

Impact of Partnership Factors in Marriage on Depression in China, 2000

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Introduction and background:

Depression is a common but serious illness (National Institute of Mental Health, 2011, *Depression*, pp.2), because it may disrupt family and work. Many researchers have been working on methods of treating depression. However, few of them have considered depression avoidance.

Compared with the rapid development of China's economy, the educational level of its majority population is still quite low. The large population means that there are human resources such as intelligence that could improve the economy. However, the government is challenged to improve the overall national health security system in a short time frame. The rapid growth of the market economy without a concurrent increase in public health system may lead to depression. However, the limited health care resources cannot provide depressed patients for prompt treatment.

Furthermore, the stability of marriage in China has decreased rapidly¹⁵ (Wu Jianhua et al, 2000). Families play a significant role in our society, especially the relationship between husbands and wives. Therefore, finding the partnership factors of depression and then seeking the means to treatment is very important for public health improvement and social

development in China. Some researchers have already found that socio-demographic factors and risk behaviors have significant effects on people's depression.

My goal is to identify common factors in married people who reported depression. Specifically, this paper aims to find the relationship between partnership factors in marriage and depression. Most Chinese lack the knowledge on how to handle depression. The Chinese government has paid more attention to depression since the 1980s.¹ However, the majority of Chinese still ignore the disease and few seek mental health assistance. By identifying the importance of partnership factors (among other factors), people who are at higher risk may be able to be targeted for public health interventions.

Literature review:

The apparent rarity of depression in China was noted by Western observers in the early 1980s.¹ Yet, a recent research study in China found that more than 20% of Chinese adolescents had symptoms of depression.² What's more, Adrienne (2007) found that marriage is always a good choice for all individuals whose achieve marriageable age. On average, those who were depressed prior to marriage report larger psychological gains from marriage than those who were not depressed.¹⁶ Past research suggests that the role of prior depression may differ for men and women.

Marriage in China is shifting from the complementary type, in which the husband works and the wife does housework and takes care of children, to the parallel type, in which both are

employed and share the housework. However, this transformation is far from complete. Husbands are still more likely to work than wives. Hence, if the husband is not employed, both the husband and the wife may feel depression. On the contrary, if the wife is not employed, it might only have a small influence on husband's mood, because most husbands in China do not care how much their wives earn and they prefer having wives take good care of the house and their children.

Hypothesis 1- A partner's work status influences respondents' depression.

In a marriage relationship, it is not only about two people combining in a family, but about them taking care of each other. If the wife or the husband cannot feel enough love or care from one another, it may lead them to depression.

Hypothesis 2- The levels of depression decrease when the respondents feel enough care from partner.

Catherine et al. (2012) have shown that wives are less depressed if their husbands help with the housework ¹⁷. In many marriages, the wife has a job but still continues to bear primary responsibility for housework and childcare. If the husband provides little or no help with the housework, the wife might feel more depressed than other wives who have more helpful husbands.

Hypothesis 3- Females who spend more time on chores than their partners are more likely to experience depression than females who do not.

In China, the elimination of woman's foot binding, the change of lifestyle, the expansion of women's education and the elevation of woman's social status all indicate that the national revolution has pushed forward the transformation of women from traditional women to modern people with independent personalities.¹⁸ With marriage in China transformed from the complementary type to the parallel type, women's social status has increased. In general, men still have higher social status than women. Respondents who feel that women have higher social status may cause the depression and stress.

Hypothesis 4-Those who believe that women have higher social status will have a higher level of depression.

China has the largest population in the world, but a comparatively weak economic foundation with relatively inadequate resources per capita. These are its basic and unique national conditions.⁵ China's reform policies have made a small group of people rich in a short time. China has a widening gap between the rich and the poor. In contrast to its 130 billionaires, and the claim by the regime that China's GDP grew 8.7 percent over the past year, China's Director of Statistics reported that 150 million Chinese still live in abject poverty. The widening gap between rich and poor has prompted warnings of potential social instability.

Teh-wei Hu *et al.*(2007) suggest that economic problems are one cause of depression,⁷ with low income people suffer more from depression than wealthier people. Furthermore, families have a huge impact on depression.¹⁰ Catherine and Joan (1985) argued that successful fulfillment of husbands' and wives' role obligations in the household affects psychological

well-being in U.S. They found that a husband's high personal earnings directly decreased his likelihood of depression, but a wife's personal earnings did not affect her likelihood of depression, whereas her education and children do.¹¹ Because of the typical division of labor in society between males and females, most men in China bear more family economic responsibility than women do.

The low prevalence of depression among elderly people in China is similar to that found in Western countries, and it has also been shown that depressive mood is higher in rural areas than in cities among older people.³ Depression is a new concept in China, and a lot of older people do not know the meaning of depression, even though they have it. This may be one of the reasons that older people report a lower level of depression.

Unemployed men are significantly more depressed than the employed.¹⁴ People who are not employed may have higher risk of depression, because they cannot support themselves and their family. JialinXie (2012) found that high anxiety and depression were also related to high job demands and low control. He showed that job demands are positively associated with employee depression and psychosomatic health problems.⁴ The professional, technical and managerial jobs are very demanding, which may positively effect on depression. We will include these variables in our models predicting depression.

There is a large difference between urban and rural areas in terms of their economic and educational conditions. China's insufficient educational resources cause an education gap.

Rural Chinese children lack opportunities to continue their education, due to the unavailability of schools in rural areas. Meanwhile, low education quality in rural regions makes it difficult for children to qualify for post-secondary education.⁸ With higher educational levels, people may have more knowledge about illness and more ways to eliminate depression in their daily lives. We will control for region and education when we analyze depression.

Social activities have a significantly effect on depressive symptoms.⁹ Increasing communication with other people may relieve pressure and alleviate depression, since friends and relatives may give psychological comfort. Several researchers have also demonstrated that depression is associated with alcohol use and smoking in other parts of world. Healthy lifestyles were related to the absence of depressive mood in Maastricht, Netherlands. Furthermore, there was a significant longitudinal predictive effect of excessive alcohol use at baseline on the presence of depressed mood.¹² *Depression, Alcohol Use and Smoking Over 1 Year* was a four-wave longitudinal study that involved 742 adults in the Los Angeles metropolitan area. In this study, Aneshensel and Huba (1983) found contradictory cross-sectional and longitudinal effects of alcohol use on depression. They inferred that high levels of alcohol use were related to low scores for depressive symptoms but that high initial levels of alcohol use were associated with subsequent increased depressive symptoms.¹³ Thus, I will also consider social activities, alcohol use and smoking as control variables in my analyses.

Data and Method

In this research project, I first determine the extent and pattern of depression in the married population of China and the correlation of depression, partnership factors, socio-demographic factors, and health-risk behaviors. I will use data from the *Chinese Health and Family Life Survey* (CHFLS). The CHFLS is a collaborative project of the University of Chicago; Renmin University, Beijing; Peking Union Medical College, Beijing; and the University of North Carolina. The survey contains 18 sections on: demography, health, attitudes toward marriage and sex, marital status, current spouse or sex partner, previous sex partners, other long term partners, short term partners, initial partner, sexual dysfunction, sexually transmitted diseases, childhood sexual experience, sexual harassment and unwanted sex, sexual consumption, masturbation and homosexuality, conclusion, and interviewer comments.

The sample is nationally representative of the adult population of China, ages 20 to 64 years old. Interviews were conducted between 1999 and 2000 in 18 widely dispersed provinces including Liaoning, Heilongjiang, Jilin, Gansu, Inner Mongolia, Shanxi, Hebei, Beijing, Tianjin, Henan, Shandong, Hunan, Anhui, Jiangsu, Zhejiang, Shanghai, Fujian, and Guangdong. The total sample size is 5000 and the response rate is 76 percent. For our analyses, the sample is restricted to married respondents.

