The Gendered Effect of Marriage on Drinking in Japan[1]

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Abstract

This paper examines the gender difference in the effect of marriage on drinking in Japan. Using the nationally representative sample of young adults aged 20 to 40 (N=4800), this study finds that compared to currently-married and never-married individuals, divorced/widowed men and women are more likely to be frequent drinkers. This study also finds that the association between marriage and drinking differs greatly by gender: married women are slightly less likely to drink than their never-married counterparts, but married men are more likely to drink than never-married men. For both men and women, employment is associated with frequent drinking, suggesting the cultural context of drinking in the Japanese work environment.

Marriage, Gender, and Health

Research in mental health consistently shows that married individuals report better mental well-being than single individuals (Wood, Goesling, and Avellar 2007; Wilson and Oswald 2005). In general, married individuals are happier, have higher self-esteem and better subjective mental health, and are less likely to suffer from psychiatric disorders and substance abuse (Waite and Gallagher 2000). This positive association is attributed to greater social support and economic resources provided by a spouse. Living with a significant other in a committed relationship presumably provides emotional support, a sense of attachment, and purpose in life, all

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of which are associated with better mental health (House, Landis, and Umberson 1988). While parents, roommates, or children tend to maintain separate lives when living together, married couples are more likely to share their lives and provide emotional support when needed (Waite and Hughes 1999). Increased financial resources allow for the purchase of medical care when necessary and reduces economic hardship which is likely to expose individuals to stressors and risk of mental illness (Mirowsky and Ross 2003; Kahn and Pearlin 2006).

A gender difference in the marriage benefit of mental health is, however, less clear. While classical gender-role theorists have argued that married women experience greater risks of mental illness, various examinations of this claim find conflicting results (Carr and Springer 2010). Recent research in gender role theory suggests that the costs of added roles for women are offset by the rewards multiple roles bring, such as prestige, self-esteem, social support, financial stability, and greater control and power within the family (Thoits 1983, Barnett and Hyde 2001). Another line of research points out that the mental health benefits of marriage differ by gender because men and women are structurally situated at different positions, and thus benefit from different aspects of marriage. Reviews on the mental health literature suggest that women benefit from marriage because they gain economic advantage through marriage (Ross, Mirowsky, and Goldsteen 1990; Lerman 2002; Waite and Gallagher 2000; Wood, Goesling, and Avellar 2007), while men obtain better mental health because marriage provides an emotional confidante that single men often lack (Vanfossen 1981, Phillipson 1997).

Drinking

Research in gender and mental health has pointed out that men and women express their distress differently (Horwitz and Davies 1994, Simon 2002). According to these studies, women are socialized to develop emotional attachment and encouraged to internalize their distress; men,

on the other hand, are more likely to externalize their distress since they face fewer barriers to expressing anti-social behaviors.   As a consequence, women in general have higher rates of psychological problem such as depression and anxiety disorders compared to men, while men are more likely to experience higher rates of drinking and substance abuse problems.   In responding to classical gender-role theory which found female disadvantage in the mental health benefit of marriage (Gove and Tudor 1973), this line of research argues the need to use outcome variables that are sensitive to gendered patterns of processing distress (Horwitz, White, and Howell-White, 1996; Simon 2002).

This paper uses frequency of drinking as a male-type outcome of distress and assesses the relationship among gender, marriage, and well-being in Japan.   Data come from the first wave of Japanese Life Course Panel Survey (2007), a nationally representative sample of men and women aged 20 to 40 (Institute of Social Science 2011a, 2011b).   Drinking patterns are known to differ greatly by gender in Japan: men are more likely to drink and report alcohol abuse, alcohol dependence (Kawakami et al. 2004), and alcohol-related health problems (Ministry of Health, Labor, and Welfare 2010b) compared to women.

Japan

Despite the increasing popularity and debates on the topic, little has been known about the gendered relationship between marriage and health outside the United States and Western European countries.   Japan is one of the first non-western countries to experience economic development, and yet maintained traditional gender norms. After the economic boom of the 1960s and early 1970s, Japanese women's socioeconomic status increased dramatically.   The college enrollment for women has increased from 7% in 1970 to 45% in 2010 (Ministry of Education, Culture, Sports, Science and Technology 2012).   Their entrance into labor force has

also increased from 49% in 1975 to 60% in 2010 among women aged 15 to 64 (Ministry of Internal Affairs and Communications 2012). Similar to other Western nations, women's family behaviors have also changed: the average age at first marriage increased from 24.7 in 1975 to 28.8 in 2010; the age of first childbearing also shifted from 25.7 to 29.9 in the same time period; and the total fertility rate has declined to the point of 1.26 in 2005 (Cabinet Office 2011). Figure 1 illustrates women's increasing labor force participations and declining fertility rates.

[Figure 1 about here]

Yet, Japan's gender norms are surprisingly conservative. According to Cabinet Office (2004), about 40% of Japanese men and women agreed to the following statement: "The husband should be the breadwinner, and the wife should stay at home". This number is strikingly high compared to the United States (17%), Germany (20%), Sweden (12%), and Korea (17%). Labor force participation rates by women of prime childbearing age also reflect this gender ideology in Japan. In 2009, only 67% of Japanese women aged between 30 and 34 were in labor force, while the number was much higher in Sweden (88%), Germany (76%), and the United States (74%) (Cabinet Office 2010). The Gender Empowerment Measure (GEM), an index developed by UNDP for women's participation in political and economic activities and decision making, ranked Japan 57th among the 109 countries surveyed (United Nations Development Programme 2009). World Economic Forum's Global Gender Gap Report (2012) also ranks Japan low (101th out of 135 countries) for its gender gap in economic and political opportunities as well as access to education and health, making Japan one of the most gender-unequal societies among OECD countries.

