ]	[ ]
13- Heart problem	[ ]	[ ]	14- Thyroid	[ ]	[ ]
15- Neck-ache	[ ]	[ ]	16- Skin problem	[ ]	[ ]
17- Cataracts	[ ]	[ ]	18- Malaria	[ ]	[ ]
19 Gynecological	[ ]	[ ]	20- Back-ache	[ ]	[ ]
21- Tuberculosis	[ ]	[ ]	22- Nerves	[ ]	[ ]
23- Kidney problem	[ ]	[ ]	24- chest problem	[ ]	[ ]

25a. If you have had or have any other illnesses, please list them here: ...

26- Have you ever had any abortions?

1- Yes [ ] 2- No [ ]

27- Could you indicate if you have had any of the health problems listed below either "during last month" or "generally"? On each item, you can cross just in one of the squares..

Item	During last month	Generally
1- Headaches	[ ]	[ ]
2- Difficulty sleeping	[ ]	[ ]
3- Constipation	[ ]	[ ]
4- Sight problem	[ ]	[ ]
5- Cold & flu	[ ]	[ ]
6- Leg problem	[ ]	[ ]
7- Always feeling tired	[ ]	[ ]
8- Difficulty concentrating	[ ]	[ ]
9- Palpitation or breathlessness	[ ]	[ ]
10- Problem periods or menopause	[ ]	[ ]
11- Catarrh/Sinus	[ ]	[ ]
12- Fainting or dizziness	[ ]	[ ]
13- Allergy	[ ]	[ ]
14- Trembling hands	[ ]	[ ]
15- Diarrhea	[ ]	[ ]
16- Sore throat	[ ]	[ ]
17- Trouble with teeth or gums	[ ]	[ ]
18- Trouble with ears	[ ]	[ ]
19- Worrying over every little thing	[ ]	[ ]

28- How often do you feel that you are under so much strain that your health is likely to suffer?

1- Always [ ] 2- Often [ ] 3- Sometimes [ ] 4- Never [ ]

29- How often do you feel bored?

1- Always [ ] 2- Often [ ] 3- Sometimes [ ] 4- Never [ ]

30- How often do you feel lonely?

1- Always [ ] 2- Often [ ] 3- Sometimes [ ] 4- Never [ ]

31- Do you like to be alone at times?

1- Yes, often [ ] 2- Yes, just sometimes [ ] 3- Never [ ]

32- Have you visited your doctor or gone to hospital for any illnesses over the last two weeks? (Excluding visits for pregnancy or accompanying others including children).

1- Yes [ ] 2- No [ ] turn to q. 33

32a. If yes, how many times during the last two weeks? ... times

32b. Please tell us what the problem was for the visit(s):

1- First visit:... 2- Second visit: ... 2- Third visit ...

33- Have you had any in-patient stays at hospital over the last year?

1- Yes [ ] 2- No [ ] turn to q.34

33a. If yes, what was the problem?

1- First time ... 2- Second time ...

34- Do you smoke? 1- Yes [ ] 2- No [ ]

34a. If yes, how many cigarettes in a week?

35- Do you think you have enough sleep? 1- Yes [ ] 2- No [ ]

In this section, we are going to ask you about your general health:

36- Please tell us how often you do each of the items listed below in terms of taking an action regularly, irregularly or nothing unless there is a problem and you have to do something about it. For example, about the first item - how often do you usually visit your gynecologist/GP for gynecological checkups - you can cross either "never", " irregularly" or " relatively regularly":

Item	Never	Irregularly	Relatively regularly
1-Visit a gynecologist/ GP for gynecological checkups	[ ]	[ ]	[ ]
2-Practicing contraception (any method concerning yourself/spouse)	[ ]	[ ]	[ ]
3-Visit dentist	[ ]	[ ]	[ ]
4-Visit optician	[ ]	[ ]	[ ]
5-Weighing yourself	[ ]	[ ]	[ ]
6-Doing any kind of physical activity/sport	[ ]	[ ]	[ ]

Here, we are going to ask you general questions about your household.

37- Could you please tell us how many people are there in your household including yourself? ... people

38- The following table lists family members' age and health state. There is a question on your husband first, followed by questions on your children's sex, age and health. Then, in the last three rows, we ask also about other people who may be living with you permanently or most of the time, their relationship to you, age and health status.

