The Gendered Effects of Marriage on Health in Japan:

Structure, Role Expectations, and Outcomes

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Abstract

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One of the most robust findings in health literature is the association between marital status and health. A growing body of research in the United States has shown that married individuals are healthier than their single counterparts. The gender difference in the health benefit of marriage, however, is still much debated. While some argue that marriage is more important for men's health than women's, others find no gender difference in the positive effect of marriage. This dissertation uses data from Japan, where gender norms are still traditional, to investigate how marriage is associated with men's and women's health. In particular, I argue that Japan's strong gendered division of labor is an important structural mechanism that determines more work hours for married men, leading to different health consequences for men and women. While married women are expected to have a better health status by reducing their work hours following marriage, married men are less likely to reap this same benefit since they tend to put in longer work hours than married women.

I use the first wave of the Japanese Life Course Panel Survey (JLPS 2007), a nationally representative sample of men and women aged 20 to 40 years, to test hypotheses regarding the relationships among gender, marriage, and health. Taken together, my results show that the gendered relationships between marriage and health are more nuanced than previous literature has suggested. While marriage is generally associated with better overall health and better mental health for men and women, the magnitude of the association is larger for women than for men. Furthermore, this research finds gender differences in the structural mechanisms linking marriage and health and in the impact of combining different roles on health. More specifically, my results show that being out of the labor force partially explains the health benefit of marriage for women but not for men, and combining marriage and employment reduces women's health but not men's. This study also finds that employment explains the frequent drinking of currently-married men compared to never-married men, suggesting the cultural contingency of the meaning of frequent alcohol consumption in Japan.

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CHAPTER 1: INTRODUCTION

Marriage is widely regarded as one of the most important social relations. Its impact on individuals' health, in particular, has recently received a growing attention both in public and in academia (Parker-Pope 2010; Saslow 2011; Waite and Gallagher 2000). A vast body of research finds that being married, relative to being single, has a positive and direct impact on general health status (Koball et al. 2010; Williams and Umberson, 2004), longevity (Lillard and Waite 1995; Schoenborn 2004) and mental health (Marks and Lambert 1998) as well as various health conditions, including arthritis, hypertension, and heart disease (Lorenz et al. 2006; Prigerson, Maciejewski, and Rosenheck 2000; Zhang and Hayward 2006). Although selection of healthier individuals into marriage cannot be entirely ruled out, panel studies that followed same individuals over time confirm the positive influence of marriage on health for both women and men (Wood, Goesling, and Avellar 2007; Wilson and Oswald. 2005).

While the positive effect of marriage on health is consistent and strong, the debate remains as to the gender difference in the health benefit of marriage (Carr and Springer 2010; Kiecolt-Glaser and Newton 2001). Since the early 1970s, classical gender-role theorists have emphasized that marriage provides greater health benefits to husbands than to wives, because women's roles are more demanding than men's and they are more likely to experience conflicts when they enter labor force (Bernard 1972; Gove and Tudor 1973). Recent examination of this claim, however, has found mixed results (Waite and Gallagher 2000). Some scholars explain that changes in gender ideology have eased the burden of combining work and family for women (Barnett and Hyde 2001). Others point out that men and women benefit from different structural aspects of marriage; and others challenge the classical gender-role perspective and their findings by emphasizing gendered socialization in expressing distress (Simon 2002). These

developments in literature suggest that social and cultural contexts surrounding marriage play an important role in understanding how marriage affects men and women's health.

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 1.1 illustrates women's increasing labor force participations and declining fertility rates.

[Figure 1.1 about here]

Yet, Japan's gender norms are surprisingly conservative. Table 1.1 shows the percent of men and women across five countries who agree to the gendered division of labor (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.