Given the cultural context, Japan provides an ideal case to test the robustness of the marriage benefit hypothesis and its gender variations. Against the backdrop of the classical

gender-role theory, the objectives of this paper are to empirically test the hypotheses often cited to explain the marriage benefits, assess the gender differences in the magnitude of marriage benefit and its mechanisms, and examine how combining multiple roles impact men and women's drinking.

Conceptual Model: Marriage in Japan

Contemporary marriage in Japan has been characterized by the rigid gendered division of labor and women's close identification with motherhood (Brinton 1993, Takeda 2005). While men work as a "family wage" earner for the entire family, women are often expected to become nurturers of their husband and children upon marriage (Brinton 1993).   For women, marriage, childbearing, childrearing, and care for the elderly are often linked together as a marriage "package" that is viewed as a life-long commitment (Rindfuss et al. 2004).   I argue below that these features of Japanese marriage expose men and women to different work and family experiences, which in turn, leads to different health consequences.

Traditional gender roles often shape Japanese men and women's everyday lives.   Men's lives tend to be centered on work, due to their strong commitment to their company and overtime work which are often times part of the life-time employment contract in Japan (Ogasawara 1998). Comparison of the Japanese and U.S. time-use surveys administered in 2001 indicates that after adjusting for demographic compositions, Japanese full-time male workers spend on average 57 hours per week on paid work and commuting, whereas in the U.S., the average work hours, including commute time was 47 hours among male full-time workers (Kuroda 2010). Furthermore, about 23% of Japanese employed men in their 30s reports working more than 60 hours per week (Cabinet Office 2011).

Demands from work make Japanese husbands spend less time with family.   Data collected

in 2009 show that on average, married women spend 27 hours per week on household tasks while husbands spent only 3 hours on house work (Tsuya et.al. 2012). This number is striking when compared to the U.S. where married men and women spend 10 and 19 hours a week respectively on housework in 2000 (Bianchi, Robinson, and Milkie 2006). Japanese married men's lack of involvement in family may reduce their opportunity to benefit from marriage in Japan.

A lack of flexibility and long hours of work also make it difficult for married women, especially those with children, to remain in the labor force. In contrast to men, women are more likely to reduce their work hours or to exit the labor market altogether upon marriage (Brinton 2001). According to the Ministry of Health, Labour, and Welfare's longitudinal surveys, 28% of women who married between 2002 and 2008 terminated their job, while only 1% of newly-married men left their job. Among the continuously-single individuals from 2002 to 2008, only 3.2% and 2.9% of women and men left their jobs, respectively (Ministry of Health, Labour, and Welfare 2010a). Many scholars point out that Japanese business practices and tax policies encourage married women to stay at home. Japanese companies have traditionally provided a family wage and welfare to their employees and their dependents (Dore 1973). Even in 2010, about 65% of Japanese companies, and 75% of companies with more than 299 employees, provided family allowances as part of the wage to their (typically male) employees (Ministry of Health, Labour, and Welfare 2010c). Japanese income tax legislations also allow for spousal deductions if the spouse's annual income is below the threshold of 1.35 million yen, that is, $ 15,640 (Akabayashi 2006). Because of its negative effect on married women's decisions to (re-)enter the labor force, the elimination of the spousal deduction has been a key issue in political debates in recent years (The Yomiuri Shimbun 2011). Institutional support for the

gendered division of labor, therefore, is likely to pressure women to stay at home and make it difficult to maintain work and marriage roles.

Taken together, work hours can be another mechanism through which marriage influences men and women's health in Japan. Compared to other factors in the literature, such as economic resources, social support, and health behaviors, work hours have received little attention until now when investigating the gendered link between marriage and health. Work hours are associated with various health consequences (Kleiner and Pavalko 2010). Working long hours prolongs individual exposure to work-related stressors and decreases time for leisure activities, family, and recuperation. Studies have shown associations between long periods of work time and increased stress as well as stress-related diseases such as elevated blood pressure and heart rate, poor sleep quality and subjective fatigue, and overall poor health behavior (Dahlgren, Kecklund, and Akerstedt 2006; Hayashi et al 1996; Nakamura et al. 1998; Shields 1999). Because Japanese women are more likely to reduce their work hours upon marriage, women's health is, on average, expected to benefit from marriage through reduced work hours. Japanese men's commitment to their work as a bread winner, however, is likely to increase their health problems and dilute the protective effects of marriage.

[Figure 2 about here]

Based on the logic above, the following research hypotheses are tested based on the gender-role perspective and structural explanations of the marriage benefit.

H1: Married individuals are more likely to be sober than single individuals

H2: Women are, on average, more likely to be sober than men (i.e., an additive effect of being female will be positive.)

H3: The positive effect of marriage on sobriety is larger for women (i.e., an interaction term between female and marriage will be positive).

H4:   The positive effect of marriage on sobriety is mediated by social support for men.

H5: The positive effect of marriage on sobriety is mediated by household income for women.

H6: The positive effect of marriage on sobriety is mediated by fewer work hours for women.

Based on gender-role theory that emphasized the effect of role conflict on women's well-being, the following hypothesis will be tested.

H7: Combining marriage and employment is associated with higher frequency of drinking for women.