Independent variables

Table 1 shows descriptive statistics for all independent variables by gender together with tests of differences across gender in distribution of variables. The sample was almost equally divided between married females and married males (51.1% vs. 48.9%). As table 1 shows,

after the sample was weighted, the majority of the respondents' partners have full-time jobs and 36.6% of them are agricultural producers. Women reported that their husbands were much more likely to participate in social activities after work than vice-versa. Overall, 74.3% of respondents felt that their partner took good care of them, although only 16.6% of couples reported that they spent the same time on housework. 51.7% of wives thought that their husbands did much less housework than they did, but only 2.4% of husbands felt their wives did much less housework. Table 1 also indicates that wives have higher proportion of not attending school than husbands and that more than half of the Chinese married people believe that men and women have equal social status.

Table 1 also presents respondents' socio-demographic characteristics, including respondents' gender, region, age, education level, work status, occupation, social activities, and personal income. As shown from Table 1, 72% of respondents lived in rural area in 2000, and more than half of respondents completed junior high school or above. Three-quarters of people have regular jobs, and these people had diverse occupations. There is an obvious difference between men and women's occupations. 62.7% of women report working as an agricultural producer, which is 20.2% higher than the percentage of men with the same occupation. However, 19.1% of men are self-employed, which is twice the number of women independent workers. 38.24% of Chinese reported socializing one or more times per week in the last 12 months. This frequency was higher among women ($P=0.03$).

In China, the average income of males is much higher than that of females ($P<0.001$); 58.3%

of women have monthly personal incomes of less than 400RMB¹, while only 23.6% of men reported incomes less than 400RMB. 10.3% of men and 3.6% of women reported monthly income equal to or greater than 2000RMB in the year of 2000.

Finally, table 1 shows results for alcohol use and smoking as risk behaviors. 65.6% of respondents never smoked, and only 52.4 % never drank. Smoking and drinking were much more common among husbands than among wives ($P < 0.001$ for each). For example, 95% of wives never drank or drank less than the minimum volume. In contrast, only 37% of husbands never drank or drank less than the minimum volume.

Dependent variable

A measure of depression symptoms was derived from responses to five questions. It will be seen from Table 2, that only a small percentage of respondents reported symptoms of depression. Thus,

- Only 1% reported being “very unhappy” over the past 12 months.
- Only 5% reported “often” feeling depressed in the past 3 months.

There was no statistically significant difference between the frequency of symptom reporting by husbands and wives (all $p > 0.15$).

A simple “count” scale

¹ The renminbi (RMB, sign: ¥; code: CNY; also CN¥, 元 and CN 元) is the official currency of China (People's Republic of China).

The five questions were recorded as dummy variables. Each answer was recoded to 1 when respondents reported that in the past 3 months they had always slept poorly; they often felt depressed; they often felt fatigued for unknown reasons; often felt more irritable than before; or in the past 12 months were very unhappy. All other answers were coded to 0. A score was computed by adding together the five 0-1 values for each question. This procedure gives a “count” scale of the number of depression symptoms the respondents reported.

Table 3 shows number of depression symptoms reported. On average, respondents reported very few symptoms of depression. The mean numbers of reported symptoms were 0.39 for wives and 0.37 for husbands ($p > 0.50$). The most common number of symptoms reported was zero (72% of wives and 77% of husbands). Nonetheless, we do note that 3.6% of respondents reported 3 or more of the 5 symptoms of depression.

Depression Factor²

As an initial test of the adequacy of a one-dimensional scale constructed from our 5-items, Cronbach’s alpha was computed. Its value (0.699) indicated that construction of a one-dimensional scale was plausible. Exploratory principal components factor analyses were then conducted. These analyses indicated that extraction of a single factor could account for 47% of the five items’ common variance. That single component had an eigenvalue of 2.38; no additional components had eigenvalues in excess of 1.0 as shown below.

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factorpoor_sleep - v_unhappy [aw=weight0x], factors (1) pcf
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² I did the analyses described in these two paragraphs. Prof. Turner drafted text to help explain the methodology.

(sum of wgt is 6.9585e+08)

(obs=3233)

Factor analysis/correlation Number of obs = 3233
 Method: principal-component factors Retained factors = 1
 Rotation: (unrotated) Number of params = 5

Factor	Eigenvalue	Difference	Proportion	Cumulative
Factor1	2.37558	1.61661	0.4751	0.4751
Factor2	0.75897	0.10173	0.1518	0.6269
Factor3	0.65724	0.01269	0.1314	0.7584
Factor4	0.64455	0.08089	0.1289	0.8873
Factor5	0.56366	.	0.1127	1.0000

LR test: independent vs. saturated: chi2(10) = 2722.56 Prob>chi2 = 0.0000

The factor loadings obtained from this analysis followed the expected pattern although the initial scaling gave high factor scores to persons who were NOT depressed; see table 4. Thus the two items for which a high score indicates the presence of depression³ had negative factor loadings and the three items for which a high score indicated lack of depression⁴ had a positive factor loading.

For our analyses, scoring was reversed by multiplying respondents' factor scores by minus one. Our primary outcome variable is thus a depression score.

Bivariable Analyses

The dependent variable for our analysis is the new factor variable. Since this is a continuous variable, we use linear regression. Through an analysis of the *CHFLS*, I attempted to seek out

³Always slept poorly in past 3 months; very unhappy in past 12 months.

⁴Never felt depressed in past year; never felt fatigued for no reason in past 3 months; and never more felt irritable in past three months.

the correlates of depression among Chinese husbands and wives.

Men and women have different social and family roles because of the different divisions of labor in society. According to traditional ideas, women focus more on child-rearing and housework and men focus more on supporting families financially. Because of the strong sex role stereotypes, I suspect that the influence of my independent variables may differ for husbands and wives. Therefore my models include interaction terms to reflect the gender differences, if any, in the impact of partner relationship, socio-demography and risk behaviors upon depression.

Table 5 presents the mean depression symptoms score by gender and by all independent variables. Partners' work status, occupation, levels of care, social status, respondents' occupation, personal income, and extent of smoking and drinking have significant relationships ($P < 0.05$) with depression individually. In addition, partners' work status, occupation, level of care, social status and respondents' drinking also have significant gender interaction in their relationship with depression. In addition, we note that there is no significant main effect of partners' education upon depression, but there is a significant gender interaction. The mean scores of wives' depression are negative if their husbands have a higher education level than elementary school, while the husbands' depression mean scores are negative when their wives' education level are elementary, junior high or university.

If husbands are managers, factory directors or business-owners, wives have the highest mean

depression score. However, if husbands work in government, the wives have the lowest mean depression score. The difference of time that husbands spend with their family may cause this phenomenon. The work of government staffs is much easier than the work of managers or business-owners in China, and thus government staffs may spend more time with their wives and children.

*Multivariable Analyses*⁵

Linear regression models were then employed to assess the net impact of independent variables. Each independent variable that had a significant effect on depression in bivariable analyses was included in the first regression model. The second regression model expanded upon the first model by including all the significant gender interaction. The final regression model was then pruned to eliminate independent variables that had an insubstantial effect.

Findings

Table 6 presents a multivariable regression predicting depression as a function of the partnership, socio-demographic, and risk behavior predictors. As shown in this model, depression was significantly associated with partner's full time job status, quality of caring in the marriage, housework patterns, and attitude on women's social status. Respondents with partners who had regular full time jobs had a lower level of depression. Moreover, people who felt they received enough care from spouses had lower depression scores.⁶ In addition,

5 Before any analysis was conducted I examined whether the independent variables are highly collinear. Appendix table 2A shows the correlation matrix. The variables do not display high correlations, so they can be put into one regression model.

6 Our results also seemed to suggest that if the partner spent much less time than respondent on housework, the respondent had a lower level of depression. This did not make sense, and we figured out that this was affected by the very small number of husbands (2.4%)

respondents believed that women enjoyed higher social status had an increased level of depression.