[Table 1.1 about here]

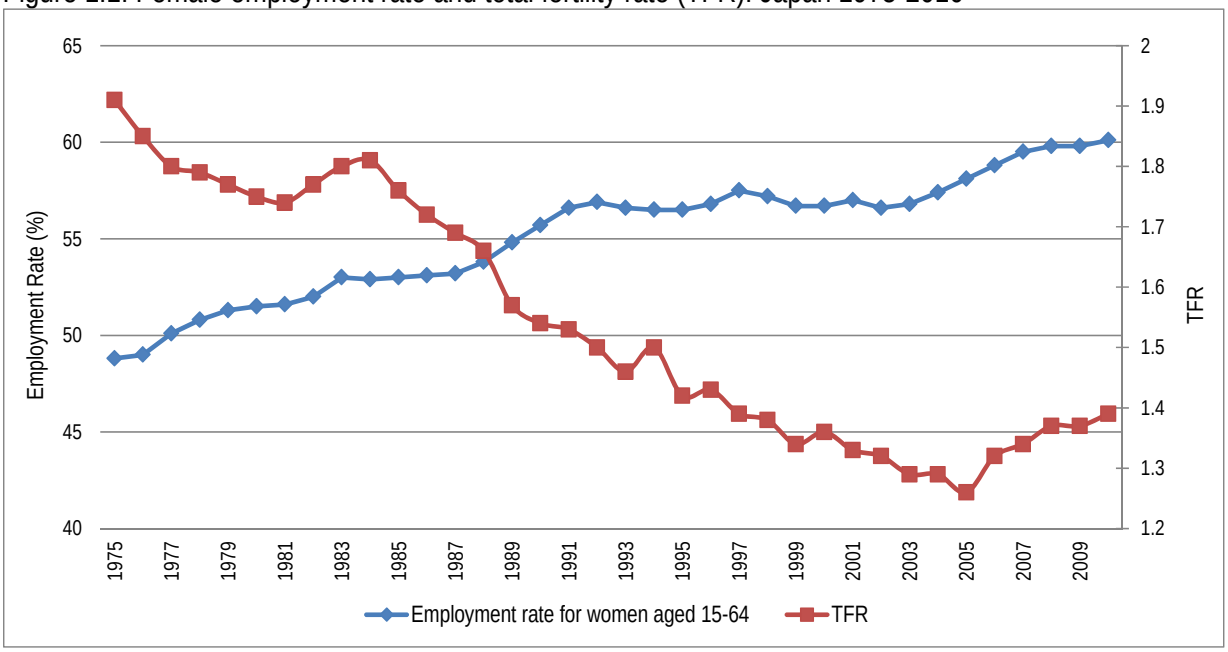
Given the cultural context, Japan provides an ideal case to test the robustness of the marriage benefit hypothesis and its gender variations. Against the backdrop of the classical gender-role theory, the objectives of this dissertation are to empirically test the hypotheses often cited to explain the 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 health. Data used for this study are from the first wave of Japanese Life-course Panel Survey, a nationally representative data set collected in 2007 from Japanese men and women aged 20 and 40 (Institute of Social Science 2011a, 2011b).

Organization

This dissertation is organized in the following manner. Chapter 2 discusses theoretical background of this research. I first lay out literature on marriage and its positive effect on health, summarizing why marriage brings about better health conditions. Next, I focus on literature that pays attentions to gender differences in the health benefits of marriage. I then review empirical evidence on how marriage in Japan affects health. In the latter section of the chapter, I present

the conceptual model and hypotheses that will guide my later empirical chapters. Chapter 3 describes data, the Japanese Life Course Panel Survey 2007, and methods used in the subsequent analyses. Chapter 4 uses self-rated health, a measurement of a general health condition to examine the gender differences in marriage and health. Specifically, I first test models using all respondents to understand the general relationship between marriage and health. I then separate the sample into men and women, and examine gender differences in how different structural aspects of marriage impact health. Lastly, I add a set of role combinations to see the health implication of multiple roles for men and women. Chapter 5 uses the 5-item mental health inventory to examine the relationship between marriage and mental health with an attention to the female-type outcome of distress. Chapter 6 uses drinking frequency to focus on the male-type outcome of distress. Chapter 7 summarizes the findings and limitations of this study to provide directions for future studies.

Figure 1.1. 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).