A series of binary logistic regressions are used to examine the relationships among marriage, gender, and health.   I first run models with all respondents to assess the general association between marriage and sobriety.   Next, I separate the sample by gender in order to examine gender differences in the mechanism of marriage and sobriety.   I then introduce interactions of multiple roles to examine how role combinations differently affect men and women's drinking frequency. All models include respondents' past health status which asked whether they experienced illness or injury that required a long-term rest.   The past illness is included to reduce the effect of the selection of healthier individuals to marry.

Data

Under the direction of the University of Tokyo's Institute of Social Science, the Japanese Life Course Panel Survey (JLPS) collected data on work, family, health, education, and attitudes in 2007 from a nationally representative household sample of adults aged 20 to 40 years (n=4800).   This dissertation uses the first wave of JLPS data which utilized a stratified sampling of 20 to 34 year olds and 35 to 40 year olds who resided in Japan in November 2006.

Potential respondents were selected from Japan's basic residence registration and voter registration, using a two-stage stratified probability sampling. The first stage contains 271 primary sampling units by region and a city size. The second stage is stratified by gender and 5-year age groups. A recruitment letter and a self-administered questionnaire were sent to sampled respondents in January 2007 and were later collected by a field worker. The drop-off self-administered survey is a popular method in Japan (Yamada and Synodinos 1994). The response rates were 34.5% for the 20-34 year old sample, and 40.4% for the 35-40 year old sample (Institute of Social Science 2011a, 2011b).

The following theoretically relevant independent variables will be included in the model to predict self-rated health, mental health, and drinking. I operationalize marital status as three dummy variables representing currently-married, never-married (a reference category), and separated, widowed, or divorced. As a measure of economic resources, I use the annual household income per family member. Respondents were asked to indicate the annual household income from 13 categories ranging from zero to more than 22.5 million yen (equivalent of 250K U.S. dollars). I divided the household income by the number of persons living in the household. When the household income was missing, I replaced it with the sum of self and spousal incomes. A lack of supportive network was used to measure the absence of social integration and support that may explain the health benefit of marriage (Umberson et al. 1996). Those who answered that they have nobody to rely on when it comes to work, study, personal relationships, or financial emergency were coded as 1. For work hours, I create the following 5 categories: 1) zero hours including those without employment and out of the labor force, 2) 1 to 35 hours per week, 3) 36 to 49 hours, 4) 50 to 59 hours, and 5) 60+ hours per week.

I also include other important variables that are likely to influence health, notably age (House, Kessler, and Herzog 1990), educational attainment, and employment status (Mirowsky, Ross and Reynolds 2000). For education, three categories were created: 1) high school or less, vocational school or two-year college (which often provides professional skills for women), and 3) college or above. In addition, I control for characteristics of households by including the presence of dependents under age 18: being married without young children in the home is considered to be most beneficial to one's health in the U.S. (Schoenborn 2004; Umberson and Williams 1999).

Furthermore, I include the co-residence with parents as an important control for the link between marriage, social support, and health in Japan. Unlike the U.S. and some of the European countries, it is common and accepted for single young adults, especially daughters, to reside with their parents in Japan. According to Raymo (2003), approximately three-quarters of single women in Japan live with their parents, because the co-residence with parents often involves higher disposable income and less household tasks. Mothers are likely to take care of the health of their single children by preparing meals and managing household chores. By living with their own family, single individuals are likely to be integrated with their family network and receiving social support. Therefore co-residence with a parent(s) is also included to properly assess the mediating effect of social support between marriage and health.

Results

Descriptive Statistics

Table 1 shows the percentage distributions and means of independent variables stratified by frequent drinking (i.e., drinking 5 or more times a week) and sobriety (drinking less than 5 times a week). The table indicates that men, currently-married individuals, those which a child, and

those with high school or less education are more likely to be frequent drinkers.   Those with

employment and income of .8-1.4 million yen per family member are also more likely to drink

frequently.   Frequent drinkers on average work 44 hours a week, which is much longer than the

average work hours of 36 hours per week for the entire population.   On the other hand,

never-married respondents and those who co-reside with parent(s) are less likely to be frequent

drinkers, which may be influenced by age.

[Table 1 about here]

Multivariate Statistics

Table 2 includes all individuals in the sample to examine the associations among marriage,

gender, and sobriety.   Marital status is associated with sobriety in that widowed or divorced

individuals are more likely to be frequent drinkers than never-married and currently-married

individuals[2].   Throughout the models, divorced or widowed respondents are about 60% less

likely to be sober than the never-marrieds.   Although the currently-married individuals appear

to be no different than their never-married counterparts, the interaction terms between gender

and marriage (Models 3 and 7) show that the effect of marriage on drinking depends on gender.

Interaction terms in Models 3 and 7 indicate that being female and married increases the

propensity of sobriety by approximately 200%.   Figure 4 displays the predicted probabilities

of sobriety by gender and by marital status.   It shows that current marriage has the opposite

effects on sobriety for men and women.   Furthermore, while married women have a slightly

higher probability of sobriety than never-married women, married men have a lower probability

of sobriety compared to never-married men.

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[2] Analysis using "currently-married" as a reference category showed a significant difference in drinking frequency between currently-married and widowed or divorced men and women (results not shown).

Additionally, in line with Hypothesis 2, Table 2 shows that Japanese men on average are much more likely to be frequent drinkers than women. In all models, the odds ratios for being female (top panel) indicate that women are almost two to three times more likely to be sober than men. This positive effect is partially explained by the fact that women are more likely to be out of the labor force, which is associated with sobriety. Model 6 shows that the introduction of an employment status reduces the positive effect of being female on sobriety from 3.22 to 2.9.