Besides the partnership predictors, individual socio-demographic variables and risk behaviors also affect respondents' depression. Respondent age has a negative effect on depression which becomes worse as age increases, and then reverses and becomes increasingly better when people's age increases above 40(Appendix: Graph1). Personal monthly income has a positive effect on depression which becomes weaker as income increases, but this association reverses at approximately 2500RMB. Beyond that point, depression scores become worse as personal monthly income increases beyond 2500RMB. (Appendix: Graph2).

Gender Interactions

Table 7 presents results of an expanded model that includes the gender interactions that were significant in our bivariable analyses. Results indicate that

- Depression levels were significantly elevated (+0.80, $p = 0.03$) for the female partners of managers;
- Depression levels were significantly elevated ((+0.442, $p = 0.05$) for females whose spouses did much less housework;
- Depression levels were significantly elevated (+0.54, $p < 0.001$) for females who worked in sales occupations.

reporting that their wives spent much less time on housework than they did; see Table 1.

- The association of partner's education and depression levels did not vary significantly by gender ($p = 0.403$).

There was also significant variation by gender in the association of depression and drinking ($p = 0.003$ for linear interaction; $p .012$ for curvilinear interaction). Since drinking is represented by both linear and non-linear terms (drinks squared), this interaction is complex. Graph 3 shows the model's predicted relationship between drinking and depression for males and for female. It will be seen from Graph 3 that the predicted depression levels of men are not substantially associated with depression in males, but they are for females. Predicted depression levels are highest among wives who report drinking on 100 days per year (i.e., every 3 to 7 days); they are lowest among wives who do not drink. In interpreting this result it is important to keep in mind that high levels alcohol consumption are rarely reported among Chinese wives; only 2% of wives reported drinking on 100 or more days a year.

Final Pruned Model

As a final step, I pruned the independent variables by dropping the variables with P more than 0.2 in table 7. The final result proved my hypothesis 1,2 and 4. The respondents felt happier and less depressed if their partners had full time jobs and they felt enough care from their partner. In addition, for both husband and wife believing that women had higher social status was associated with higher level of depression. Our results also rejected hypothesis 3 partners who spent much less time than respondents on chores didn't have higher levels of depression (Table 8).

Discussion:

In general, the marital relation is the most common social relation that has important effect on happy living and the stability of the country.¹⁹The correlation between partnership predictors and level of depression has been presented as positive, negative, or nonexistent. In the present study, the partner's work status, occupation, extent of partner care, housework pattern, and social status had effects on respondents' depression, especially the extent of partner care. Respondents are less likely to feel depression if they feel enough care from their partners. When partners do not feel any attention from each other, mutual affection no longer exists and depression results.

Traditional ideas about housework are also changing. In the process of modernization, more females are going to school and taking jobs after graduation. Chinese women are beginning to find the value and importance of their careers. Meanwhile, some husbands are beginning to share housework with their wives. Our results indicate that housework patterns have a significant effect on depression. Furthermore, wives are significantly more depressed (+0.4, $p=0.05$) if their husbands do much less housework.

The male superiority conception, which prevailed for more than ten centuries in ancient Chinese society, produced a huge influence on Chinese opinions. In that period, China had achieved economic prosperity and culture flourish, and social status of women had also been greatly improved.²⁰ However, there are some individual in families that think that women

have higher society status than men have. Interpreted from the result, people would feel more depression when they consider that women have higher social status.

Based on my research,partnership factors have strong effects on depression when we control for demography characteristics and risk behavior. Research on how partnership factors in marriage effect on depression are important not only for the wellness of individuals, but also for the good of society in China. It helps people in society understand the factors that cause men and women to become depressed.

Tables and Graphs

Table 1 Socio-demographic characteristics, social and marital behaviors, alcohol and tobacco use of married respondents in 2000 Chinese Health and Family Life Survey by gender.

CHARACTERISTICS <i>(Unweighted N)</i>	Female <i>(n=1,638)</i>	Male <i>(n=1,596)</i>	BOTH <i>(n=3,234)</i>	P <i>M vs. F</i>
Gender	51.1%	48.9%	100.0%	NA
a24:In the past one month, has your partner been working?				
1. Never worked in lifetime	0.3%	4.1%	2.3%	
2. Worked before, but have no job now	4.9%	14.3%	9.8%	
3. Retired and have no temporary job	6.4%	5.1%	5.7%	P=0.0014
4. Working as a temp	27.7%	11.5%	19.3%	
5. Has a full-time job	60.8%	65.1%	63.0%	
a25:Currently, what kind of work does you partner do?				
1. Agricultural producer [farmer]	29.3%	43.8%	36.6%	
2. Manual worker	32.5%	16.7%	24.5%	
3. Sales, service, entertainment industry worker	5.3%	10.0%	7.7%	
4. Self-employed, independent worker (getihu/laodongzhe, < 8 workers)	15.0%	17.0%	16.0%	
5. Clerical worker, low-rank bureaucrat, office worker	7.2%	6.7%	7.0%	P = 0.0369
6. Technical worker, teacher, intellectual (i.e., professional/technical worker)	4.5%	3.0%	3.7%	
7. Manager, factory director, business-owner	1.1%	0.5%	0.8%	
8. Government official (including village official)	4.7%	0.5%	2.6%	
9. Other occupation	0.6%	1.8%	1.2%	
a26:In the past 12 months, how often did your partner participate in social activities after work				
1. 2 - 3 times a week or more	28.4%	6.8%	17.9%	
2. Once a week	14.5%	5.1%	9.9%	
3. 2 - 3 times a month	12.6%	8.0%	10.4%	P> t =0.000
4. Once a month or less	20.6%	23.3%	22.0%	
5. Never	23.9%	56.7%	39.9%	
a41:Does your partner take good and sufficient care of you in daily life?				
1. Enough	68.0%	80.9%	74.3%	
2. Not enough	25.7%	16.5%	21.2%	
3. Very insufficient	4.5%	1.9%	3.2%	P> t =0.016
4. None	1.9%	0.6%	1.3%	
a32:Does your partner spend more time on chores than you do?				
1. Much more than me	31.8%	52.6%	27.3%	
2. A bit more than me	43.6%	25.6%	14.7%	P> t =0.000
3. Both about the same	19.1%	14.1%	16.6%	

4. A bit less than me	21.7%	5.3%	13.7%	
5. Much less than me	51.7%	2.4%	27.6%	
a21:Your partner's level of education is				
1. Never attended school	8.1%	20.6%	14.2%	
2. Elementary school	27.6%	33.6%	30.5%	
3. Junior high school	42.8%	33.0%	38.0%	
4. Senior high school / professional training school / vocational high school	16.6%	10.5%	13.6%	P = 0.0000
5. Junior college	3.1%	1.6%	2.4%	
6. University / graduate school	1.7%	7.4%	1.3%	
jb03:In your opinion, do men enjoy higher social status or do women enjoy higher social status in China today?				
1. Men enjoy higher social status	36.7%	26.3%	31.6%	
2. More or less the same	57.2%	63.6%	60.3%	P> t =0.000
3. Women enjoy higher social status	6.1%	10.1%	8.1%	
Urban:Urban or rural region				
0.rural	72.6%	71.3%	72.0%	P = 0.5140
1.urban	27.4%	28.7%	28.0%	
zj07:Your level of education is				
1. Never attended school	21.2%	10.0%	15.7%	
2. Elementary school	31.9%	25.4%	28.7%	
3. Junior high school	31.8%	44.2%	37.9%	
4. Senior high school / professional training school / vocational high school	11.9%	15.5%	13.7%	P = 0.0097
5. Junior college	2.5%	3.1%	2.8%	
6. University / graduate school	0.6%	1.8%	1.2%	
zj19:Are you currently working?				
1. Never worked during lifetime	1.4%	0.3%	0.9%	
2. Worked before, but have no job now	12.2%	3.8%	8.1%	
3. Retired and have no temporary job	3.8%	3.9%	3.8%	P = 0.0000
4. Working as a temp [linshixinggongzuo]	11.3%	11.9%	11.6%	
5. Have a full-time job, or working on a farm	71.4%	80.2%	75.7%	
zj20:Currently, what kind of job do you mainly do?				
1. Agricultural producer [farmer]	62.7%	42.5%	52.7%	P = 0.0023
2. Manual worker	13.7%	17.1%	15.4%	
3. Sales, service, entertainment industry worker	5.8%	5.4%	5.6%	
4. Self-employed, independent worker [i.e., <8 workers, getihu, getilaodongzhe]	9.5%	19.1%	14.2%	
5. Clerical worker, low-rank bureaucrat, office worker	4.9%	6.3%	5.6%	
6. Technical worker, teacher, intellectual [i.e, professional/technical]	2.2%	3.8%	3.0%	
7. Manager, factory director, business-owner	0.2%	1.8%	1.0%	
8. Government official (including village official)	0.6%	2.9%	1.7%	