Table 1.1. Attitude toward gendered division of labor: Percent distributions by 5 countries (2004)

	"The husband should be the breadwinner, and the wife should stay at home."				
	Completely agree	Somewhat agree	Somewhat disagree	Completely disagree	DK
Japan	10	31	30	23	7
United States	6	14	28	51	1
Germany	5	15	35	44	1
Sweden	2	5	6	85	3
Korea	3	14	58	23	2

Note: Constructed using data from Cabinet Office (2004)

CHAPTER 2: THEORY AND ANALYTICAL FRAMEWORK

This chapter reviews the theoretical and empirical literature on the relative benefits of marriage for men and women and provides research hypotheses that will guide my empirical analysis.

Marriage and Health in the United States

One of the most robust findings in health literature is the association between marital status and health (Ross, Mirowsky and Goldsteen 1990). A growing body of research has shown that being married, relative to being single, has a positive and direct impact on general health status (Koball et al. 2010; Williams and Umberson, 2004), longevity (Lillard and Waite 1995; Schoenborn 2004), mental health (Marks and Lambert 1998; Lamb, Lee, and DeMaris 2003), and various health conditions, including arthritis, hypertension, and heart disease (Lorenz et al. 2006; Prigerson, Maciejewski, and Rosenheck 2000; Zhang and Hayward 2006). Although the selection of healthier individuals into marriage cannot be entirely ruled out, longitudinal studies confirm the positive influence of marriage on health for both women and men even after controlling for selectivity into marriage (Wood, Goesling, and Avellar 2007; Wilson and Oswald 2005).

The literature suggests that health differences by marital status are largely explained by greater economic resources, social integration and support, and the regulation of health behaviors conferred by marriage (Ross, Mirowsky and Goldsteen 1990; Waite and Gallagher 2000). Frist, the economic resources hypothesis argues that the dual-earning potential of married individuals may provide greater access to health care and alleviate the stress associated with economic hardship (Ross, Mirowsky and Goldsteen 1990). Married couples have higher per-capita economic status through more income, pooling of wealth and income (Waite 1995; Lerman

2002), and greater efficiency of family consumption (Becker 1981). Greater economic resources enhance health by improving nutrition, providing care in case of illness, and allowing the purchase of medical care or other health enhancing resources (Lillard and Panis 1996), whereas economic hardship is detrimental to health by increasing stress (Mirowsky and Ross 2003).

Second, married individuals experience greater emotional support and social integration from spouses (Umberson et al. 1996; Horwitz, White and Howell-White 1996; Lamb, Lee and DeMaris 2003). Emotional support, a sense of purpose in life, and increased social security are known to buffer stress and benefit immune, endocrine, and cardiovascular functions. (House, Landis and Umberson 1988; Ross, Mirowsky and Goldsteen 1990; Seeman et al. 2002; Uchino 2006). Recent studies find that continuously married individuals experience a lower risk of cardiovascular disease in part due to the psychosocial supports provided by marriage (Zhang and Hayward 2006; Kiecolt-Glaser and Newton, 2001). On average, married individuals are expected to receive more social support than comparable non-married individuals.

Third, marriage provides external regulation and facilitates self-regulation of healthy behaviors, both of which can affect physical health, mortality, and well-being (Umberson, Crosnoe, & Reczek 2010). Marriage can instill a sense of responsibility and obligation to the partner, which often encourage healthy behaviors and reduce risky behaviors in order to take care of family (Mirowsky and Ross 2003). Married individuals are less likely to smoke, use substance, drink heavily, and die from accidents and suicide (Chilcoat and Breslau 1996; Umberson 1987; Umberson 1992; Rogers 1995). They are also more likely to eat nutritious meals, see doctors for checkups and screening, and to adhere to treatment regimens (Schone and Weinick 1998; Neale, Tilley, and Vernon 1986; Goodwin et al. 1987; Lee et al. 2005; Reifman 1995).

