HOW DO MULTIPLE ROLES AFFECT WOMEN'S HEALTH? THE IMPACTS OF EMPLOYMENT AND FAMILY ROLES OVER WOMEN'S LIFE COURSE

by

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Abstract

Two theoretical hypotheses regarding the combination of family and work roles are usually applied to explain health differences between employed women and housewives. The Role Accumulation Hypothesis proposes that the benefits of role accumulation on health tend to outweigh any stress caused by multiple roles. The Role Strain Hypothesis proposes that multiple roles cause role overload and role conflict that results in poorer health. Using data from the Taiwan Social Change Survey conducted in year 2000 and 2002, this study investigates the health effects of employment and family roles on health for women in different age groups. Logistic regression models of three health measures are estimated separately for young, middle-aged, and elderly women. Results suggest that although being employed is associated with better health in general for women, the health benefit may vary depending on the type of employment, the nature of family roles, and stage in the life course.

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INTRODUCTION

Theoretical Focuses: Effects of Employment and Family Roles on Women's Health

Studies have often shown that homemakers tend to have poorer health than employed women (Macran 1994; Ross and Mirowsky 1995). Some researchers argue the less healthy status of housewives may result from health selection of the labor market. That is, healthier women are selected into the labor force. However, existing evidence demonstrated that, after controlling for the presence of a long-standing illness or disability, women who were economically inactive were still more likely to evaluate their health as "less-than-good" than women in paid work (Macran et al. 1994). It appears that not all of the poor health usually attached to the role of "housewife" can be explained in terms of labor market health selection. Alternatively, some scholars attribute the health differentials among housewives and employed women to the characteristics of paid and unpaid work. Bird and Ross (1993) argued that unpaid domestic work is more routine and provides less gratification and fewer rewards than paid work. MacDonald, Phipps, and Lethbridge (2005) indicated that women's greater hours of unpaid work contribute to women experiencing more stress than men.

Marital and parental roles in general are associated with health and longevity, for they provide individuals with financial resources, social support, and social control on health behaviors (Lillard and Waite 1995; Macintyre 1992; Rogers, Hummer, and Nam 2000).

Women tend to benefit from financial resources and social integration accompanied by marriage and parenthood. However, for women, certain role expectations such as being caregivers and homemakers may have negative impacts on health (Chiou, Chen, and Wang 2005; Nomaguchi and Milkie 2003). For instance, studies found that women's hours spent on eldercare and housework were more stressful than those spent on childcare (Lethbridge 2005). The characteristics of family roles for women are conditioned by social context. The combination of employment and family roles appears to have more impact on health for women than for men.

Two theoretical hypotheses regarding "multiple roles," i.e., the combination of family and work roles, are usually applied to explain health differences between employed women and housewives. The Role Accumulation Hypothesis proposes that while multiplicity of roles may produce role strain as a consequence of role conflict or role overload, the benefits of role accumulation on health tend to outweigh any stress caused by multiple roles. The benefits of multiple roles include more sources of social support, satisfaction, self-esteem, and financial resources (Sieber 1974). This hypothesis has found some support from a number of empirical studies. For example, Waldron and Jacobs (1989) analyzed longitudinal data on older middle-aged women to examine the health effects of three roles: labor force participant, spouse, and parent. Their findings suggest that involvement in multiple roles in general result in a smaller increase of health problems within five years. In her literature review, Dennerstein's (1995) reported that multiple roles have beneficial rather than adverse effects on mental health in many studies. However, she also noted that husbands' negative attitudes toward women's paid

employment and husbands' lack of participation in childcare could erode the potential beneficial effects.

Some researchers provide different arguments concerning the accumulation hypothesis. Verbrugge (1983) argued that people with both job and family roles enjoyed only the combination of health benefits of each role and experienced no special health disadvantage from being so busy. In other words, the combination of job plus family responsibilities has no substantial effects on health, either negative or positive. She suggested that social selection of healthier people into multiple roles might explain the beneficial effects. Harenstam and Bejerot (2001), on the other hand, argued that only in families where both partners are employed and share the domestic work and financial responsibilities did men and women both enjoy greater psychological and physical well-being.

Contrary to the Role Accumulation Hypothesis, the Role Strain Hypothesis proposes that multiple roles cause role overload and role conflict that contribute to increased stress and excessive demands on time, energy, and psychological resources that then results in poorer health (Verbrugge 1986; Waldron and Jacobs 1989; Waldron and Weiss 1998). Blane, Berney, and Montgomery (2001) found that domestic labor on its own did not strongly predict health. However, the combination of domestic labor and paid employment was associated with women's poorer health. Studies conducted by Voss, Floderus, and Dierichsen (2004) also suggested that a high total workload from paid and unpaid work was associated with greater job absence due to illness among women. Bratberg, Dahl, and Risa (2002) argued that women combining careers with children constitute a selected group with better health. However, when sample selection was

adjusted, they found number of children to be associated with women's absence due to illness.