People	Relation	Age	Health level
First	Husband	... years	1- Excellent [ ] 2-Good [ ] 3- Fair [ ] 4- Poor [ ]
1st child	1- Daughter [ ] 2- Son [ ]	... years	1- Excellent [ ] 2-Good [ ] 3- Fair [ ] 4- Poor [ ]
2nd child	1- Daughter [ ] 2- Son [ ]	... years	1- Excellent [ ] 2-Good [ ] 3- Fair [ ] 4- Poor [ ]
.....	.....	....	.....
9th child	1- Daughter [ ] 2- Son [ ]	... years	1- Excellent [ ] 2-Good [ ] 3- Fair [ ] 4- Poor [ ]
Others:			
10th person	...	... years	1- Excellent [ ] 2-Good [ ] 3- Fair [ ] 4- Poor [ ]
11th person	...	... years	.....
12th person	...	... years	.....

39- Please tell us your husband's educational level? ...

40- Please tell us his current occupational status, matching with the following:

[ ] 1- Public sector employee
[ ] 2- Private sector employee]
[ ] 3- Self-employed
[ ] 4- Employer
[ ] 5- Family-worker
[ ] 6- Unemployed
[ ] 7- Student
[ ] 8- Retired
[ ] 9- Don't know

40a. (If your husband is working) what is his current job? Please specify exactly what his occupation is avoiding general titles (such as office-work, engineer, etc.)

40b If your husband is currently unemployed, please tell us what his most recent job was? ...

41- Please tell us what your father's (whether deceased or not) job is /was? ...

42- Are any of your children living away from you due to marriage, studying etc.?

1- Yes [ ] 2- No [ ]

42a. If yes, how many? ...

43- Have you ever lost a child (please include also cases of miscarriages or still-births)?

1- Yes [ ] 2- No [ ]

43a. If yes, please tell us how old they were.? ...

44- If you have a small child(under school age) where do you leave them while at work?

[ ] 1- No small child (please turn to q.45)
[ ] 2- with your parents/parent in-laws
[ ] 3- Public nursery
[ ] 4- Private nursery
[ ] 5- friends/neighbors
[ ] 6- other relatives
[ ] 7- with husband
[ ] 8- other: please specify ...

45- If you are in paid work, how easy do you find it to combine motherhood and work responsibilities?

1- absolutely easy [ ] 2- relatively easy [ ] 3-relatively difficult [ ]
4-absolutely difficult [ ]

46- Please tell us how many bedrooms are there in your home? ... rooms.

47- Could you please specify your house/accommodation in terms of the following items:

[ ] 1- Rented accommodation
[ ] 2- owned by you/your husband
[ ] 3- Owned by your parents/in-laws
[ ] 4- Accommodation(trough work)
[ ] 5- Other: please specify ...

48- Among your relatives, friends or neighbors is there anybody who is in need of your regular care. We mean those who for reasons such as old age, illness or disability need you to take care of them (either at your own place or elsewhere)?

[ ] 1- Yes, permanently [ ] 3- Yes, only at times
[ ] 2- Yes, most of the time [ ] 4- No

48a. If yes, where?

[ ]- At your place: how many people? ... [ ]- Elsewhere: how many? ...

49- Have you got anyone (apart from your husband) to help you with housework?

[ ] 1-Yes, paid help [ ] 3-No
[ ] 2-Yes, unpaid work (such as children's, relatives)

50-Do you have a driving license? 1- Yes [ ] 2- No [ ]

50-a. Do you or your husband have a car? 1- Yes [ ] 2- No [ ]

51- In this section we are going to ask you about <u>your paid work tasks and duties</u>. Please chose just one of the options in your answer:

Thinking of your job and all the duties you perform,
please tell us:

1- To what extent does your work make you feel happy and refreshed?

1- Not at all [ ] 2- Some [ ] 3- Pretty much [ ] 4- Absolutely [ ]

2- To what extent do you find it varied and interesting?

1- Not at all [ ] 2- Some [ ] 3- Pretty much [ ] 4- Absolutely [ ]

3- How much is it physically tiring?

...

4- How far do you find it monotonous and repetitive ?

...

5- How much do you think it would be positively influential towards your personal improvement and self-realization ?

6- How far do you find your job mentally tiring?

7-How far do you see your work duties as socially beneficial?

* Just a reminder: Please tell us, <u>thinking of your job and your duties:</u>

8- How far do you feel yourself to be in control of things?

1- Not at all [ ] 2- Some [ ] 3- Pretty much [ ] 4- Very much [ ]

9- How far you feel yourself under time-pressure and in rush.