Marriage, Gender, and Health

While the positive effect of marriage on health is consistent and strong, the debate remains as to the gendered effect of marriage on health (Carr and Springer 2010; Kiecolt-Glaser and Newton, 2001). Since the early 1970s, sociologists of gender have emphasized that marriage benefits the health of men more than women, because women and men experience family roles differently (Bernard 1972; Gove 1972; Gove and Tudor 1973). According to these classical gender-role theorists, married women are at greater risks of mental illness because they are confined to the role of housewife which is often perceived as more demanding and less rewarding than men's roles. Married women's roles can also lack structure and social contacts, while men gain opportunities for new contacts through employment. Even when wives enter the labor force, classical gender-role theorists argued that they are likely to experience role conflicts because their family role as care takers is likely to contradict with their work obligations (Gove and Tudor 1973). This conflict is less likely for men since they are unlikely to have a primary homemaker role regardless of their employment status (Simon 1995).

In response to the claim by classical gender-role theory, three separate research agendas have investigated gender differences in the benefits of marriage. Gender-role theories, structural analysis of marriage on health, and gendered outcomes of states of distress have each taken into account the gendered path from marriage to health, concluding that overall, men and women in contemporary American society benefit equally from marriage (Waite and Gallagher 2000; Williams 2003; Simon 2002).

Recent evidence in gender role theory suggests that multiple roles do not have harmful health effects on women when the total work load and stress levels are controlled (Barnett and Hyde 2001; Thoits 1992; Waldron, Weiss, and Hughes 1998). There are several explanations for

this finding. Frist, the role-expansion theory (Thoits 1983) explains that the costs of added roles 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. This explanation assumes that the change in gender ideology (toward egalitarianism) has facilitated the ease of combining multiple roles in more recent years (Barnett and Hyde 2001). In a society where dual-earner family is a norm and majority of women work throughout their career (White and Rogers 2000), women's employment may be less in conflict with household tasks, and therefore married women may receive the above-mentioned benefits of occupying multiple roles.

Second, the health benefit of role accumulation is explained by the increase in income when women enter the labor market (Barnett and Hyde 2001). Empirically, it has been shown that the gender gap in self-rated health has narrowed between 1974 and 2004, and that women's increased educational attainment has explained their improved health over 30 years. Furthermore, the same study shows that work hours are, in general, associated with better health among women with children under age six (Schnittker 2007). These recent studies suggest the importance of linking role analysis and structural advantages, although few studies of role analysis attempt to examine all dimensions of structural mechanisms that bring about better health (Greenhaus and Powell 2006; Baba, Kondo, and Suemori 2003).

The second development in gendered effects of marriage on health points out that the health benefit of marriage differs by gender because men and women are structurally situated at different positions, and thus benefit from different aspects of marriage. Among the three mechanisms that link marriage and health, women are more likely to receive economic advantages from marriage (Ross, Mirowsky and Goldsteen 1990; Lerman 2002; Waite and Gallagher 2000; Wood, Goesling, and Avellar 2007) while men benefit more from the social and

emotional support and health regulation offered by marriage (Umberson 1992; Lillard and Waite 1995; Zick and Smith 1991;Waite 1995; Thomson and Walker 1989). For instance, husbands are more likely to list their spouse as their emotional confidant and tend to receive more social support from their spouse in the marriage (Vanfossen 1981, Phillipson 1997). Also, single men are much more likely to engage in risky behaviors and maintain unhealthy lifestyles than single women, but upon marriage, they tend to control their behaviors and improve the overall health status (Umberson 1987; Waite 1995). On average, studies conclude that men and women both benefit from marriage in terms of physical and mental health (e.g. House, Landis, and Umberson 1988; Waite and Gallagher 2000). Structural studies, by nature, assume that structural advantages conferred by marriage have more profound implications on health than the gendered experiences within the structure. Exclusive focus on structural mechanisms, however, may ignore the possibility that having a full-time job has a different meaning for men and women and that full-time employment and marriage may become a source of role conflict and reduce health benefits for women.