Rather than just focusing on health impacts of the number of roles, some studies investigate the effects of various combinations of work and family responsibilities on health. Results suggest that the effects of multiple roles on health vary depending on gender, the nature of family roles, and the characteristics of employment. The health effects of combining work and family roles are more significant for women than for men (Hewitt, Baxter, and Western 2006; Janzen and Muharjarine 2003). In addition, marriage is found to produce more health benefits for women who are not employed than those who are employed (Arber 1991). For women, while combing full-time employment and children has a detrimental impact on health, combining children with part-time work or no-employment has a beneficial health effects (Hewitt, Baxter, and Western 2006). Accordingly, a number of researchers contend that, in order to better understand the impacts of multiple roles on health, more specific characteristics of the social roles examined are required (Fokkema 2002; Janzen and Muharjarine 2003).

To summarize, even though empirical evidence has been found to support each of these two hypotheses, existing studies provide limited discussion on how health effects of multiple roles could vary in different contexts. Potentially important contexts include the type of employment, the nature of family roles, and stage in the life course. Multiple roles and different combinations of roles may affect individual health differently.

Women's Work and Family Roles in Taiwan

Despite the fact that a policy of maternity benefits in Taiwan has shown positive effects on Taiwanese women's return to jobs after childbirth (Zveglich and Rodgers

2003), about 45% of Taiwanese women withdrew from the labor market after being married or giving birth (Yi and Chien 2001). Chang (2006) found that job status of both wives and husbands and husbands' ethnic background and gender-role attitudes have significant impacts on women's decisions about quitting their jobs. According to results from the "Taiwanese Women's Life Survey" (Ministry of the Interior, Executive Yuan, Taiwan, 2002), the major reason for women not being employed was "taking care of children"(26.0.%). In a large-scale comparative study of the impact of economic development on workers' employment and family life in Taiwan and China, Chow and Hsung (2002) reported "marriage and especially parenthood remained barriers to women's employment, promotion, and equity in the workplace." (2002: 98). In addition, Chuang and Lee (2003) indicated that a husband's negative attitude toward a working wife greatly influences his wife's decision regarding entering the labor market.

Facing the challenge of the incompatibility of work and family roles, Taiwanese women usually shift from formal to informal employment. Studies have shown that women chose informal employment in order to take care of children and household. (Lu 1992: Yi and Chien 2002) Among informally employed women, many work for a family business established by the husband's family. Existing studies suggest that working in family firms for Taiwanese women could be a compromise between demands from family and work (Yi and Chen 2001). Women's work roles in family firms could be also an extension of their family role. For instance, while men were in charge of "exterior" matters such as contacting customers or taking orders from them, women are responsible for administration of the firms. In addition, women also extend their roles of establishing

emotional linkages among family members to the roles of maintaining good relationships with customers and other collaborative firms (Lu 1996).

Studies show that work-related power relations and gender roles (for both husband and wife) are mutually shaped in family business (Lu 2001). This kind of interaction does not happen in a non-familial firm. In addition, compared to those employed in non-family firms, women working for family businesses may enjoy more flexibility in balancing their responsibility for family with a paid job. As women's roles in family business are the extensions of their family roles, it is expected that the male employers (usually the family heads) will be more understanding and lenient if the related female workers need to take time off to carry on their family responsibilities. The flexibility in work responsibility may decrease women's stress caused by role conflict. Due to the lack of research, it is uncertain how these complex relationships impact health for familial employed women.

Although certain evidence in Taiwan shows that working women may have greater total workload than housewives (Directorate-general of Budget, Accounting and Statistics, Executive Yuan, 2003), few, if any, studies investigate whether multiple roles are associated with poorer health for women. In addition, it remains unclear whether the characteristics of role extension in family firms would help women cope with conflict between work- and family roles and then in turn have different health effects compared to those who work in non-familial businesses or who are self-employed. Accordingly, this research attempts to compare the health effects of multiple roles among different types of employment, including familial employment, non-familial employment, and self-

employment. Also, I intend to examine the possible moderating effects of family roles on the association between employment and women's health over the life course.