[Table 2 about here]

[Figure 4 about here]

In order to fully understand the gendered relationship between marriage and sobriety, I divide the sample by men and women and show the results in Table 3. As indicated by the interaction term in Table 2, Models 1 through 3 in Table 3 show that marriage has the opposite effect on sobriety for men and women. While currently-married women are about 80% more likely to be sober than never-married women, currently-married men are about 30% less likely to be sober than never-married men. Furthermore, widowhood and divorce are associated with frequent drinking only for men. Widowed or divorced men are about 65% less likely to be sober than never-married men. The negative association between current marriage and sobriety for men becomes less significant when household income is controlled (Model 2). The effect of household income, in turn, is partially mediated by work hours (Model 4). Currently married men are more likely to drink partly because they tend to have high-paying jobs that may require longer work hours, which in turn is associated with frequent drinking. The negative effect of current marriage for men drops below statistical significance when work hours are controlled in the final model. This suggests that it is not marriage per se that causes drinking – instead, marriage is likely to be linked to a career stage that involves frequent drinking for men.

Although women are much less likely to drink to begin with, their level drinking also seems to be affected by work. The positive association between current marriage and sobriety for women disappears when work status is controlled in Model 4. The positive association is explained by the fact that currently married women are more likely to be out of the labor force which is associated with less frequent drinking. In contrast, employment, especially working 50-59 hours per week, is associated with lowered odds of sobriety for women (also Model 4). This suggests that while women on average are less likely to drink, their exposure to male workforce culture is associated with increased drinking.

Other social backgrounds also influence frequent drinking. The presence of a child is associated with frequent drinking especially for women. Supplementary analyses were conducted separately for currently-married women and for widowed/divorced women in order to examine if the effect of a child differs by marital status. Analysis restricted to married women indicated that childrearing has no significant effect on sobriety. In contrast, analysis using widowed or divorced women showed that having a child reduces the odds of sobriety by 85% (with a p-value of .04, results not shown). It is possible that stress stemming from single motherhood explains the negative association between childbearing and sobriety for women. In addition, college education, as opposed to high school or less education is positively related to sobriety even after household income is controlled. Supplementary analysis which added white-collar and blue-collar jobs in the model did not change the results very much (results not shown)[3]. I speculate that college education may be associated with increased knowledge about alcohol and health, which may deter drinking.

[Table 3 about here]

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[3] This is also in line with qualitative literature that documents widespread drinking gatherings across occupations (Borovoy 2005).

Table 4 indicates that combining multiple roles does not have any significant impact on sobriety for both men and women. The odds ratios for the interaction terms (in Models 2 and 3) are positive, but not significant. Figure 5 plots predicted probabilities of sobriety by gender, marital status, and employment status. Among the never-married and currently-married individuals, employment lowers the propensity of sobriety for both men and women. In particular, married men with employment are more likely to drink than the never-married men with employment, net of other covariates. It is possible that married men are more likely to hold a position in the workplace that requires involvement in after work hours drinking.

In contrast to the joint effect of employment and marriage on drinking, employment is related to a higher propensity of sobriety for widowed and divorced men and women. This is due to the fact that divorced and widowed individuals are much more likely to drink than their employed counterparts. Unemployment may be a source of stress when combined with separation from a spouse. In general, the results do not seem to support the role conflict hypothesis for women, since employment reduces the likelihood of sobriety regardless of gender and whether the respondents are never-married or currently-married.

[Table 4 about here]

[Figure 5 about here]

Discussion

Analyses using frequent drinking as a measure of well-being show complex relationships among gender, marriage, work, and psychological health. Overall, marital status is associated with well-being in that divorce and widowhood reduce the propensity of sobriety for men while current marriage increases sobriety for women. A surprising finding, however, is that marriage for men is related to increased frequency of drinking. The negative association between current

marriage and sobriety for men suggests cultural contexts surrounding drinking. Japanese workplaces demand long work hours and a lifetime commitment from male employees who are often times breadwinners for their families. Consequently, work colleagues are important sources of social support with whom married men often engage in after-work socializing at bars (Ikeda et al. 2011). "Nomikai (drinking meeting)" after long hours of work provides a venue for workplace-based social support and also a place where important business conversations informally take place (Holloway 2010). Therefore, it is possible that frequent drinking in Japan is more influenced by the degree of exposure to men's work culture than by the level of mental distress. This is likely to be the case because past health status and social support, which were expected to have strong associations with mental distress, have no significant impact on frequent drinking. Adding self-rated health also did not change the results very much (results not shown).

Marriage is still important in that it influences men and women's opportunity for drinking. Married women are more likely to be sober because they are less likely to be exposed to the work culture of drinking which is dominated by married and older men. For men, however, marriage does not lead to less drinking because most married men are tied to work that promotes frequent drinking. The opposite effect of marriage on drinking suggests that men and women live in gender-segregated spheres (Holloway 2010) with different expectations toward drinking, even when they are married to each other. Allison (1994) argues that after-hours drinking is sponsored by companies to reinforce men's identity as a worker and to establish separate spheres by gender. Because married men are often estranged from family life (where wives take control over the household chores and childrearing), she argues, that this further draws men to workplace socialization and fortify their masculine identity.

In addition to marital status, gender norms appear to have an independent effect on drinking.   The strong and consistent net effect of being female on sobriety suggests the presence of gendered expectations toward drinking.   Furthermore, the divorced and widowed men are much more likely to drink than their female counterparts, probably because men are socialized to express their distress through alcohol (Simon 2002).   Japanese society is particularly tolerant of the intoxication of adult men.   Ethnographic research documents wide-spread acceptance toward male drunkenness in Japan.   Indeed, it is often considered normal to see white-collar men pass out on subways after drinking gatherings with colleagues, and at home, excessive drinking by a father is not considered alarming by his family.   Women, on the other hand, are expected to take on the caretaking role and to be responsible for recuperating drunken husbands and sons so they can resume their work the next day (Borovoy 2005).   National data also show that Japanese men are about three times more likely than women to list drinking as a way of coping with stress (Ministry of Health, Labor, and Welfare 2007).   Fewer cultural restraints against drinking may make it easier for Japanese men to rely on drinking when a highly stressful event such as divorce takes place.