The third line of research argues that the gender inequality in the marriage benefit reported in early studies was based on an inadequate conceptualization and measurement of health status (Aneshensel et. al. 1991; Simon 2002). Researchers argue that men and women are socialized differently in expressing their experience of distress. While women are often encouraged to develop emotional attachment to others and 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 (Rosenfield, Vertefuille, and McAlpine 2000). As a consequence, women in general have higher rates of psychological problem such as depression and anxiety disorders than men, while men are more likely to experience higher rates of alcohol and substance problems than

women (Kessler et al. 2005). Because past research only focused on psychological disorders, it is likely that they have overestimated the mental problems of women and underestimated the problems typical of men (Aneshensel et. al. 1991). Studies that use gender-specific mental health outcomes show both men and women benefitting equally from marriage (Horwitz, White, and Howell-White, 1996; Simon 2002; Horwitz 1994).

In summary, while each line of research is informative in understanding the gendered effects of marriage on health, previous research is limited since few studies consider both structural mechanisms and gender roles through which men and women's health is affected by marriage. Furthermore, studies typically focus on one type of mental distress without distinguishing gendered processes that result in gender-specific mental disorders (Simon 2002). Using Japan as a case study, this dissertation examines both gendered structures and role experience of marriage, while paying attention to gender-sensitive measures of mental health in addition to general health status.

Marriage and Health in Japan

Although the positive relationship between marriage and health has received increasing attention from the broader public in the United States (Parker-Pope 2010; Saslow 2011), we know surprisingly little about this relationship outside the U.S. and Western Europe. Japan is often characterized as society where traditional gender and family relations still persist, despite its socio-demographic similarities with Western industrialized nations (Cabinet Office 2004; Tsuya et al. 2005; Tsuya and Mason 1995). Various measures of gender equality rank Japan among the lowest in the OECD countries (World Economic Forum 2012; United Nations Development Programme 2009). Japan serves as an ideal case to test gender-role theory in predicting health. If the classical gender-role theory holds true, we would see the most

pronounced gender difference in marriage benefit. In applying the classical gender-role theory to Japan, instead of arguing female disadvantage in the marriage benefit, this dissertation identifies work hours as another mechanism that separates married men and women's everyday lives with important health implications. The strong gendered division of labor is likely to force married men to work long hours outside the home, preventing them from receiving the protective effects of marriage. Married women, on the other hand, may not feel the strain of combining marriage and work because a large majority of women choose to terminate their career upon marriage. In other words, this dissertation argues that, despite strong gender norms, married women in Japan on average may not be disadvantaged in terms of their health. By analyzing the gendered effects of marriage on health in Japan where gender roles are rigid, this dissertation intends to examine the generalizability of "marriage benefit" and its gender difference found in the United States. I explain this mechanism in detail below (Figure 2.1).

[Figure 2.1 about here]

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.

Empirical Research on Marriage and Health in Japan

Although there is little systematic research examining the gendered impact of marriage on health in Japan, longitudinal evidence among women suggests marriage benefit on health. Using nine waves of panel surveys, Lim and colleagues (2008) estimate the relationships between women's health and marital status, net of baseline health. Their findings include that marriage is associated with lower levels of psychological distress and better physical health among Japanese women (Lim, Raymo, and Bumpass 2008). Baba and others' study on women between ages 29 and 39 also find a lowered risk of 12-month mental illness among married women (Baba et. al. 2003).

The limitations of these studies, however, are their exclusive focus on women. Since men are also likely to go through transitions as a result of marriage, we need to incorporate men's experience to understand the gendered mechanism and experience of marriage on health. In other words, women's health implications should be examined in comparison to men's.

Studies that include both genders show inconsistent findings. A cross-national survey conducted by the International Consortium of Psychiatric Epidemiology (ICPE) shows no marital status differences in depression in Japan, while unmarried persons in Canada, Chile, the Netherlands, and the US showed a significantly higher prevalence of depression (Andrade et al. 2003). A comparative study of mental health in Japan and the U.S., on the other hand, showed significant, though relatively small, advantage of marriage for Japanese women (Inaba et al. 2005). This study showed that while the protective effect of marriage on depressive symptoms is similar in magnitude for both men and women in the U.S., Japanese women benefit less from

marriage than men. These studies suggest that marriage and gender can operate differently in Japan to affect health.