DATA AND METHOD

The data is drawn from different years of the Taiwan Social Change Survey (TSCS). The TSCS is conducted by the Institute of Sociology, Academia Sinica in Taiwan. All data were collected in the mode of face-to-face interviews. The sample used in this study is pooled from the second questionnaire of the first survey of the fourth cycle conducted in year 2000 and the first questionnaire of the third survey of the fourth cycle conducted in year 2002. The research population of this study is uninstitutionalized Taiwanese adult women aged 18 and above. Given the small amount of missing data for most variables (less than 0.1%), cases with missing information, except for family income, are deleted. Only one variable, family income, has more than 5% missing information. In this case, a "missing category" is assigned. The final unweighted sample size is 1,952.

Three dichotomous variables of health measures are used as dependent variables in statistical analyses: chronic diseases, life affected by illness in the past two weeks, and self-rated health. Chronic disease is measured by the question: "Do you currently have any chronic disease?" The response of "yes" is recoded to 1, "no" to 0. The question addressing life affected by illness in the past two week is: "During the latest two weeks, how much was your daily life affected by any illness?" In order to prevent the problem of small cell size in analysis, the response of "no effect" is recoded to 0, and the other three ("a little bit effect," "a strong effect," and "a very strong effect.") are collapsed and recoded to 1. Self-rated health is measured by the question: "How do you evaluate your health in the past two weeks?" Response to this question consists of four categories:

"very good," "good," "poor," and "very poor." Regarding the problem of small cell size in estimating regression models, the responses of "poor" and "very poor" are recoded to 1 as "poor health", and "good" and "very good" are recoded to 0.

The two primary explanatory factors in the main data set are employment and family roles. For the measure of employment, women who are not currently employed serve as the reference group. Three dichotomous variables are then used as measures of types of employment: self-employment, employed in family firms, and employed in non-familial firms. The measurement of family roles consists of three sets of indicators: conjugal role, parental role, and filial role. As the measure of conjugal role, marital status is recoded to a dummy variable (married =1, otherwise =0). Parental role is measured by two variables: the number of unmarried children living in the household and the married children living in the household. Filial role is measured by the number of parents and parents-in-law living in the household.

Control variables in statitical analyses include age, educational attainment, monthly family income, smoking, and alcohol drinking. In order to examine the impacts of multiple roles on health, I test 15 two-way interaction terms conducted by multiplying marital status, living arrangement, or types of employment.

For each of the three health measures, binomial logistic regression models are first estimated for the whole sample. The sample is then divided into three age groups: the young adults (age 18 – 44), the middle aged (age 45 – 64), and the elderly (age 65 or above). The technique of progressive adjustment (Mirowsky 1999) is employed in the model construction for each health measure, in each age group. Considering women of different age are likely to possess different family roles, different sets of family roles

indicators are included when estimating models for women in each age group. For instance, the indicator "married children living in the household" is not included in models for young women, and "parents/in-laws living in the household" is not included in models for elderly women. Accordingly, different sets of interaction terms are tested for different age groups according to the family roles indicators controlled in each age group.

FINDINGS

Table 1 presents weighted distribution of social factors and health measures for Taiwanese women in general and in each age group. Young women are much more likely than middle-aged or elderly women to receive higher education. To illustrate, while 31.69% of young women have a junior college or above degree, only 8.27% of middle-aged and 0.7% elderly women have the same level of education. Among the three age groups, middle-aged women (82.90%) have the highest proportion who are currently married. While young women are most likely to live with parents or in-laws, a highest proportion of elderly women live with married children. There are 58.12% of Taiwanese women in the labor force. Among the three types of employment, the proportion of working in non-family business is lower in the two older age groups. Conversely, more women work for family firms as they aged. Finally, women's self-reported health status declines with age.

Table 2 shows the weighted proportion for the three health measures by age and types of employment. Looking at the distribution in the whole female sample (i.e., the column titled "Total"), we see that employed women in general are less likely than those who are not currently employed to report poor health status. For instance, while 31% of non-

employed women report having chronic diseases, less than 20% of employed ones report so. Probably because of the small cell effects, differences in health measures between the employed and non-employed are not statistically significant in most age groups. However, we may still find that the unemployed women tend to report less healthy than those who are employed, especially for the middle aged and elderly groups.