9. Other occupation	0.3%	1.1%	0.7%		
zj23: During the past 12 months, how often did you participate in social activities after work?					
1. On average 2 - 3 times a week or more	32.5%	20.8%	26.8%		
2. On average once a week	12.0%	11.0%	11.5%		
3. On average 2 - 3 times a month	9.6%	11.1%	10.3%	P> t =0.003	
4. On average once a month or less	17.0%	22.4%	19.6%		
5. Never	29.1%	34.8%	31.9%		
zj16: Over the past 12 months, approximately how much was your personal income per month?					
income<400	58.3%	23.6%	37.7%		
400<=income<600	18.2%	22.8%	20.9%		
600<=income<900	13.6%	26.7%	21.3%	P> t =0.000	
900<=income<2000	6.4%	16.7%	12.5%		
income>=2000	3.6%	10.3%	7.6%		
JK06: In the past 12 months, on average, how many cigarettes did you smoke per day?					
1. Never or almost never smoked	95.0%	34.9%	65.6%		
2. Less than 10 a day	3.4%	17.7%	10.4%		
3. 10 to 19 a day	0.5%	16.7%	8.4%	P> t =0.000	
4. A pack or more a day	1.0%	30.8%	15.6%		
JK07 In the past 12 months, how often did you drink alcohol?					
1. Everyday / once every two days or more often	1.1%	28.6%	14.6%		
2. Every 3 to 7 days	0.8%	17.1%	8.7%		
3. Every 8 to 30 days	0.8%	9.0%	4.8%		
4. Over 30 days	2.6%	8.1%	5.3%	P> t =0.000	
5. Drank alcohol but did not reach the volume specified above	16.9%	11.4%	14.2%		
6. Never drank	77.8%	25.8%	52.4%		

Table2 Responses to five questions on symptoms of depression by married respondents in 2000 Chinese Health and Family Life Survey (CHFLS) by gender.

SYMPTOMS	Female (n=1,638)	Male (n=1,596)	BOTH (n=3,234)	P* M vs. F
In the past 3 months, did you sleep well or poorly at night?⁷				
1. Usually slept well	57.1%	64.0%	60.5%	P> t =0.156
2. Sometimes slept well	32.6%	25.7%	29.2%	
3. Always slept poorly	10.3%	10.3%	10.3%	
In the past 3 months, did you or not often feel depressed?⁸				
1. Often	4.4%	5.8%	5.1%	P> t =0.225
2. Sometimes	42.8%	46.4%	44.6%	
3. Never	52.8%	47.8%	50.4%	
In the past 3 months, have you felt fatigued for reasons unknown to you?⁹				
1. Often	4.5%	5.1%	4.8%	P> t =0.181
2. Sometimes	38.6%	29.7%	34.2%	
3. Never	56.9%	65.2%	61.0%	
In the past 3 months, have you felt more irritable than before?¹⁰				
1. Often	1.9%	3.6%	2.7%	P> t =0.932
2. Sometimes	32.1%	29.5%	30.8%	
3. Never	66.0%	66.9%	66.4%	
Generally speaking, in the past 12 months, how happy were you?¹¹				
1. Very happy	18.9%	18.2%	18.5%	P> t =0.480
2. Somewhat happy	63.5%	69.8%	66.6%	
3. Not too happy	16.6%	10.5%	13.6%	
4. Very unhappy	1.1%	1.5%	1.3%	

NOTE

*P values for gender differences in response are calculated using ordered logistic regression which treats the dependent variables (Depression Symptoms) as ordinal variables. Analysis uses the svy procedures of Stata v. 12 to take account of weighting and complex sample design of the CHFLS

⁷最近3个月以来,你晚上睡觉好不好?

⁸最近3个月以来,你是不是曾经感到情绪低落,心里发闷,垂头丧气?

⁹最近3个月来,你曾经无缘无故感到疲劳吗?也就是说,不是因为工作,劳动,文体娱乐等等,而是没有任何原因,就感到累.

¹⁰最近3个月以来,你比以前更容易生气吗?

¹¹总的来说,最近12个月以来,你觉得自己生活的愉快吗?

Table3 Number of symptoms of depression reported by married respondents in 2000 Chinese Health and Family Life Survey (CHFLS) by gender.

NUMBER OF SYMPTOMS	Female <i>(n=1,638)</i>	Male <i>(n=1,596)</i>	BOTH <i>(n=3,234)</i>
0	71.5%	76.9%	74.1%
1	22.6%	15.2%	19.0%
2	3.0%	3.7%	3.3%
3	1.8%	2.5%	2.1%
4	0.9%	1.6%	1.3%
5	0.2%	0.1%	0.2%
<i>Mean</i>	<i>0.39</i>	<i>0.37</i>	<i>0.38</i>
<i>SE</i>	<i>0.06</i>	<i>0.08</i>	<i>0.07</i>
<i>P: Gender Difference = 0.704</i>			

Table4 Factor loadings for "depression" factor in 2000 Chinese Health and Family Life Survey.

SYMPTOMS	FACTOR LOADING
In the past 3 months, did you sleep well or poorly at night? (High = Always slept poorly)	-0.629
In the past 3 months, did you or not often feel depressed? (High = Never)	0.752
In the past 3 months, have you felt fatigued for reasons unknown to you? (High = Never)	0.704
In the past 3 months, have you felt more irritable than before? (High = Never)	0.691
Generally speaking, in the past 12 months, how happy were you? (High = Very Unhappy)	-0.666

NOTE. Results from principal components factor analysis using aweight option to adjust for non-equivalent sampling weights. A single factor was extracted since eigenvalues for additional factors were less than 1.0.

Table5 Depression symptom score by gender and by socio-demographic characteristics, social and marital behaviors, alcohol and tobacco use for married respondents in 2000 Chinese Health and Family Life Survey by gender.