Although gender explains overall drinking frequency and how marriage influences drinking by gender, it does not appear to influence the effect of role combinations on alcohol consumption for women.   Contrary to classical gender-role theory (Gove and Tudor 1973), combining marriage and employment shows little impact on drinking frequency especially for women. The evidence of role conflict for men in this paper is unclear.   Although married men with employment are slightly more likely to drink than their never-married counterparts, it is likely that frequent drinking reflects married men's greater involvement in work.   As mentioned earlier, social support, self-rated health, and past illness -- the variables that normally have a

strong relationship with distress -- had no significant relationship with drinking.

This study used sobriety as a dependent variable and finds that compared to currently-married and never-married individuals, divorced/widowed men and women are more likely to be frequent drinkers. Separate analysis by gender, however, indicates that the association between marriage and drinking differs greatly by gender: married women are slightly less likely to drink than their never-married counterparts, but married men are more likely to drink than never-married men. For both men and women, employment is associated with frequent drinking, indicating the cultural context of drinking in the Japanese work environment. Even though women are much less likely to drink than men to begin with, their exposure to men's work culture (through employment) may increase the odds of frequent drinking. For both men and women, the association between current marriage and drinking disappears when the work hours are controlled for. Although marriage does influence the drinking frequency of men and women, I find that stress-related variables such as past illness/injury and social support do not influence the frequency of drinking. Frequent drinking in Japan may be more influenced by the degree of exposure to men's work culture than by the level of mental distress.

Figure 1 Female employment rate and total fertility rate (TFR): Japan 1975-2010
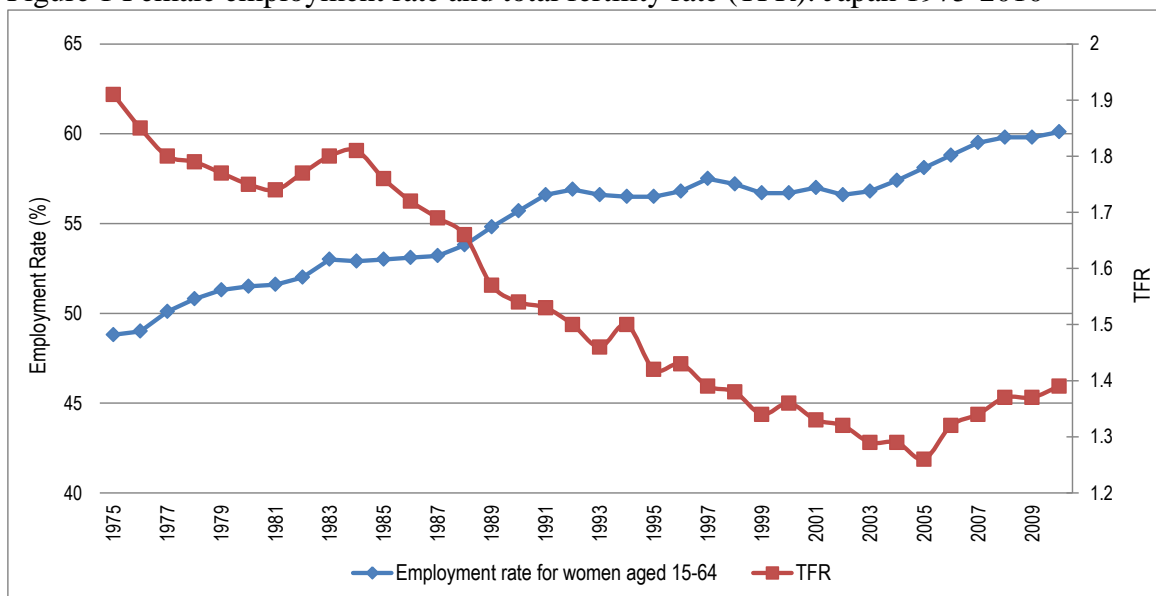
Note: Constructed using data from Cabinet Office (2011) and Ministry of Internal Affairs and Communications (2012).

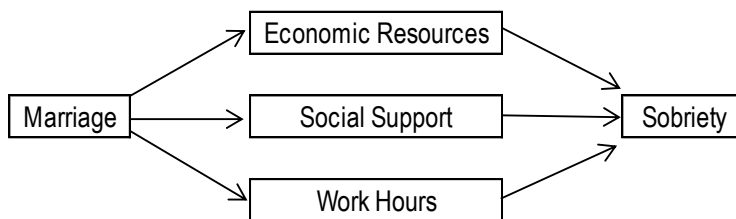Figure 2. Conceptual Model of Marriage and Sobriety