Table 3 shows the odds ratio for chronic disease among Taiwanese women in general and in different age groups. Looking at the model for all women in the sample, we see the family employed are 34.1% less likely than those who are not employed to report chronic disease. Since the odds ratio between non-familial employed and not employed women is 0.983 and not significant, we may argue that familial employed women are less likely than non-familial employed women to report chronic disease. Across the three age groups, the protecting effects of familial employment against chronic ailments are more apparent among young and middle-aged women. As marital status shows no significant effect on chronic disease, living arrangement is significantly associated with women's chance of reporting chronic disease. For young women, living with parents/in-laws is associated with a lower risk of chronic disease. This suggests that social support offered by parents/in-laws living in the household could enhance young women's health. Also, adding an unmarried child to the household would decrease women's chance of reporting chronic. This protective effect might be attributed to psychological support provided by children, or it can be explained by the fact that healthier women are more likely to give birth to more children.

Table 4 presents odds ratios of life affected by illness in the past two weeks for Taiwanese women. The odds of recent illness for the three types of employment relative

to non-employment are all statistically insignificant in Table 4. However, it warrants mention that the odds of recent illness for familial employed middle-aged women relative to non-employed middle-aged women is 1.215, compared to the same odds ratio for young women which is 0.867. This noticeable difference suggests that the effect of familial employment for women varies with age. The protective effects of marriage on recent illness are found to be more apparent among the elderly. Married elderly women are about 40% less likely than unmarried elderly women to report their life was affected by illness in the past two week. Having an additional child in the household is significantly associated with a lower risk of reporting recent illness for women in general.

Table 5 presents odds ratios of poor self-rated health for Taiwanese women. The three types of employment are not significantly associated with self-rated health. It is notable that the directions of the association between familial employment and health are opposite for young women (odds ratio = 0.715) and for middle-aged women (odds ratio = 1.214). Although these two associations are not statistically significant, considering the small sample size of familial employment in both groups (96 for young women and 62 for middle-aged women), these two sets of odds ratios may still have substantial meaning. The implication is that, while familial employment is beneficial to young women's health, it is associated with a higher risk of poor health for middle-aged women. The odds of reporting poor self-rated health for married women relative to the non-married ones are constantly less than 1.0 across three age groups but not statistically significant. Results of progressive adjustment (not shown) suggest that the beneficial health impact of marriage for women is partly mediated through having children in the household, which is significantly associated with a 13% lower risk of reporting poor health for women in

general. In addition, having parents/in-laws in the household is associated with at a 15% smaller likelihood of reporting poor health for women in general. This protecting impact is most apparent among young women. The health protective effects displayed by marriage and living arrangements with unmarried children and parents/in-laws show that family roles may provide strong social support for women, which in turn enhances their health.

Table 6 presents the odds ratio of reporting chronic disease between the multiple roles bearers and the non-employed individuals with the same family role. The five odds ratios significantly differing from 1.0 are displayed in the table. Among the women with unmarried children living in the household, the self-employed are less likely than those who are non-employed to report chronic disease (odds ratio = 0.674). This pattern is more apparent among the middle aged self-employed women (odds ratio = 0.434). One noteworthy finding is that, for young women with unmarried children in the household, while familial employment is linked to a lower risk of chronic disease (odds ratio = 0.406), non-familial employment is associated with a greater chance of chronic ailments (odds ratio = 1.109). In addition, among middle-aged women having parents/in-laws in the household, the self-employed are much more likely than the non-employed to report chronic disease (odds ratio = 4.994).

Table 7 presents the odds ratio of reporting chronic disease between multiple role bearers and the individuals in the same type of employment but with less family responsibilities. Also, The five odds ratios significantly differing from 1.0 are displayed in the table. Among the self-employed women, having additional is associated with a greater chance of reporting chronic disease (odds ratio = 1.146). This pattern is

particularly evident among middle-aged self-employed women (odds ratio = 1.814). Also, for middle-aged self-employed women, having one additional parent/in-law living in the household is associated with a much higher chance of reporting chronic diseases (odds ratio = 9.134). This very large odd ratio is likely resulted from a small sample size (Only 4 middle-aged self-employed women have parents/in-laws living in the household). For both non-familial employed young women and familial employed young women, adding a child to the household may increase the chance of reporting chronic disease (odds ratios = 1.055 and 1.507, respectively).

Table 8 presents the odds ratio of reporting recent illness between the multiple roles bearers and the non-employed individuals with the same family role. The four odds ratios significantly differing from 1.0 are displayed in the table. The four odds ratios significantly differing from 1.0 are displayed in the table. Among married middle-aged women, the non-familial employed is about 40% less likely than the non-employed to report recent illness (odds ratio = 0.615). For middle-aged women with unmarried children in the household, the impacts of non-familial employment and familial employment on recent illness are opposite. While non-familial employment is associated with a lower risk of reporting recent illness (odds ratio = 0.857), familial employment is associated with a higher risk (odds ratio = 1.321). In addition, for middle-aged women having parents/in-laws living in the household, the self-employed are much more likely than the non-employed to report recent illness (odds ratio = 6.141). As mentioned before, this very large odds ratio is probably resulted from a small sample size.