CHARACTERISTICS <i>(Unweighted N)</i>	Female	Male	BOTH	BOTH		P	P
	<i>(n=1,638)</i>	<i>(n=1,596)</i>	<i>(n=3,234)</i>	[95% Conf.	Interval]	Main Effect	Gender Interaction
Gender	0.022	-0.023	0	-0.184	0.184	$P= t =0.594$	NA
a24:In the past one month, has your partner been working?							
1. Never worked in lifetime	-0.098	-0.003	-0.009	-0.362	0.345		
2. Worked before, but have no job now	0.547	-0.047	0.098	-0.287	0.482		
3. Retired and have no temporary job	-0.51	-0.024	-0.287	-0.519	-0.055	Prob>F=0.0526	Prob>F=0.0033
4. Working as a temp	0.049	0.163	0.084	-0.099	0.267		
5. Has a full-time job	-0.118	-0.132	-0.125	-0.285	0.034		
a25:Currently, what kind of work does you partner do?							
1. Agricultural producer [farmer]	-0.071	-0.047	-0.057	-0.368	0.255		
2. Manual worker	-0.034	-0.099	-0.056	-0.192	0.08		
3. Sales, service, entertainment industry worker	-0.028	-0.018	-0.021	-0.207	0.164		
4. Self-employed, independent worker (getihu/laodongzhe, < 8 workers)	-0.092	-0.116	-0.105	-0.26	0.05		
5. Clerical worker, low-rank bureaucrat, office worker	-0.128	-0.157	-0.142	-0.309	0.024	Prob>F=0.0063	Prob>F= 0.0023
6. Technical worker, teacher, intellectual (i.e., professional/technical worker)	0.165	0.021	0.107	-0.127	0.341		
7. Manager, factory director, business-owner	0.35	-0.751	-0.01	-0.677	0.656		
8. Government official (including village official)	-0.402	-0.329	-0.395	-1.048	0.258		
9. Other occupation	0.044	-0.233	-0.167	-0.766	0.432		
a26:In the past 12 months, how often did your partner participate in social activities after work							
1. 2 - 3 times a week or more	-0.011	-0.226	-0.051	-0.246	0.145		
2. Once a week	0.099	-0.041	0.064	-0.346	0.473		
3. 2 - 3 times a month	0.042	0.034	0.039	-0.127	0.205	Prob>F=0.5384	Prob>F=0.8545
4. Once a month or less	-0.113	-0.161	-0.138	-0.379	0.103		
5. Never	0.109	0.031	0.055	-0.187	0.297		
a41:Does your partner take good and sufficient care of you in daily life?							
1. Enough	-0.165	-0.158	-0.161	-0.346	0.024		
2. Not enough	0.385	0.422	0.399	0.167	0.632	Prob>F=0.0004	Prob>F= 0.0761
3. Very insufficient	0.595	1.464	0.849	0.26	1.438		
4. None	0.403	1.102	0.576	0.074	1.078		
a32:Does your partner spend more time on chores than you do?							

1. Much more than me	0.224	-0.07	-0.052	-0.318	0.214		
2. A bit more than me	-0.04	0.118	0.094	-0.203	0.392		
3. Both about the same	0.118	-0.207	-0.016	-0.211	0.178	Prob>F=0.3408	Prob>F=0.5168
4. A bit less than me	-0.034	0.205	0.011	-0.155	0.178		
5. Much less than me	0.006	-0.351	-0.009	-0.258	0.24		
a21:Your partner's level of education is							
1. Never attended school	0.152	0.225	0.203	-0.207	0.614		
2. Elementary school	0.113	-0.154	-0.031	-0.291	0.23		
3. Junior high school	-0.042	-0.073	-0.055	-0.238	0.127		
4. Senior high school / professional training school / vocational high school	-0.028	0.034	-0.004	-0.127	0.118	Prob>F=0.1216	Prob>F=0.0000
5. Junior college	-0.041	0.336	0.084	-0.096	0.265		
6. University / graduate school	-0.077	-0.16	-0.101	-0.218	0.015		
jb03:In your opinion, do men enjoy higher social status or do women enjoy higher social status in China today?							
1. Men enjoy higher social status	0.083	0.017	0.056	-0.057	0.169		
2. More or less the same	-0.103	-0.087	-0.095	-0.3	0.11	Prob>F=0.0005	Prob>F=0.0948
3. Women enjoy higher social status	0.817	0.305	0.508	0.1	0.916		
Urban:Urban or rural region							
0.rural	0.036	0.043	0.04	-0.046	0.126		
1.urban	0.016	-0.049	-0.015	-0.267	0.236	Prob>F=0.6760	Prob>F=0.6014
zj07:Your level of education is							
1. Never attended school	-0.018	-0.043	-0.025	-0.393	0.342		
2. Elementary school	0.045	0.028	0.037	-0.208	0.283		
3. Junior high school	0.024	-0.066	-0.027	-0.219	0.164		
4. Senior high school / professional training school / vocational high school	0.043	0.009	0.024	-0.096	0.145	Prob>F=0.7357	Prob>F=0.3857
5. Junior college	-0.042	0.107	0.039	-0.145	0.222		
6. University / graduate school	-0.135	-0.06	-0.079	-0.241	0.082		
zj19:Are you currently working?							
1. Never worked during lifetime	0.385	-0.466	0.227	-0.391	0.845		
2. Worked before, but have no job now	0.03	0.163	0.06	-0.22	0.341		
3. Retired and have no temporary job	-0.115	-0.071	-0.093	-0.303	0.116	Prob>F= 0.2515	Prob>F=0.4098
4. Working as a temp [linshixinggongzuo]	0.028	0.332	0.179	0.046	0.311		
5. Have a full-time job, or working on a farm	0.019	-0.079	-0.032	-0.261	0.197		
zj20:Currently, what kind of job do you mainly do?							
1. Agricultural producer [farmer]	0.008	0.06	0.028	-0.255	0.312	Prob>F=0.0014	Prob>F= 0.0112
2. Manual worker	0.087	-0.108	-0.019	-0.205	0.168		
3. Sales, service, entertainment industry worker	0.366	-0.112	0.139	-0.042	0.32		
4. Self-employed, independent worker [i.e., <8 workers, getihu, getilaodongzhe]	-0.094	-0.153	-0.133	-0.243	-0.023		

5. Clerical worker, low-rank bureaucrat, office worker	-0.253	0.111	-0.05	-0.343	0.243		
6. Technical worker, teacher, intellectual [i.e., professional/technical]	-0.085	-0.036	-0.054	-0.224	0.115		
7. Manager, factory director, business-owner	-0.037	0.125	0.112	-0.285	0.509		
8. Government official (including village official)	0.041	-0.31	-0.245	-0.678	0.188		
9. Other occupation	0.515	0.351	0.39	-0.433	1.214		
zj23: During the past 12 months, how often did you participate in social activities after work?							
1. On average 2 - 3 times a week or more	-0.086	-0.167	-0.117	-0.355	0.122		
2. On average once a week	-0.066	-0.024	-0.046	-0.36	0.267		
3. On average 2 - 3 times a month	0.172	0.106	0.138	0.033	0.242	Prob>F=0.0108	Prob>F=0.5328
4. On average once a month or less	0.087	-0.171	-0.056	-0.336	0.224		
5. Never	0.09	0.117	0.104	-0.074	0.283		
zj16: Over the past 12 months, approximately how much was your personal income per month?							
income<400	0.069	0.318	0.16	-0.129	0.449		
400<=income<600	-0.064	-0.108	-0.092	-0.316	0.132		
600<=income<900	-0.098	-0.049	-0.062	-0.272	0.148	Prob>F=0.0564	Prob>F=0.5227
900<=income<2000	-0.185	-0.268	-0.251	-0.436	-0.065		
income>=2000	0.074	-0.262	-0.197	-0.273	-0.121		
JK06: In the past 12 months, on average, how many cigarettes did you smoke per day?							
1. Never or almost never smoked	0.017	0.123	0.09	-0.139	0.227		
2. Less than 10 a day	-0.003	-0.045	-0.038	-0.342	0.267		
3. 10 to 19 a day	-0.347	-0.165	-0.17	-0.306	-0.035	Prob>F=0.0259	Prob>F=0.1514
4. A pack or more a day	0.709	-0.096	-0.068	-0.28	0.144		
JK07 In the past 12 months, how often did you drink alcohol?							
1. Everyday / once every two days or more often	0.821	-0.171	-0.132	-0.374	0.109		
2. Every 3 to 7 days	0.722	-0.063	-0.028	-0.224	0.169		
3. Every 8 to 30 days	0.438	0.778	0.75	0.229	1.271		
4. Over 30 days	0.645	0.081	0.228	0.032	0.424	Prob>F= 0.0000	Prob>F=0.0000
5. Drank alcohol but did not reach the volume specified above	0.177	-0.04	0.092	-0.123	0.306		
6. Never Drank	-0.055	-0.135	-0.075	-0.219	0.07		

Table6 Depression symptom regression by socio-demographic characteristics, social and marital behaviors, alcohol and tobacco use for married respondents