...

10- How much stress and pressure do you cope in your work?

...

11- How much do you have to communicate with other people?

....

12- How boring does it all seem to you?

...

13- How much do you feel that other people in society value the work that you do?

...

52- Could you please tell us all in all, considering every aspect of the work you do, how far you are satisfied with your work?

1- Not at all [ ] 2- Some [ ] 3- Pretty much [ ] 4- Very much[ ]

53- Can you think of any times where your work has caused you any health problem?

1- Yes[ ]2- No [ ]3- Don't know [ ]

53a. If yes, what kind of problems have you had? ...

54- Could you please describe where you work in terms of the items which follow. For example, tell us about the place you work in, in terms of noise, temperature and so on. Based on your own assessment of how things are, please choose only one of the three responses here:

Item:	Good	Fair	Poor
1- Noise	[ ]	[ ]	[ ]
2-humidity	[ ]	[ ]	[ ]
3- air pollution	[ ]	[ ]	[ ]
4- temperature extremes	[ ]	[ ]	[ ]
5- crowding	[ ]	[ ]	[ ]
6- lighting level	[ ]	[ ]	[ ]
7- safety	[ ]	[ ]	[ ]
8- opportunities for breaks	[ ]	[ ]	[ ]

55- Could you please tell us how much your husband helps with the housework?

1-None [ ] 2- a little [ ] 3- some [ ] 4- quite a lot [ ] 5- a great deal [ ]

56- Here, please tell us how each of the following tasks are actually performed (by whom, apart from older children's help)

1- Washing up

1-Only you [ ] 2- Mostly you [ ] 3- Equally both [ ] 4-Mostly him [ ]
5-Only him [ ] 6- Neither [ ]

2- Cooking

1-Only you [ ] 2- Mostly you [ ] 3- Equally both [ ] 4-Mostly him [ ]
5-Only him [ ] 6- Neither [ ]

3- Laundry

1-Only you [ ] 2- Mostly you [ ] 3- Equally both [ ] 4-Mostly him [ ]
5-Only him [ ] 6- Neither [ ]

4- Cleaning

1-Only you [ ] 2- Mostly you [ ] 3- Equally both [ ] 4-Mostly him [ ]
5-Only him [ ] 6- Neither [ ]

5- Shopping (grocery)
1-Only you [ ] 2- Mostly you [ ] 3- Equally both [ ] 4-Mostly him [ ]
5-Only him [ ] 6- Neither [ ]

6- Repairs
1-Only you [ ] 2- Mostly you [ ] 3- Equally both [ ] 4-Mostly him [ ]
5-Only him [ ] 6- Neither [ ]

7- Bills (payments)
1-Only you [ ] 2- Mostly you [ ] 3- Equally both [ ] 4-Mostly him [ ]
5-Only him [ ] 6- Neither [ ]

8- Hospitality (Having guests)
1-Only you [ ] 2- Mostly you [ ] 3- Equally both [ ] 4-Mostly him [ ]
5-Only him [ ] 6- Neither [ ]

57- How much does your husband help with child-care?
1-None [ ] 2- A little [ ] 3- Some [ ] 4- Quite a lot [ ] 5- Very much [ ]

58- Please tell us who carries out each of the following childcare tasks?

1-(In the case of small children) taking to/ bringing back from school or nursery:
1-Only you [ ] 2- Mostly you [ ] 3- Equally both [ ] 4-Mostly him [ ]
5-Only him [ ] 6- Neither [ ] 7- Not applicable [ ]

2- Disciplining:
1-Only you [ ] 2- Mostly you [ ] 3- Equally both [ ] 4-Mostly him [ ]
5-Only him [ ] 6- Neither [ ]

3- Entertainment, leisure:
1-Only you [ ] 2- Mostly you [ ] 3- Equally both [ ] 4-Mostly him [ ]
5-Only him [ ] 6- Neither [ ]

4- Looking after when sick:
1-Only you [ ] 2- Mostly you [ ] 3- Equally both [ ] 4-Mostly him [ ]
5-Only him [ ] 6- Neither [ ]

5- Educational affairs (those in study):
1-Only you [ ] 2- Mostly you [ ] 3- Equally both [ ] 4-Mostly him [ ]
5-Only him [ ] 6- Neither [ ]

59- Please tell us to what degree your husband would help with housework?
1-None [ ] 2- Little [ ] 3- Some [ ] 4- Pretty much [ ] 5- Very much [ ]

60- Could you please tell us who in your family usually is in charge of taking decisions on important issues such as buying or selling a car, house, properties, and so on?
1-Only you [ ] 2- Mostly you [ ] 3- Equally both [ ] 4-Mostly him [ ]
5-Only him [ ] 6- Neither [ ]

61-Who is in charge of the income, savings, or any earnings which belong to you personally?