Table 9 presents the odds ratio of reporting recent illness between multiple role bearers and the individuals in the same type of employment but with less family

responsibilities. The four odds ratios significantly differing from 1.0 are displayed in the table. Among self-employed middle-aged women, having one additional parent/in-law in the household is associated with about a 300% greater chance of reporting recent illness (odds ratio = 3.987). For non-familial employed middle-aged women, being currently married or having one additional unmarried child living in the household is associated with a smaller likelihood of reporting recent illness (odds ratios = 0.387 and 0.686, respectively). For familial employed middle-aged women, adding an unmarried child to the household is associated with a lower risk of reporting recent illness.

As to the measure of self-rated health, no significant interaction term between employment and family roles was found. It implies that multiple roles may have no evident impact on women's self-rated health.

The above findings suggest that although being employed is associated with better health status in general for women, the health benefit may vary depending on the type of employment, the nature of family roles, and stage in the life course. For young women who face the conflict between work and family responsibility such as childcare, the possible flexibility in job responsibility accompanied with familial employment may help to decrease their stress. Working for non-familial business, on the other hand, would not provide this kind of benefit for young mothers. However, the health advantage of familial employment is found decreasing for middle-aged and elderly women. Actually, non-familial employment seems to be more beneficial to health for middle-aged women. Moreover, the impacts of living with parents/in-laws on health are much different for young and middle-aged women. While young women tend to benefit from this living

arrangement, middle-aged women don't. This is likely due to the different family roles played by women in different stages of life.

DISCUSSION

Results suggest that employment in general is associated with a better health status for Taiwanese women, but this may be due to reverse causation. There is no consistent pattern found in regard to which type of employment is associated with a lowest risk of adverse health for all women. Rather, depending on the age of workers, certain types of employment yield more health benefits than others. For instance, familial employment is linked to a lower chance of reporting recent illness for young women, but it is associated with a higher risk of recent illness for middle-aged and elderly women. Since women's roles in family firms are likely the extension of their family roles (Lu 1996), the impacts of familial employment among women in different age groups are probably associated with the roles they play in family firms as well as in the family. For young familial employed women, their roles in family firms are likely to be the mother of young children (or grandchildren) of the employer. Thus, in order to take care of children, young familial employed women might enjoy schedule flexibility or shorter work hours. In turn, they are likely to experience less work-family conflicts compared to young women working in other types of businesses. Middle-aged women, probably due to a smaller burden in childcare and more responsibilities as a "boss's wife", tend to work much longer hours than their counterparts in other types of employment. The long working hours may then account for the detrimental health effects of familial employment among middle-aged women.

Because of using cross-sectional data sets, this research is not able to control health selection effects. However, while part of the health differences between the employed and the non-employed may be explained by health selection of the labor, some studies show that employment does yield protective effects on health (Graetz 1993; Hewitt Baxter and Western 2006; Ross and Mirowsky 1995). Findings of this research also imply that employment is beneficial to individual health. Also, the positive association between employment and health is found to be partly mediated through higher family income. In addition, health selection cannot fully explain the health differences among individuals in different types of employment. To illustrate, health selection cannot explain why the young familial employed are likely to be healthier than their counterparts in other types of employment. It is not plausible that healthier young women are particularly likely to choose familial employment over the other two types of employment. Thus, this research proposes that, in addition to health selection effects, the economic benefits and the characteristics of working environments together help to account for the health differentials among individuals who are in different types of employment and those who are not currently employed.

Results of analyses show that, compared to employment, family roles have less significant impacts on health. In general, family roles such as maritial status and living arrangements with children or parents/in-laws are significantly associated with health status for women. As women are traditionally defined as primary homemakers and caregivers, it is expected that their health outcomes are likely associated with their parental or filial roles. Logistic regression analyses reveal that the impacts of certain family roles on health vary with age. For instance, living with parents/in-laws is

associated with a lower risk of reporting chronic diseases and poor self-rated health for young women. This is likely because parents/in-laws provide help in childcare or housework for young women. In contrast, because middle-aged women are more apt to be responsible for taking care of elderly parents/in-laws, living with parents/in-laws is associated with a higher risk of chronic ailments for middle-aged women. Moreover, being married is associated with a smaller chance of reporting poor self-rated health for middle-aged women and a lower risk of recent illness for elderly women.