The relationship between marriage and physical health has received even less attention in Japan (Kawakami, Kobayashi, Hashimoto 2006). Ikeda and colleagues' study on mortality indirectly suggests that marriage is more beneficial for men than for women. They find that while single status was associated with a higher risk of mortality than is married status for both men and women, divorce and widowhood are associated with elevated risk for men, but not for women (Ikeda et. al. 2007). The problem of these studies, however, is the lack of control variables for marriage selection for elderly population in Japan. The prevalence of arranged marriage until the middle of the 20th century may have caused unhealthy men and women to stay single and raised the mortality risk among elderly single individuals (Goldman and Hu 1993). A study that focuses on younger individuals with their past health condition controlled, therefore, may reduce the possible selection bias and also contribute to the understanding of health and marriage disparities among young adults in Japan.

Hypotheses

The following hypotheses summarize the relationship between marriage, gender, and health for the purpose of this study. H1 and H2 summarize the general relationship between marriage, gender, and health in Japan. H3 though H5 are drawn from the structural perspective of marriage and health and are based on findings in the United States. H6 identifies Japanese contexts of marriage and health as they relate to work hours.

H1: Married individuals are, overall, healthier than single individuals in Japan.

H2: The health benefit of marriage is generally smaller for men than for women.

H3: Higher levels of economic resources mediate the positive association between marriage and health especially for women.

H4: The presence of supportive networks mediates the positive association between marriage and health especially for men

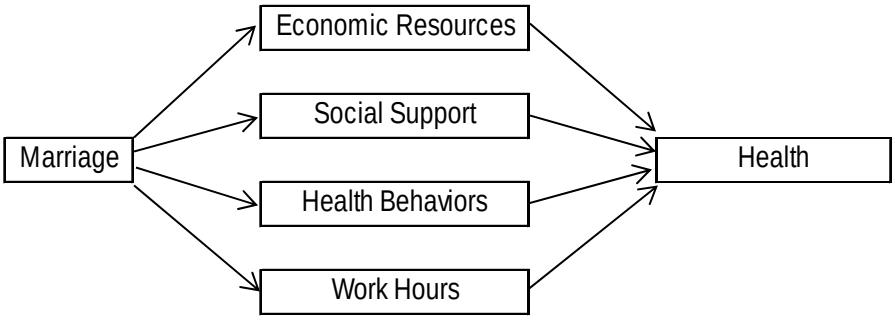
H5: Healthy behavior mediates the association between marriage and health especially for men.

H6: Work hours mediate the association between marriage and health especially for men.

Turning to the gender role theory of marriage and health, the meaning of combining work and family is likely to be gendered in Japan. Because of the strong norm of gendered division of labor, married women with employment are still responsible for most of the housework and therefore are more likely to experience the "second shift" (Hochschild 1989; Tsuya et al. 2012). Unlike the contemporary United States, role conflict and work overload are likely to take away the health benefit of occupying multiple roles for wives in Japan. Previous research by Kawakami and others (2006), for example, shows that sleep deprivation is greater for women with full time jobs and those co-residing with parents. In contrast, it is expected that men's health is unaffected by their employment, since men are culturally expected to be the breadwinner for the family.

H7: The combination of full-time employment and marriage reduces the health benefit of marriage for women but not for men.

Figure 2.1. Conceptual Model of Marriage and Health



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CHAPTER 3: DATA AND METHODS

This chapter describes the data and methods I use in subsequent empirical chapters. In the first section, I describe my data, the Japanese Life Course Panel Survey (JLPS), in detail. The second section provides a description of the variables and methods used in the empirical chapters.

Data: Japanese Life Course Panel Survey

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).