Depression symptom	Coef.	Std. Err.	t	P>t	[95% Conf. Interval]	
Demographic characteristics						
Male		Ref				
Female	-0.180	0.152	-1.190	0.243	-0.489	0.128
Respondents' age	0.093	0.017	5.540	0.000	0.059	0.127
Age square	-0.001	0.000	-5.660	0.000	-0.002	-0.001
Personal monthly income	0.000	0.000	1.920	0.063	0.000	0.000
log income squared	-0.016	0.003	-5.380	0.000	-0.022	-0.010
Partnership predictors						
Partner does not have a full time job		Ref				
Partner has a full time job	-0.110	0.063	-1.750	0.090	-0.239	0.018
Partner is not a manager		Ref				
Partner is a manager	0.171	0.342	0.500	0.621	-0.524	0.865
Partner take enough care of respondent		Ref				
Partner doesn't take enough care of respondent	0.646	0.083	7.770	0.000	0.477	0.815
Partner doesn't spend much less time than respondents on		Ref				
Partner spend much less time than respondents on chores	-0.213	0.054	-3.950	0.000	-0.322	-0.103
Partner education level	0.000	0.011	-0.010	0.995	-0.023	0.023
Women do not have higher social status than men		Ref				
Women has higher social status than men	0.391	0.106	3.690	0.001	0.175	0.606
Social predictors						
Respondent education level	0.009	0.034	0.250	0.803	-0.061	0.078
Respondent education level square	0.001	0.002	0.510	0.616	-0.003	0.005
Respondent doesn't have a full time job		Ref				
Respondent has a full time job	-0.118	0.079	-1.490	0.147	-0.278	0.043
Respondent is not a sales		Ref				
Respondent is a sales	0.030	0.119	0.250	0.804	-0.213	0.273
Respondent is a clerk		Ref				
Respondent is not a clerk	0.022	0.148	0.150	0.882	-0.279	0.324
Respondent doesn't work in government		Ref				
Respondent works in government	-0.234	0.179	-1.310	0.201	-0.598	0.130
Respondent social actives	0.000	0.001	-0.120	0.907	-0.001	0.001
Risk behavior characteristics						
respondent smoke	-0.00002	0.000	-1.680	0.101	0.000	0.000
respondent drink	0.00128	0.002	0.850	0.403	-0.002	0.004
respondent drink square	-0.00001	0.000	-1.060	0.298	0.000	0.000
_cons	-1.349	0.509	-2.650	0.012	-2.382	-0.315

Table7 Depression symptom regression by socio-demographic characteristics, social and marital behaviors, alcohol and tobacco use for married respondents with gender interaction variables

Depression symptom	Coef.	Std. Err.	t	P>t	[95% Conf. Interval]	
Demographic characteristics						
Male	Ref					
Female	-0.114	0.337	-0.340	0.737	-0.798 0.571	
Respondents' age	0.090	0.017	5.400	0.000	0.056 0.123	
Age square	-0.001	0.000	-5.620	0.000	-0.001 -0.001	
Personal monthly income	0.000	0.000	2.020	0.051	0.000 0.000	
log income squared	-0.017	0.003	-5.850	0.000	-0.023 -0.011	
Partnership predictors						
Partner does not have a full time job	Ref					
Partner has a full time job	-0.105	0.061	-1.710	0.096	-0.229 0.020	
Partner is not a manager	Ref					
Partner is a manager	-0.450	0.303	-1.490	0.147	-1.065 0.165	
Respondent is female and husband is not a manager	Ref					
Respondent is female and husband is a manager	0.797	0.348	2.290	0.028	0.090 1.505	
Partner take enough care of respondent	Ref					
Partner doesn't take enough care of respondent	0.656	0.080	8.170	0.000	0.493 0.819	
Partner doesn't spend much less time than respondents on chores	Ref					
Partner spend much less time than respondents on chores	-0.616	0.221	-2.790	0.008	-1.064 -0.168	
Respondent is female and husband doesn't do much less housework	Ref					
Respondent is female and husband does much less housework	0.442	0.213	2.080	0.045	0.010 0.874	
Partner education level	0.013	0.013	1.000	0.324	-0.014 0.040	
Partner education level by gender	-0.026	0.030	-0.850	0.403	-0.087 0.036	
Women do not have higher social status than men	Ref					
Women has higher social status than men	0.424	0.103	4.140	0.000	0.216 0.633	
Social predictors						
Respondent education level	0.009	0.036	0.240	0.815	-0.065 0.082	
Respondent education level square	0.001	0.002	0.430	0.669	-0.003 0.004	
Respondent doesn't have a full time job	Ref					
Respondent has a full time job	-0.111	0.084	-1.320	0.195	-0.281 0.060	
Respondent is not a sales	Ref					
Respondent is a sales	-0.262	0.096	-2.720	0.010	-0.458 -0.066	
Respondent is female and she is not a sales	Ref					
Respondent is female and she is a sales	0.543	0.120	4.520	0.000	0.299 0.787	
Respondent is a clerk	Ref					
Respondent is not a clerk	0.046	0.154	0.290	0.770	-0.268 0.359	
Respondent doesn't work in government	Ref					
Respondent works in government	-0.230	0.173	-1.330	0.194	-0.583 0.122	
Respondent social actives	0.000	0.001	-0.310	0.760	-0.002 0.002	
Respondent social actives by gender	0.001	0.001	0.600	0.556	-0.002 0.003	
Risk behavior characteristics						
Respondent smoke	0.000	0.000	-1.530	0.135	0.000 0.000	
Respondent drink	0.000	0.001	-0.400	0.691	-0.003 0.002	
Respondent drink square	0.000	0.000	0.060	0.952	0.000 0.000	
Respondent drink by gender	0.012	0.004	3.180	0.003	0.004 0.019	
Respondent drink square by gender	0.000	0.000	-2.640	0.012	0.000 0.000	
_cons	-1.321	0.532	-2.490	0.018	-2.401 -0.241	

Table8 Depression symptom final regression by socio-demographic characteristics, social and marital behaviors, alcohol and tobacco use for married respondents with gender interaction variables

Depression symptom	Coef.	Std. Err.	t	P>t	[95% Conf. Interval]	
Demographic characteristics						
Respondents' age	0.083	0.018	4.560	0.000	0.046 0.120	
Age square	-0.001	0.000	-4.600	0.000	-0.001 -0.001	
Personal monthly income	0.000	0.000	2.100	0.043	0.000 0.000	
log income squared	-0.014	0.003	-4.240	0.000	-0.021 -0.007	
Partnership predictors						
Partner does not have a full time job	Ref					
Partner has a full time job	-0.100	0.054	-1.860	0.071	-0.209 0.009	
Partner is not a manager	Ref					
Partner is a manager	-0.567	0.311	-1.820	0.078	-1.200 0.066	
Respondent is female and husband is not a manager	Ref					
Respondent is female and husband is a manager	0.900	0.384	2.340	0.025	0.119 1.681	
Partner take enough care of respondent	Ref					
Partner doesn't take enough care of respondent	0.649	0.071	9.180	0.000	0.505 0.792	
Partner doesn't spend much less time than respondents on chores	Ref					
Partner spend much less time than respondents on chores	-0.519	0.202	-2.570	0.015	-0.929 -0.108	
Respondent is female and husband doesn't do much less housework	Ref					
Respondent is female and husband does much less housework	0.227	0.213	1.070	0.293	-0.205 0.659	
Women do not have higher social status than men	Ref					
Women has higher social status than men	0.440	0.105	4.210	0.000	0.228 0.653	
Social predictors						
Respondent doesn't have a full time job	Ref					
Respondent has a full time job	-0.113	0.099	-1.140	0.263	-0.315 0.089	
Respondent is not a sales	Ref					
Respondent is a sales	-0.179	0.100	-1.790	0.082	-0.383 0.024	
Respondent is female and she is not a sales	Ref					
Respondent is female and she is a sales	0.398	0.139	2.860	0.007	0.115 0.681	
Respondent doesn't work in government	Ref					
Respondent works in government	-0.192	0.210	-0.920	0.365	-0.618 0.234	
Risk behavior characteristics						
respondent smoke	0.000	0.000	-1.210	0.235	0.000 0.000	
respondent drink	0.003	0.002	1.660	0.106	-0.001 0.006	
respondent drink square	0.000	0.000	-1.620	0.114	0.000 0.000	
respondent drink by gender	0.007	0.004	1.960	0.058	0.000 0.014	
respondent drink square by gender	0.000	0.000	-1.600	0.118	0.000 0.000	
_cons	-1.229	0.411	-2.990	0.005	-2.063 -0.394	