1-Only you [ ] 2- Mostly you [ ] 3- Equally both [ ] 4-Mostly him [ ]
5-Only him [ ] 6- Neither [ ]

62- Please tell us whose decision has been the most influential on the issue of how many children to have?

1-Only you [ ] 2- Mostly you [ ] 3- Equally both [ ] 4-Mostly him [ ]
5-Only him [ ] 6- Neither [ ]

63- Who is in charge for deciding with whom to socialise and visit?

1-Only you [ ] 2- Mostly you [ ] 3- Equally both [ ] 4-Mostly him [ ]
5-Only him [ ] 6- Neither [ ]

64- Here, we are going to repeat the series of earlier questions concerning your job, but this time they concern only your housework.
Please consider your housework duties and tell us, thinking of your housework:

1- To what extent does it make you feel happy and refreshed?

1- Not at all [ ] 2- Some [ ] 3- Pretty much [ ] 4- Very much[ ]

2- To what extent do you find it varied and interesting?

1- Not at all [ ] 2- Some [ ] 3- Pretty much [ ] 4- Very much[ ]

3- How far is it physically tiring?

.....

4- How far do you find it monotonous and repetitive ?

...

5- How far do you think it positively influence your personal development and self-realisation?

...

6- How far do you find it mentally tiring for you?

...

7- How far do you feel that your housework is a positive contribution towards society?

...

8- How far do you feel in control of things?

...

9- How far do you feel yourself under time-pressure and in a rush?.

10- How much stress and sense of pressure do you feel while performing your housework duties?

11- To what extent are there opportunities for you to communicate with other people during your housework?

12- How far do you find your housework boring?

13- How much valued in people's view do you think your housework is?

65 - Could you please tell us, all in all, considering every aspect of the housework you do, how far do you feel satisfied with it?

1- Not at all [ ] 2- Some [ ] 3- Pretty much [ ] 4- Very much[ ]

66 - Can you think of any occasions where your housework has caused you any health problem?

66a. If yes, what kind of problem(s)? ...

67- Now, could you please describe the place where you live and do your housework in terms of the items which follow. For example, tell us how your place is in terms of noise, in temperature and so on. Based on your own assessment of how the conditions are, please chose only one of the three responses here:

Item:	Good	Fair	Poor
1- Noise	[ ]	[ ]	[ ]
2-humidity	[ ]	[ ]	[ ]
3- air pollution	[ ]	[ ]	[ ]
4- temperature extremes	[ ]	[ ]	[ ]
5- crowding	[ ]	[ ]	[ ]
6- light	[ ]	[ ]	[ ]
7- safety	[ ]	[ ]	[ ]
8- pause- breaks	[ ]	[ ]	[ ]

68- Could you please tell us how much job security you feel concerning your main job, by job security we mean the possibility of continuing your work as long as you would like it to be continued?

1- Not at all [ ] 2- Little [ ] 3- Some [ ] 4- Pretty much [ ] 5- Very much [ ]

69- How much would you say there is chance for any promotion in your job? How likely is it, with your hard work and diligence over time, that you will be promoted in your job?

1- Not at all [ ] 2- Little [ ] 3- Some [ ] 4- Pretty much [ ] 5- Very much [ ]

70- If it was possible, how much would you like to give up your current job and just be a housewife?

1- Not at all [ ] 2- Little [ ] 3- Some [ ] 4- Pretty much [ ] 5- Very much [ ]

70a. If you are inclined to giving up working, which of the following would be the reason (s) for your decision? Please specify any item which is relevant.(by putting a cross in the box(es).

[ ] 1. Physical weakness or illness

[ ] 2. Lack of interest in current job
[ ] 3. Working hinders doing proper housework and housewife duties
[ ] 4. Working hinders doing proper motherhood duties
[ ] 5. Harshness of the job
[ ] 6. Dissatisfaction with work environment, colleagues or boss
[ ] 7. Dissatisfaction with income
[ ] 8. Dissatisfaction with working hours
[ ] 9. Too long a distance between workplace and home
[ ] 10. Husband's disagreement with your working
[ ] 11. Tired of working in general
[ ] 12. Other reasons: please specify: ...