In this paper, I test the interactions of types of employment and family roles to assess the effects of multiple roles on health. Each interaction term yields two sets of health comparisons: (1) the comparison between the multiple roles bearers and the non-employed individuals with the same family role; (2) the comparison between multiple role bearers and the individuals in the same type of employment but with less family responsibilities. Results of both types of comparisons show that the impacts of multiple roles on health tend to vary depending on social and demographic context.

Compared to the non-employed with the same family role, multiple roles bearers on average are less likely to report adverse health outcomes. However, because of the following three reasons, I do not regard these results as evidence in support of the role accumulation hypothesis. First, since this research used cross-sectional data sets, I am unable to control for baseline health for individuals. Thus, the better health outcomes among those who are currently employed could be partly the consequences of health selection of the labor market. Second, a number of significant interactions in results show that individuals with certain combinations of employment and family roles report poorer health than those non-employed with the same family role. For instance, young non-

familial employed women with unmarried children are more likely than non-employed young women with the same number of unmarried children to report chronic ailments. Also, self-employed middle-aged women with parents/in-laws living in the household are more likely than their non-employed counterparts to report chronic diseases and recent illness. These findings are inconsistent with the role accumulation hypothesis. Third, if multiple roles tend to produce more health benefits, we should find that multiple role bearers have better health than employed individuals with less family responsibilities. However, as I will discuss in the next paragraph, that is not the case.

Compared to individuals in the same type of employment, but with less family responsibilities, those with multiple role are more likely to report adverse health outcomes. To illustrate, non-familial employed and familial employed women with young children living in the household are more likely than their counterparts with fewer children living at home to report chronic diseases. On the other hand, certain additional family responsibilities yield health benefits for employed individuals. For instance, middle-aged non-familial employed and familial employed women who have more children living in the household are less likely to report recent illness. The implication is that, for middle-aged women, unmarried children living at home are at least teenagers and demand less time and effort for baby-sitting or other kinds of care. Instead, older children may provide psychological support or assistance in housework for their working parents.

Based on the analyses of two types of comparisons regarding multiple roles, I argue that multiple roles are more likely than not to result in adverse health outcomes for employed women. However, the role strain hypothesis is not sufficient to explain all the

health effects of multiple roles. The impacts of multiple roles on health also depend on demographic or social factors such as age, the type of employment, and the nature of family roles.

There are two major limitations of this research. First, due to the limited sample size, small cells emerged during statistical analyses, especially for small subgroups such as familial employment and living with parents/in-laws. Consequently, estimates of important covariates such as types of employment often fail to reach statistical significance. Second, since this research uses a cross-sectional data set, the possible problem of health selection in the labor market and in marriage cannot be controlled. Thus, future research should analyze large and prospective data sets to further clarify the mechanism between multiple roles and health for women.

Table 1. Weighted Distribution of Social Factors and Health Measures by Age, Taiwanese Women, 2000-2002

	Total	Aged 18 to 44	Aged 45 to 64	Aged 65 or over
Age (mean)	43.24	32.34	53.00	72.48
Educational attainment (%)				
Junior high school or below	51.22	27.04	80.94	97.18
High school	27.66	41.28	10.79	2.13
Junior college or above	21.11	31.69	8.27	0.70
Family role factors (%)				
Married	68.14	65.75	82.90	44.83
Father living together	15.03	24.64	1.85	0.00
Mother living together	18.17	29.34	2.97	0.37
Father in law living together	7.92	12.10	2.41	0.82
Mother in law living together	11.17	16.59	4.55	0.72
Married son living together	14.8	0.40	28.8	51.7
Unmarried son living together	47.2	51.6	52.3	13.6
Married daughter living together	2.5	0.2	5.8	6.2
Unmarried daughter living together	38.5	45.0	39.3	5.8
Employment status (%)				
Self-employed	8.34	8.38	10.66	2.72
Non-familial employment	37.12	51.56	22.27	2.91
Familial employment	8.65	8.27	10.95	5.02
Unemployed	4.01	4.37	3.16	4.30
Not in labor force	41.88	27.43	52.97	85.05
Monthly Family income (NTD) (mean)	63,000	71,000	55,000	35,000
Health Behavior				
Alcohol drinking (%)	21.49	30.12	11.63	3.33
Smoking (%)	4.97	6.25	2.67	4.15
Health Status				
Self rated health (mean)	2.96	3.06	2.90	2.61
Chronic disease (%)	23.65	12.84	31.18	57.71
Illness in the past two week (%)	40.25	29.83	43.88	81.68
N	1971	1160	570	242

Source: TSCS 4.1Q2 and 4.3Q1[1]

[1] Cases containing missing values, except for family income, have been removed from the original sample.