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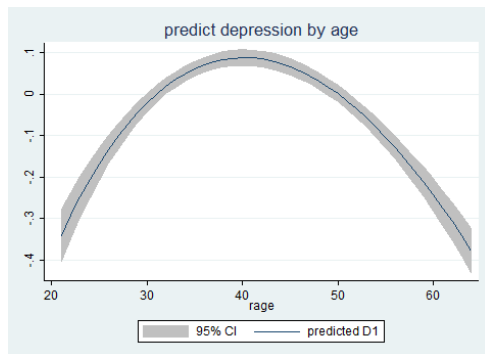
Appendix:

Table A1 Independent Variables

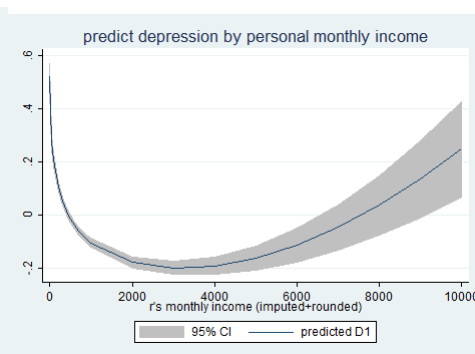
Variable	Operational definition
Socio-Demographic	
Predictors	
Gender	The gender of respondents (Male=1)
Region	The region of residence of respondents (Urban=1)
Age	Actual age in single years, range 20 to 64
Education	Six categories: no school, elementary, junior high, senior high school, junior college and University
Work status	Four categories: unemployed, retired, temp, and regular work
Occupation	Nine categories: farmer, manual, sales, self-employed, clerical, professional, manager, government and others
Frequency of socializing activity	In the past 12 months, how often the respondent participated in social activities after work
Personal income	Respondents' personal monthly income in RMB
Primary partnership predictors	
Marital status	Currently married vs. single/divorced/widowed/cohabiting
Partner work status	Four categories: unemployed, retired, temp, and regular work
Partner education	Six categories: no school, elementary, junior high, senior high school, junior college and University
Partner's occupation	Nine categories: farmer, manual, sales, self-employed, clerical, professional, manager, government and others
Partner socializing activity	In the past 12 months, how often the respondent's partner participated in social activities after work
Quality of partner take care	Does your partner take good and sufficient care of you in daily life? Four categories: from enough to none
Housework	Compare respondent with partner spend time on chores. Three categories: more, same, less
Attitude on social status	Attitude on male and female social status. Three categories: men higher, same, women higher
Risk behaviors	
Smoke	In the past 12 months, how many cigarettes did respondent smoke per day.
Drink	In the past 12 months, how often did respondent drink alcohol.

Table A2 Descriptive statistics for independent variables

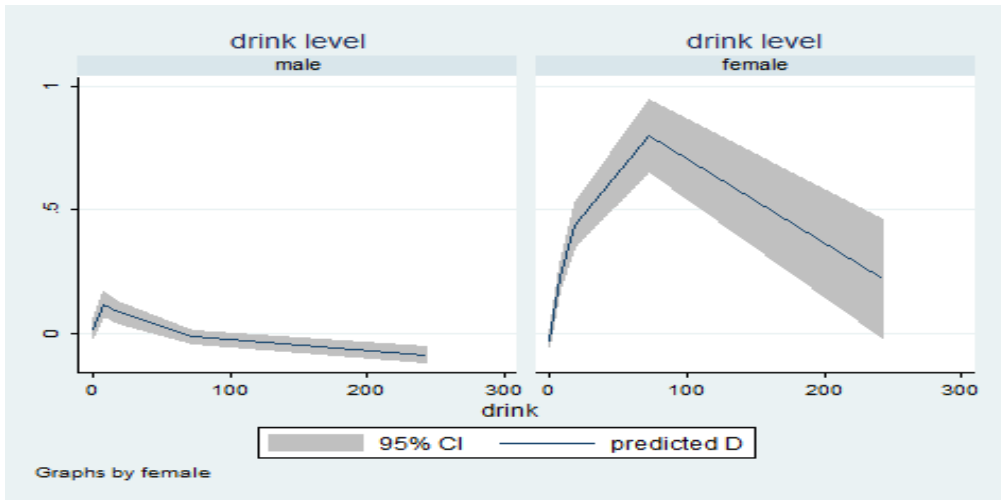
Variable types		depress	female	age	incrm	pfulltime	pmanager	pcare	Hou~rk	peduc	W~sta	reduc	Rfu~e	rsales	rclerk	Rgo~n	rsoc	smoke	drink	
depress	Metric	1.00																		
female	Binary	0.00	1.00																	
age	Metric	-0.01	-0.06	1.00																
income	Metric	-0.08	-0.20	-0.03	1.00															
pfulltime	Binary	-0.09	0.07	-0.24	0.08	1.00														
pmanager	Binary	0.02	0.09	-0.02	0.09	0.06	1.00													
pcare	Binary	0.24	0.16	-0.06	0.00	0.00	0.01	1.00												
housework	Binary	0.03	0.48	0.01	-0.14	0.03	0.09	0.19	1.00											
peduc	Metric	0.01	0.16	-0.14	0.21	0.17	0.07	0.06	0.02	1.00										
womensta	Binary	0.08	-0.08	0.05	-0.04	-0.05	-0.02	0.03	0.00	-0.07	1.00									
reduc	Metric	0.03	-0.12	-0.14	0.28	0.15	0.03	0.08	-0.16	0.58	-0.05	1.00								
rfulltime	Binary	-0.06	-0.21	-0.19	0.18	0.35	-0.03	-0.03	-0.11	0.04	-0.02	0.15	1.00							
rsales	Binary	0.02	0.07	-0.09	-0.02	-0.02	0.02	0.08	0.02	0.04	0.03	0.00	-0.14	1.00						
rclerk	Binary	0.00	0.00	0.01	0.06	0.07	0.01	0.02	-0.02	0.23	-0.06	0.28	0.09	-0.15	1.00					
rgovern	Binary	-0.03	-0.06	0.13	0.09	0.02	0.01	-0.05	-0.05	0.07	-0.03	0.13	0.07	-0.07	-0.07	1.00				
rsoc	Binary	-0.01	0.01	0.07	0.06	-0.01	-0.01	-0.01	0.08	0.03	0.01	0.01	-0.02	-0.03	0.04	0.01	1.00			
smoke	Metric	0.03	-0.56	0.05	0.11	-0.04	-0.05	-0.08	-0.25	-0.13	0.08	-0.01	0.10	-0.06	-0.04	0.03	0.04	1.00		
drink	Metric	-0.01	-0.48	0.01	0.12	0.01	-0.03	-0.07	-0.21	-0.11	0.08	0.03	0.11	-0.02	-0.02	0.03	0.07	0.41	1.00	