71- Apart from serving the society, what would you say has been reason for your taking up working?
[ ] 1. To support the family financially/generate income
[ ] 2. Personally interested in current job
[ ] 3. Due to the qualification/educational degree/skills you have
[ ] 4. To maintain financial independence/avoid dependency
[ ] 5. Interested in enhancing social activities/ socializing with other people
[ ] 6. Other reasons. Please specify: ...

72- Would you please tell us how much your husband agrees with your having a job?
1-Strongly agrees [ ] 2-Agrees [ ] 3- Indifferent 4- disagrees[ ] 5- Strongly disagrees[ ]

73- Now, we are going to cite statements about what some people think of themselves. we would like you to say in each case how much would you say the statement is true for you, i.e. if it was told about you how much would you agree or disagree with it?
1- I feel that I am a person of worth, at least on an equal plane with others.
1-Strongly agree [ ] 2-agree [ ] 3- disagree[ ] 4- Strongly disagree[ ]
2- I feel that I have a number of good qualities.
1-Strongly agree [ ] 2-agree [ ] 3- disagree[ ] 4- Strongly disagree[ ]
3- All in all, I am inclined to feel that I am a failure.
....
4- I am able to do things as well as most other people.
....
5- I feel I do not have much to be proud of.
...
6- I take a positive attitude toward myself.

7- On the whole, I am satisfied with myself.

8- I wish I could have more respect for myself.

9- I certainly feel useless at times.

10- At times I think I am no good at all

74- Here we want you to think about your family and relatives. By family and relatives we mean both those who live with you and your other relatives. In the times when you really

need help, for example when you need some money, how much can you count on family and relatives?

1- Not at all [ ] 2- Little [ ] 3- Some [ ] 4- Pretty much [ ] 5- Very much [ ]

74a. How much would your friends help in such cases?

1- Not at all [ ] 2- Little [ ] 3- Some [ ] 4- Pretty much [ ] 5- Very much [ ]

75- Could you tell us how many friends you have, by friend we mean anybody whom you would like to see and have a chat with? ... person(s) (if you can not think of anybody, please turn to q. no 95)

75a. Could you please tell us how many of them are close friends, by close friend we mean anybody you could visit at any time you liked and could spend a lot of time with ? ... person(s)

75b. Could you please tell us, among those you mentioned as your close friends, how many are your colleagues, or related to your job? ... person(s)

75c. Could you please tell us how many of your close friends you have managed to visit within the last month? ... person(s)

76- Could you please tell us, when you find yourself in trouble and need your husband's companionship and help, how much you can actually count on his help and companionship?

1- Not at all [ ] 2- Little [ ] 3- Some [ ] 4- Pretty much [ ] 5- Very much [ ]

77- Could you please tell us how much does your husband appreciate and acknowledge your efforts for the house and the family?

1- Not at all [ ] 2- Little [ ] 3- Some [ ] 4- Pretty much [ ] 5- Very much [ ]

78- Could you please tell us overall how much you do you feel satisfied with your common life with your husband?

1- Not at all [ ] 2- Little [ ] 3- Some [ ] 4- Pretty much [ ] 5- Very much [ ]

79- In this section please tell us if you attend or participate regularly or irregularly in any activities mentioned below:

Item	Regularly	Irregularly
1- Sport clubs or centres	[ ]	[ ]
2- School gatherings	[ ]	[ ]
3- Religious or charity activities	[ ]	[ ]
4- Courses for arts, cooking, ...	[ ]	[ ]
5- Language courses	[ ]	[ ]
6- Going places (with friends or colleagues, not relatives)	[ ]	[ ]

80- Over the last month, how much would you say stress or daily life pressures have affected your health?

1- Not at all [ ] 2- A little [ ]
3- Some [ ] 3- Quite a lot [ ] 5- Absolutely

81- We should like you to consider the past few weeks. Could you please tell us if -compared to your health in general- there has been any changes in terms of the cases/items we are going to ask you.