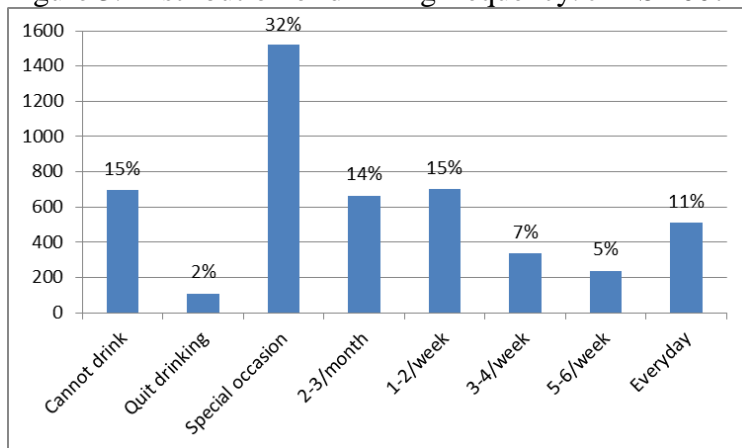Figure 3. Distribution of drinking frequency: JLPS 2007

Table 1. Percent distributions and means of independent variables, stratified by sobriety vs. frequent drinking: JLPS 2007

Variable	Total Sample (N=4698)		Sober, drink less than 5 times a week (N=4029)	Drink frequently, 5+ a week (N=751)
	N	%	%	%
Male	2354	49	46	69
Marital Status				
Never-married	2372	50	53	30
Currently-married	2245	47	44	64
Widowed/Divorced	163	3	3	6
Mean Age (s.d.)	31 (6)		31 (6)	33 (5)
One or More Children	1946	41	37	58
Co-Residence with Parent(s)	2130	45	48	29
Education				
High school or less	1449	30	29	40
Vocational school, 2-year college	1547	33	33	28
College or above	1760	37	38	31
Employment				
Out of labor force	601	13	14	7
Unemployed	241	5	5	3
Employed	3915	82	81	91
Household Income per Family Member				
.8 million JP yen or less	1193	27	29	17
.8-1.4 million JP yen	1159	26	25	31
1.4-2.2 million JP yen	811	18	18	20
Mare than 2.2 million JP yen	1311	30	29	32
No Social Support	1995	42	42	40
Mean Work Hours per Week (s.d.)	36 (23)		34 (23)	44 (21)
Past Experience of Illness or Injury	1002	21	21	23

Note: 1 million Japanese yen is approximately 10,782 U.S. dollars

Table 2. Logistic regression odds ratios predicting sobriety (1=drink less than 5 days/wk, 0=drink 5+ days/wk): JLPS 2007

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
	OR p	OR p	OR p	OR p	OR p	OR p	OR p
Female	3.29 ***	3.30 ***	1.99 ***	3.22 ***	3.22 ***	2.90 ***	2.02 ***
Marital Status							
Never-Married	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Currently-Married	0.71 **	0.88	0.72 †	0.91	0.91	0.90	0.77
Widowed/Divorced	0.37 ***	0.43 ***	0.34 ***	0.44 ***	0.44 ***	0.46 ***	0.37 **
Past Health	1.04	1.03	1.02	1.02	1.01	0.99	0.99
Age	0.93 ***	0.93 ***	0.93 ***	0.93 ***	0.93 ***	0.94 ***	0.93 ***
Education							
High school or less	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Vocational school, 2-year college	1.25 *	1.24 *	1.25 *	1.28 *	1.28 *	1.27 *	1.28 *
College or above	1.58 ***	1.56 ***	1.59 ***	1.66 ***	1.66 ***	1.65 ***	1.68 ***
Coresidence with Own Parent(s)	1.49 **	1.50 ***	1.53 ***	1.37 **	1.37 **	1.38 **	1.40 **
Child under Age 18		0.77 †	0.76 †	0.70 *	0.70 *	0.69 *	0.69 *
Interactions							
Female * Married			2.10 ***				1.76 **
Female * Widowed/Divorced			2.03 †				1.81
Hhld Income per Family Member							
.8 million JP yen or less				Ref	Ref	Ref	Ref
.8-1.4 million JP yen				0.75 *	0.75 *	0.78 †	0.78 †
1.4-2.2 million JP yen				0.75 *	0.75 *	0.77 †	0.77 †
More than 2.2 million JP yen				0.65 **	0.65 **	0.69 **	0.68 **
Income missing				0.93	0.94	0.96	0.94
No Social Support					1.08	1.07	1.06
Employment							
Unemployment/Out of labor force						Ref	Ref
Unemployed						0.94	1.00
Employed						0.60 **	0.68 *
AIC	3713	3708	3697	3705	3697	3674	3670
N	4733	4727	4727	4727	4709	4687	4687

† p<.1, * p<.05, ** p<.01, *** p<.001 (two-tailed test)