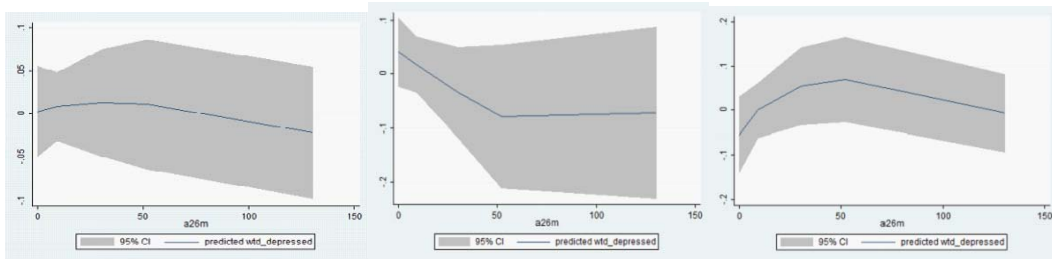
Graph 1 Age two way ffitci with predict depression



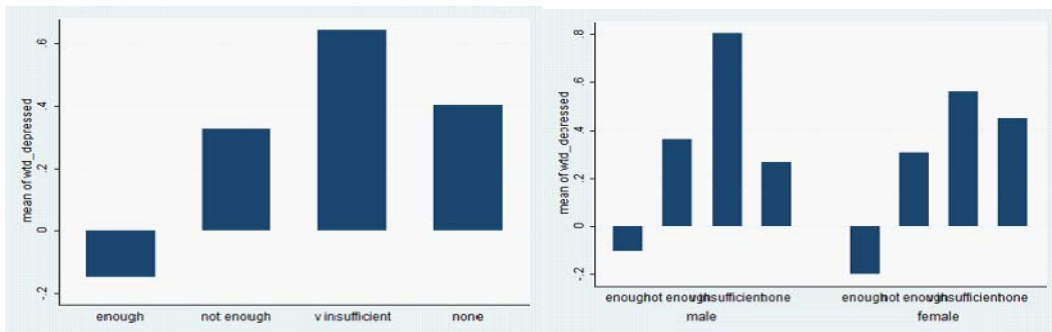
Graph 2 Income two way ffitci with predict depression



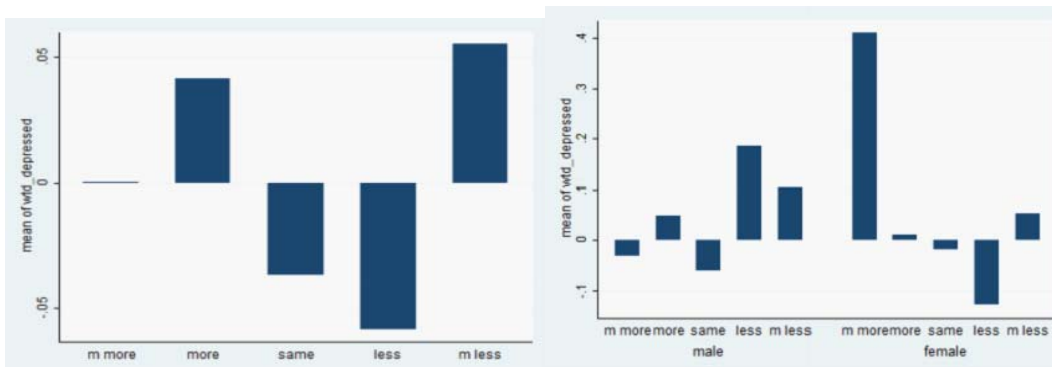
Graph3 drink level two way pffitci with predict depression by gender



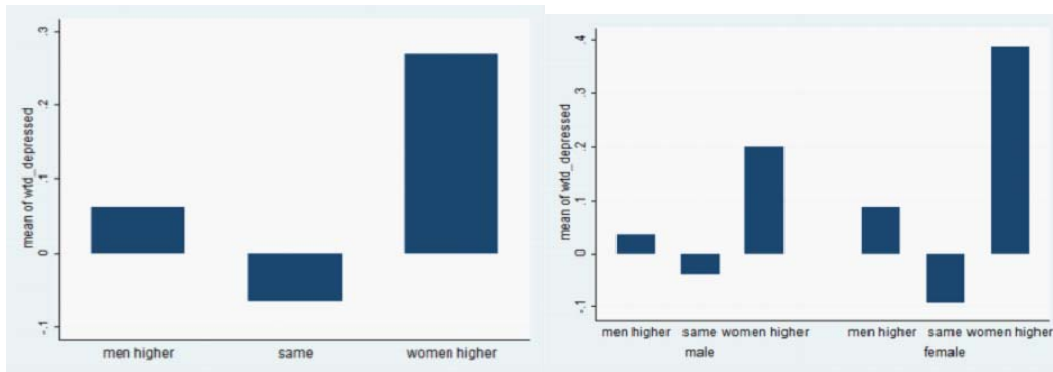
Graph4 Partner participate in social activities two way pffitci with depression by both, male and female



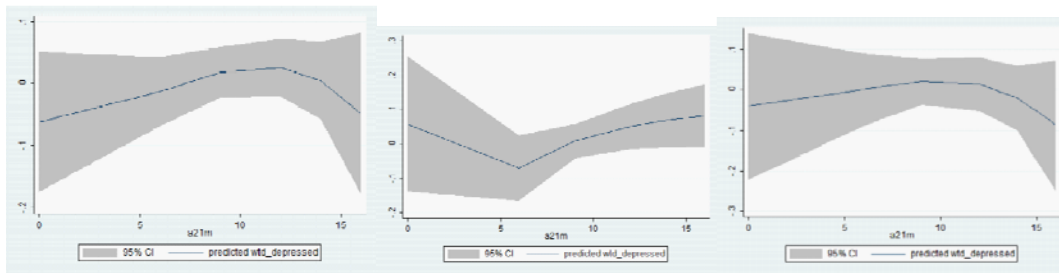
Graph 5 Bar graph of partner take good care of respondent life with depression by both, male and female



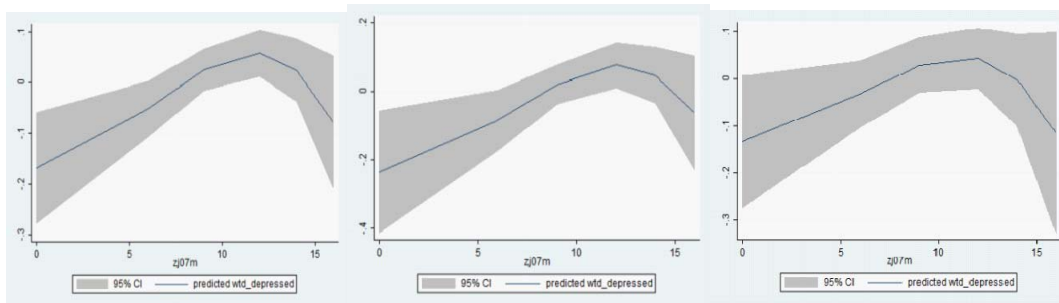
Graph 6 Bar graph of housework pattern with depression by both, male and female



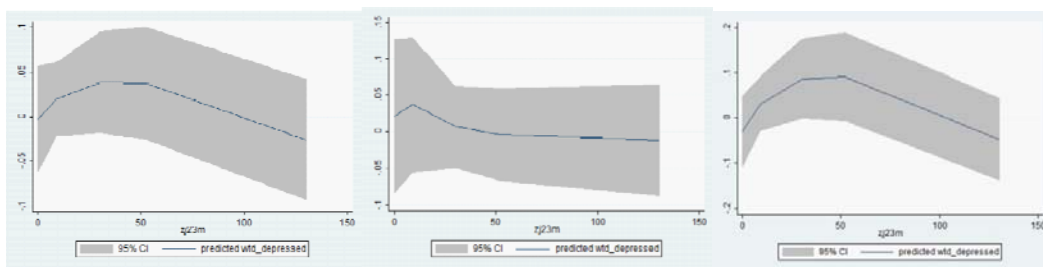
Graph 7 Bar graph of attitude on social status by both, male and female



Graph 8 Partners' education level two way fplot with depression by both, male and female



Graph 9 Respondents' education level two way fplot with depression by both, male and female



Graph 10 Respondents participate in social activities two way fplot with depression by both, male and female