For the purpose of the study, it is the best dataset available. Until recently, research on family and health in Japan had relied on small scale community surveys (Kawakami, Kobayashi, Hashimoto 2006, Ishihara 1999). Studies at a national level often utilize two datasets, the Japanese Panel Survey of Consumers data (e.g. Baba et al 2003) and the Japanese Assets and Health Dynamics Among the Oldest Old survey (e.g. Okabayashi et al. 1997) which are limited

to female respondents and the elderly population, respectively. The JLPS on the other hand, includes both men and women and covers the age range where marriage is likely to be combined with employment and child-rearing. Other large-scale social surveys, such as National Family Research of Japan (Inaba 2002) and Japanese General Social Survey (JGSS Research Center 2009), lack detailed measures of health, and the sample size, especially of single individuals, becomes quite small when we limit the sample to the working age population. The JLPS includes questions on general and mental health measures, health behaviors, social support, marital status, family structure, and employment in addition to various demographic characteristics and attitudes of individuals interviewed, thus providing sufficient information to test various hypotheses about marriage, gender, and health.

Response Rate and Missing Data

Declining respondent cooperation has become a pervasive problem for social surveys in Japan for the past decade, especially after the enactment of the Personal Information Protection Law in 2003 (Inaba 2007). Although JLPS's response rate may seem low, other national surveys also suffer from low response rates. The Japanese General Social Survey in 2005 has a response rate of 37.2%, while similar panel survey conducted in 2004 had 27.4% of response rate (Miwa 2008). Other national opinion polls also have response rates below 60% (Rindfuss et al. 2012).

Despite the relatively low response rate of 31% (for the total sample), the JLPS data are generally representative of the national population by age, gender, marital status, types of residential area, occupation, work hours, and education (Miwa 2008). Furthermore, a recent study using Japanese surveys on family finds that the relationship between various independent variables and an array of substantive dependent variables did not vary much by the level of respondent cooperation. This suggests that even with a low response rate, the relationship

between demographic independent variables and substantive dependent outcomes may be less likely to be biased than might be assumed (Rindfuss et al. 2012).

For individual question items, income received particularly poor respondent cooperation. About 32% of responses on household income were missing. In order to minimize bias generated by dropping cases with missing values, I replaced a missing household income with the sum of the respondent's and spouse's incomes. Cases remained missing when both personal and spousal incomes were missing.

Methods

Marriage Selection

The weakness of the dataset for this dissertation lies in the fact that it is based on a cross-section study. This is particularly problematic when we consider the issue of marriage selection (Fu and Goldman 1996; Lillard and Panis 1996). The marriage selection hypothesis argues that healthier individuals are more likely to find a marriage partner because their favorable health characteristics make them a good candidate for marriage. To address this issue, an increasing number of studies use panel data which follow same individuals over time. One of the popular approaches is to include the baseline health status as a control to assess the effect of marriage on current health net of initial health (Horwitz, White, & Howell-White 1996; Waldron, Weiss, and Hughes 1998; Simon 2002). More recent studies utilize fixed effects models where within-individual changes in outcome are regressed on within-individual changes in marital status, and random effects models where weights are calculated using within- and between- individual covariance (Johnson and Wu 2002; Musick and Bumpass 2012; Nakazawa 2010; Wade and Pevalin 2004; Lim et al. 2008). In general, results based on panel design replicate cross-sectional findings, although the effect of marriage selection is not entirely eliminated.

Since this study is based on cross-sectional data, I include a measure of past health status, a proxy for pre-marriage health status, using the question that asked respondents whether they have experienced illness or injury that required a long-term rest. For the second chapter where I measure mental health effect of marriage, I further include self-rated health, a subjective evaluation of one's general health, which is more likely to be correlated with past mental health status. It is important to note, however, that results may still be overestimated since we do not have an exact measure of health prior to marriage.

Measuring Health

I use three measures to capture different aspects of health status.