Figure 4. Predicted Probabilities and 95% CI of Sobriety by Gender and Marital Status: JLPS 2007
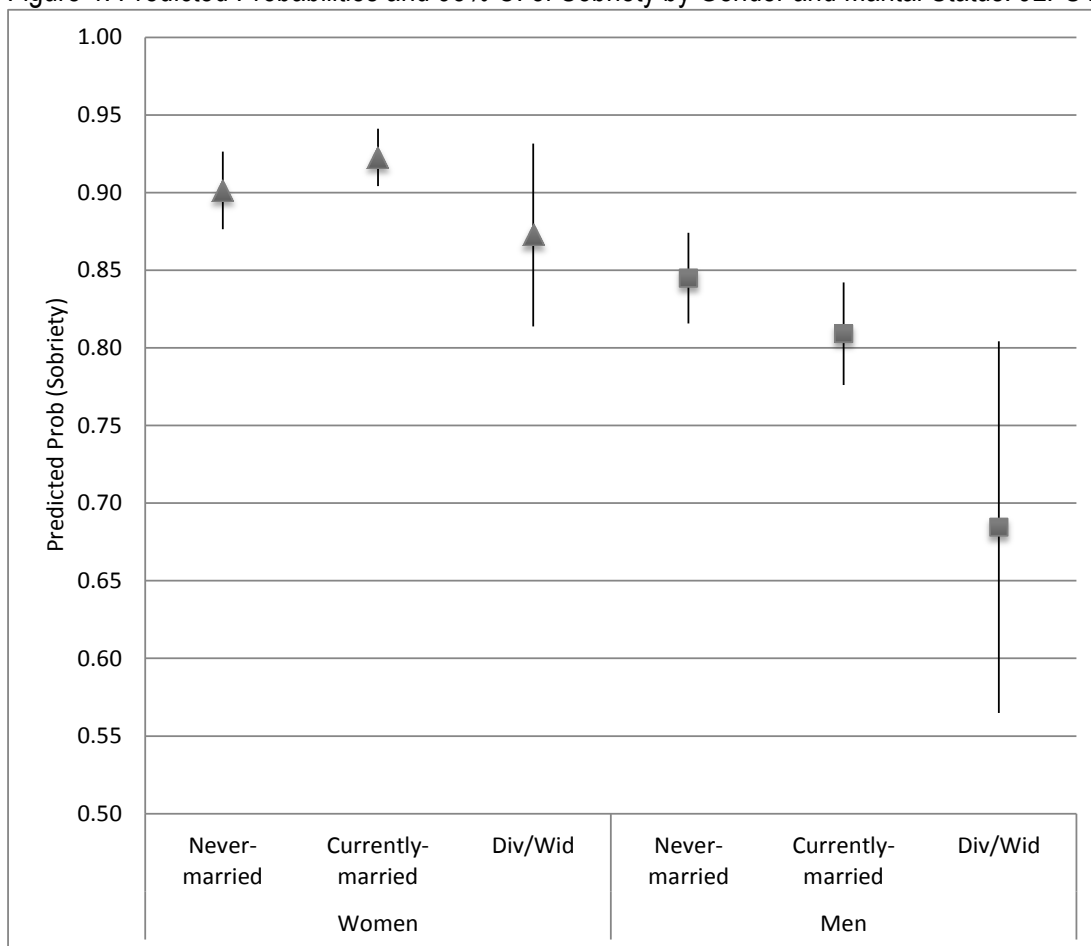
Table 3. Logistic regression odds ratios predicting sobriety (1=drink less than 5 days/wk, 0=drink 5+ days/wk) by gender: JLPS 2007: JLPS 2007

|	Model 1		Model 2		Model 3		Model 4	
	Female	Male	Female	Male	Female	Male	Female	Male
	OR p	OR p	OR p	OR p	OR p	OR p	OR p	OR p
Marital Status								
Never-Married	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Currently-Married	1.80 †	0.67 *	1.88 *	0.69 †	1.90 *	0.68 †	1.64	0.72
Widowed/Divorced	0.80	0.33 ***	0.79	0.35 **	0.79	0.35 **	0.78	0.36 **
Past Health	1.00	1.04	0.99	1.01	1.00	1.01	0.98	0.98
Age	0.93 ***	0.93 ***	0.93 ***	0.94 ***	0.93 ***	0.94 ***	0.94 ***	0.94 ***
Education								
High school or less	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Vocational, 2-year college	1.16	1.33 *	1.22	1.37 *	1.23	1.37 *	1.23	1.36 *
College or above	1.67 *	1.59 ***	1.83 **	1.69 ***	1.83 **	1.68 ***	1.85 **	1.65 ***
Coresidence with Parent	1.55 *	1.52 **	1.44 †	1.39 *	1.44 †	1.39 *	1.43 †	1.39 *
Child under Age 18	0.63 †	0.82	0.58 *	0.73 †	0.57 *	0.73 †	0.56 *	0.74
Hhld Income/Fam Size								
.8 million JP yen or less			Ref	Ref	Ref	Ref	Ref	Ref
.8-1.4 million JP yen			0.78	0.72 †	0.78	0.72 †	0.80	0.76
1.4-2.2 million JP yen			0.86	0.68 *	0.86	0.68 *	0.87	0.72 †
2.2+ million JP yen			0.69 †	0.60 **	0.69 †	0.60 **	0.75	0.65 *
Missing			2.20	0.63 †	2.22	0.64 †	2.33 †	0.63 †
No Social Support					1.19	1.02	1.16	1.01
Ave. Work Hours								
Out of labor force							Ref	Ref
Unemployed							1.10	0.65
1-35 hours							0.73	0.51
36-49 hours							0.69	0.46
50-59 hours							0.52 *	0.46
60+ hours							0.94	0.42 †
Missing							0.64	0.53
AIC	1452	2256	1451	2256	1450	2250	1444	2255
N	2397	2330	2397	2330	2391	2318	2377	2310

† p<.1, * p<.05, ** p<.01, *** p<.001 (two-tailed test)

Table 4. Logistic regression odds ratios predicting sobriety by gender with effects of multiple roles: JLPS 2007