Table 2. Weighted Proportion for Dependent Variables , by Age and Types of Employment, Taiwanese Women, 2000-2002

	Total	Aged 18 to 44	Aged 45 to 64	Aged 65 or over
Proportion of Reporting Chronic Diseases				
Not currently employed	.31*	.12	.35†	.59
Self employed	.19*	.15	.23†	.41
Non-familial employment	.17*	.14	.29†	.50
Familial employment	.17*	.09	.23†	.56
Proportion of Reporting Life Affected by Illness within Two Weeks				
Not currently employed	.32*	.23	.31	.49
Self employed	.25*	.23	.26	.36
Non-familial employment	.23*	.23	.23	.28
Familial employment	.27*	.20	.34	.47
Proportion of Reporting Poor Health				
Not currently employed	.28*	.20	.29	.42
Self employed	.24*	.24	.23	.36
Non-familial employment	.19*	.18	.22	.28
Familial employment	.23*	.14	.32	.47
N	1971	1160	570	242

Source: TSCS 4.1Q2 and 4.3 Q1

† < .10; * p<.05 (One-way ANOVA)

Table 3. Odds Ratio of Reporting Chronic Diseases for Women by Age, Taiwan 2000-2002.

	Total	Aged 18 - 44	Aged 45 - 64	Aged 65 or above
Age	1.043**	.997	1.068**	.987
Educational attainment				
High school	.726	.632†	.816	1.179
Junior college or above	.949	.882	.922	1.656
Family role factors				
Married	.968	1.116	.775	1.160
Employment status				
Self employed	.780	1.320	.647	.376
Non-familial employment	.983	1.286	.976	.925
Familial employment	.659†	.807	.586[m]	.838
Monthly family income				
Missing category	1.040	1.373	.942	.730
The 2nd quarter income level	1.126	1.250	.936	.404*
The 3rd quarter income level	1.061	.970	1.016	1.385
The 4th quarter income level	1.001	.916	1.172	.684
Living arrangement				
Number of parents/in-laws living together	.790*	.721*	1.026	
Number of unmarried children living together	.902†	.954	.983	.954
Number of married children living together			.857	.854
Health Behavior				
Non- or mild drinkers	.353*	.514	.145	.212
Non- or mild smokers	.396*	.260**	1.182	.512
-2LL	1896.600	859.787	679.078	314.614

† p<.10; * p<.05; ** p<.01; *** p<.001

[m]. The p-value of this coefficient is between 0.10 and 0.12.

Table 4. Odds Ratio of Reporting Life Affected by Illness in Last Two Weeks for Women by Age, Taiwan 2000-2002

	Total	Aged 18 - 44	Aged 45 - 64	Aged 65 or above
Age	1.012*	.997	.992	.982
Educational attainment				
High school	.828	.871	.768	.989
Junior college or above	.724†	.822	.569	.399
Family role factors				
Married	.839	1.140	.805	.596†
Employment status				
Self employed	.822	.970	.811	.523
Non-familial employment	.893	1.044	.783	.278
Familial employment	.976	.867	1.215	.878
Monthly family income				
Missing category	.976	.883	.611	1.223
The 2nd quarter income level	.882	.836	.534*	1.885
The 3rd quarter income level	1.015	.980	.593†	1.453
The 4th quarter income level	.943	.888	.757	1.182
Living arrangement				
Number of parents/in-laws living together	.915	.938	.668	
Number of unmarried children living together	.884*	.917	.876	.988
Number of married children living together			1.019	1.083
Health Behavior				
Non- or mild drinkers	.649	.530	1.471	1.140
Non- or mild smokers	.441*	.330*	6×10^8	.710
-2LL	2249.771	1232.432	658.516	324.162

† p<.10; * p<.05; ** p<.01; *** p<.001

Table 5. Odds Ratio of Reporting Poor Self-rated Health for Women by Age, Taiwan 2000-2002.