1- Have you recently been able to concentrate on whatever you're doing?
1- Better than usual [ ] 2- Same as usual [ ]
3- Less than usual [ ] 3- Much less than usual [ ]

2- Have you recently lost much sleep over worry?
1- Not at all [ ] 2- No more than usual [ ]
3- Rather more than usual [ ] 3- Much more than usual [ ]

3- Have you recently felt that you are playing a useful part in things?
1- More than usual [ ] 2- Same as usual [ ]
3- Less than usual [ ] 3- Much less than usual [ ]

4- Have you recently felt capable of making decisions about things?
1- Better than usual [ ] 2- Same as usual [ ]
3- Less than usual [ ] 3- Much less than usual [ ]

5- Have you recently felt constantly under strain?
1- Not at all [ ] 2- No more than usual [ ]
3- Rather more than usual [ ] 3- Much more than usual [ ]

6- Have you recently felt you couldn't overcome your difficulties?
1- Not at all [ ] 2- No more than usual [ ]
3- Rather more than usual [ ] 3- Much more than usual [ ]

7- Have you recently been able to enjoy your normal day-to-day activities?
1- More than usual [ ] 2- Same as usual [ ]
3- Less than usual [ ] 3- Much less than usual [ ]

8- Have you recently been able to face up to your problems?
1- More than usual [ ] 2- Same as usual [ ]
3- Less than usual [ ] 3- Much less than usual [ ]

9- Have you recently been feeling unhappy and depressed?
1- Not at all [ ] 2- No more than usual [ ]
3- Rather more than usual [ ] 3- Much more than usual [ ]

10- Have you recently been losing confidence in yourself?
1- Not at all [ ] 2- No more than usual [ ]
3- Rather more than usual [ ] 3- Much more than usual [ ]

11- Have you recently been thinking of yourself as a worthless person?
1- Not at all [ ] 2- No more than usual [ ]
3- Rather more than usual [ ] 3- Much more than usual [ ]

12- Have you recently been feeling reasonably happy all things considered?
1- More than usual [ ] 2- Same as usual [ ]
3- Less than usual [ ] 3- Much less than usual [ ]

82- Could you please tell us how satisfied you feel yourself, thinking of your life in general?
1- Not at all [ ] 2- Little [ ] 3- Some [ ] 4- Pretty much [ ]

83- Now we would like you to locate the range of your family income, in Tehran's family income classification. Where would you stand your husband's monthly income after deduction of tax, and alike:
1- 0-25000 Tumans [ ] 2- 25,000-50,000 Tumans [ ]
3- 51,000-100,000 Tumans [ ] 4- 101,000-150,000 Tumans [ ]

5- 151,000-200,000 Tumans [ ] 6- 201,000-300,000 Tumans [ ]
7- 301,000-400,000 Tumans [ ] 8- 401,000-500,000 Tumans [ ]
9- 501,000-700,000 Tumans [ ] 10- 701,000- and more Tumans [ ]
10- Don't know [ ]

84- Please tell us how much your monthly family expenses are in total, including bills, accommodation, food, clothes, etc.? ... Tumans

85- Would you please tell us how much is your own monthly income from your job, after tax, insurance, etc.? ... Tumans

86- As our final question, considering your current household income, how easy it is for you to make ends meet:

1. Absolutely easy [ ] 2. Relatively easy [ ]
3. Relatively difficult [ ] 4. Absolutely difficult [ ]

Questions exclusive to non-working respondents

Questions which follow were present in the second version of the questionnaire addressed to non-working respondents:

- Could you please tell us, in case there was a chance, how much would you like to take a job for yourself?

1- Very much would like [ ] 2- would like [ ] 3- Don't know [ ]
4- Not inclined[ ] 5- Would not like at all [ ]

If yes, why? Cross in front of any option(s) you find relevant as a reason for this decision:

[ ] 1. To support the family financially/earn income
[ ] 2. Due to the qualification/educational degree/skills you have
[ ] 3. To obtain financial independence/avoid dependency
[ ] 4. Personally interested in having a job
[ ] 5. Due to being interested in enhancing social activities/ socialize and be in touch with other people
[ ] 6. Bored with routine housework
[ ] 7. Other reasons. Please specify: ...

If not, why? Cross in front of any option(s) you find as a reason:

[ ] 1. Physical weakness or illness
[ ] 2. Working hinders doing proper housework and housewife duties
[ ] 3. Working hinders doing proper motherhood duties
[ ] 4. Lack of personal interest in having a job
[ ] 5. Financial need
[ ] 6. Failure in getting the favorite job
[ ] 7. Your husband wouldn't agree with your working
[ ] 8. Lack of the necessary qualification or degree
[ ] 9. Other reasons: please specify: ...