	Model 1		Model 2		Model 3	
	Female	Male	Female	Male	Female	Male
	OR p	OR p	OR p	OR p	OR p	OR p
Marital Status						
Never-Married	Ref	Ref	Ref	Ref	Ref	Ref
Currently-Married	1.76 †	0.71 †	0.69	0.52	1.72 †	0.71 †
Widowed/Divorced	0.81	0.35 **	0.20	0.07 **	0.78	0.36 **
Past Illness	0.99	0.98	0.98	1.00	0.99	0.99
Age	0.94 ***	0.94 ***	0.94 ***	0.94 ***	0.94 ***	0.94 ***
Education						
High school or less	Ref	Ref	Ref	Ref	Ref	Ref
Vocational school, 2-year college	1.22	1.37 *	1.24	1.37 *	1.22	1.37 *
College or above	1.81 **	1.67 ***	1.81 **	1.68 ***	1.81 **	1.66 ***
Employment						
Unemployment/Out of labor force	Ref	Ref	Ref	Ref	Ref	Ref
Employed	0.70 *	0.58 †	0.28 †	0.47 *	0.52	0.51 *
Coresidence with Own Parent(s)	1.46 †	1.40 *	1.45 †	1.41 *	1.46 †	1.40 *
Child under Age 18	0.54 *	0.74	0.55 *	0.74 †	0.40 †	0.36
Currently-Married * Employed			2.67	1.41		
Divorced/Widowed * Employed			4.38	6.02 †		
Child * Employed					1.44	2.12
Hhld Income per Family Member						
.8 million JP yen or less	Ref	Ref	Ref	Ref	Ref	Ref
.8-1.4 million JP yen	0.80	0.75	0.80	0.75	0.80	0.75
1.4-2.2 million JP yen	0.86	0.71 †	0.87	0.71 †	0.87	0.71 †
More than 2.2 million JP yen	0.71	0.64 *	0.72	0.64 *	0.72	0.64 *
Missing	2.33 †	0.64 †	2.31 †	0.64	2.30 †	0.64 †
No Social Support	1.18	1.02	1.18	1.02	1.18	1.02
AIC	1448	2248	1468	2267	1460	2259
N	2391	2318	2391	2318	2391	2318

† $p<.1$, * $p<.05$, ** $p<.01$, *** $p<.001$ (two-tailed test)

Figure 5. Predicted Probabilities and 95% CI of Sobriety by Gender, Marital Status, and Employment: JLPS 2007
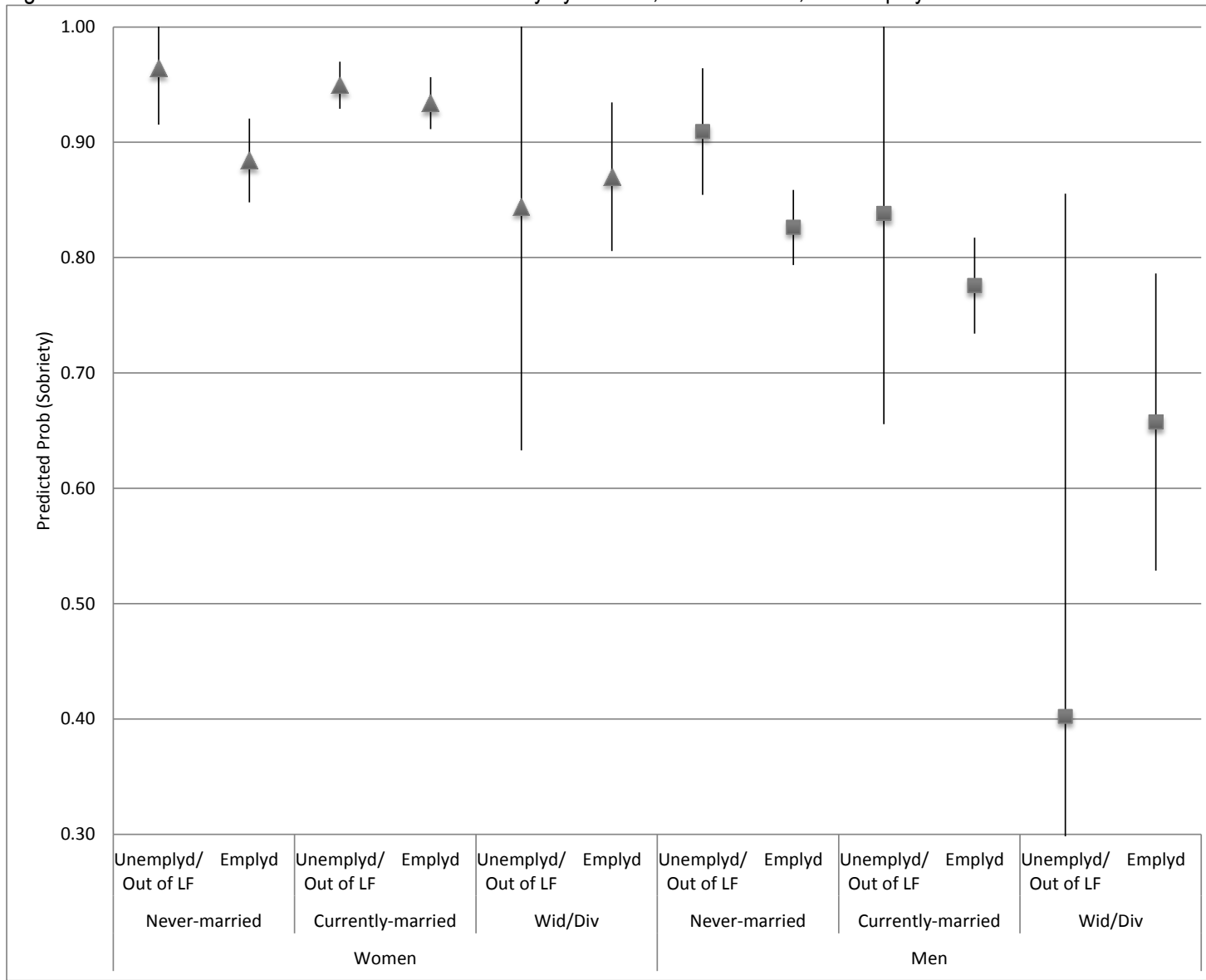
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