	Total	Aged 18 - 44	Aged 45 - 64	Aged 65 or above
Age	1.015**	1.013	1.001	1.031
Educational attainment				
High school	1.015	1.228	.734	.828
Junior college or above	.827	1.051	.451	.539
Family role factors				
b Married	.843	.871	.807	.872
Employment status				
Self employed	1.022	1.248	.761	.820
Non-familial employment	.925	.929	.977	.514
Familial employment	.983	.715	1.214	1.463
Monthly family income				
Missing category	1.096	1.516	.803	.831
The 2nd quarter income level	.663**	.650†	.330***	1.233
The 3rd quarter income level	.777	.879	.401**	1.025
The 4th quarter income level	.505***	.538*	.349**	.637
Living arrangement				
Number of parents/in-laws living together	.850†	.837†	.961	
Number of unmarried children living together	.870*	.925	.868	.846
Number of married children living together			1.071	.876
Health Behavior				
Non- or mild drinkers	.405*	.291**	1.278	.651
Non- or mild smokers	.555	.460†	6×10^8	.657
-2LL	2054.082	1080.616	616.688	317.929

† p<.10; * p<.05; ** p<.01; *** p<.001

Table 6. Odds Ratio for Chronic Disease by Types of Employment, Family Roles, and Age, Taiwanese Women, 2000 – 2002.

	Married				Unmarried children living in the household				Married children living in the household				Parents/ in-laws living in the household			
	Total	18-44	45-64	65+	Total	18-44	45-64	65+	Total	18-44	45-64	65+	Total	18-44	45-64	65+
Self-employment	-	-	-	-	0.674	-	.434	-	-	n/a	-	-	-	-	4.994	n/a
Non-familial employment	-	-	-	-	-	1.109	-	-	-	n/a	-	-	-	-	-	n/a
Familial employment	-	-	-	-	-	.406	-	-	-	n/a	-	-	-	-	-	n/a
Not employed	ref	ref	ref	ref	ref	ref	ref	ref	ref	n/a	ref	ref	ref	ref	ref	n/a

- : not significantly different from 1.00.
n/a: not applicable

Table 7. Odds Ratio for Chronic Disease by Family Roles, Types of Employment, and Age, Taiwanese Women, 2000 – 2002.

	Self-employment				Non-familial employment				Familial employment			
	Total	18-44	45-64	65+	Total	18-44	45-64	65+	Total	18-44	45-64	65+
Married	-	-	-	-	-	-	-	-	-	-	-	-
Not married	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref
One additional unmarried child in the household	1.146	-	1.814	-	-	1.055	-	-	-	1.507	-	-
No unmarried child in the household	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref
One additional married child in the household	-	n/a	-	-	-	n/a	-	-	-	n/a	-	-
No married child in the household	ref	n/a	ref	ref	ref	n/a	ref	ref	ref	n/a	ref	ref
One additional parent/in-law in the household	-	-	9.134	n/a	-	-	-	n/a	-	-	-	n/a
No parent/in-law in the household	ref	ref	ref	n/a	ref	ref	ref	n/a	ref	ref	ref	n/a

- : not significantly different from 1.00.
n/a: not applicable

Table 8. Odds Ratio of Types of Employment, Family Roles, and Life Affected by Illness in Last Two Weeks by Age, Taiwanese Women, 2000 – 2002.

	Married				Unmarried children living in the household				Married children living in the household				Parents/ in-laws living in the household			
	Total	18-44	45-64	65+	Total	18-44	45-64	65+	Total	18-44	45-64	65+	Total	18-44	45-64	65+
Self-employment	-	-	-	-	-	-	-	-	-	n/a	-	-	-	-	6.141	n/a
Non-familial employment	-	-	.615	-	-	-	.857	-	-	n/a	-	-	-	-	-	n/a
Familial employment	-	-	-	-	-	-	1.321	-	-	n/a	-	-	-	-	-	n/a
Not employed	ref	ref	ref	ref	ref	ref	ref	ref	ref	n/a	ref	ref	ref	ref	ref	n/a

- : not significantly different from 1.00.
n/a: not applicable

Table 9. Odds Ratio for Chronic Disease by Family Roles, Types of Employment, and Age, Taiwanese Women, 2000 – 2002.

	Self-employment				Non-familial employment				Familial employment			
	Total	18-44	45-64	65+	Total	18-44	45-64	65+	Total	18-44	45-64	65+
Married	-	-	-	-	-	-	0.387	-	-	-	-	-
Not married	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref
One additional unmarried child in the household	-	-	-	-	-	-	0.686	-	-	-	0.617	-
No unmarried child in the household	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref
One additional married child in the household	-	n/a	-	-	-	n/a	-	-	-	n/a	-	-
No married child in the household	ref	n/a	ref	ref	ref	n/a	ref	ref	ref	n/a	ref	ref
One additional parent/in-law in the household	-	-	3.987	n/a	-	-	-	n/a	-	-	-	n/a
No parent/in-law in the household	ref	ref	ref	n/a	ref	ref	ref	n/a	ref	ref	ref	n/a

- : not significantly different from 1.00.
n/a: not applicable

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