Self-Rated Health: I use self-rated health as a measure of the general health condition for both men and women. Self-rated health is measured by survey responses to the question "Would you say that in general your health is excellent, very good, good, fair, or poor?". This question has been asked in various health surveys including the Behavioral Risk Factor Surveillance System by the Centers for Disease Control and Prevention (CDC 2009). Self-rated health is a robust indicator of general health status that predicts morbidity and mortality (Ferraro and Yu 1995; Idler and Benyamini 1997). The concept also appears to be robust across different languages and cultures (Chandola and Jenkinson 2000; Shibuya, Hashimoto and Yano 2002). Following other studies (e.g. Frisbie, Cho, and Hummer, 2001; Lynch, 2003), the response categories were dichotomized into good health (i.e. excellent, very good, and good) and poor health (fair and poor). Studies have shown that a dichotomous response for self-rated health yields similar results to ordinal logistic regression in its relationship with socioeconomic status (Manor, Matthews, and Power, 2000) and depression (Schnittker 2005), and find no gender bias in reporting (Manor, Matthews, and Power, 2000). The preliminary descriptive analysis (Figure

3.1) shows that the disjuncture emerges between the "Good" and "Fair" categories, i.e. the distribution is somewhat uniform among the top 3 categories (14% being in Excellent health, 34% in Very Good, and 40% in Good health) followed by a steep fall (11% in Fair and 1% in Poor health). A series of binary logistic regressions are used to assess the associations between marriage, gender, and health. Additional analyses are also conducted using an alternative coding of the dependent variable.

[Figure 3.1 about here]

Mental Health Inventory-5: To measure mental health issues that are considered to be more prevalent for women than men, the 5–item mental health inventory, or MHI-5 (Yamazaki, Fukuhara, and Green 2005), is used to measure depressive and anxiety disorders. This measure will complement self-rated health used in the previous chapter, by focusing on a mental aspect of health and by providing a more objective assessment of mental distress particularly among women. While the self-rated health is widely used to measure the general health condition, it is based on the subjective interpretation of both physical and psychological conditions. It is, for example, possible that individuals with the same level of mental distress could evaluate their subjective health status differently. By using a standard diagnostic measure, I attempt to capture psychological distress experienced by both genders and especially women.

MHI-5 uses 5 question items describing the emotions felt during the past 30 days. The items were taken from the 36-item Medical Outcome Study (MOS) Short Form Health Survey questionnaire in order to facilitate the administration of the survey (Ware and Sherbourne 1992, Rumph et. al. 2001, Yamazaki, Fukuhara, and Green 2005). Two of the question items focus on anxiety disorders and three items are focused on mood disorders. The respondents were asked to indicate how often they experienced the following emotions in the past month, ranging from "All

of the time" to "Not at all": 1) have been a very nervous person; 2) felt calm and peaceful; 3) felt downhearted and blue; 4) have been a happy person; and 5) felt so down that nothing could cheer you up. The questionnaire was translated in Japanese in a way that is conceptually equivalent and culturally appropriate in Japan. A sum score ranges from 5 to 30 and is transformed so that the new scale ranges from 0 to 100. High scores indicate good mental health. In a clinical setting, 52 is often used to as a cut-off point for depression. Studies confirm the validity of MHI-5 for mood and anxiety disorders for DSM-IV Axis-I diagnosis, and depression in comparison to Zung Self-rating Depression Scale (ZSDS) (Rumph et al. 2001, Yamazaki, Fukuhara, and Green 2005). Past studies also showed that MHI-5 is just as effective as the widely used General Health Questionnaire (Goldberg and Blackwell 1970) as a diagnostic tool (Berwick et al 1991). I treat MHI-5 scores as a continuous variable and since the histogram in Figure 3.2 shows that the distribution of MHI-5 approximates a normal curve, OLS regression analysis is used to assess the extent of the relationship between marriage, gender, and mental health.

[Figure 3.2 about here]

Sobriety: In the third empirical chapter, I use sobriety as an indicator of good mental health particularly for men. The JLPS includes one question on alcohol consumption – frequency of drinking. Respondents were asked to indicate their frequency of drinking from the following categories: 1) cannot drink alcohol, 2) quit drinking, 3) only on special occasions, 4) 2-3 times per month, 5) 1-2 days per week, 6) 3-4 days per week, 7) 5-6 times per week, and 8) every day. Those who drink more than 5 times a week are considered a frequent drinker with high distress, while those who drink less than 5 times a week are considered sober. Figure 3.3 shows the distribution of drinking frequency. Logistic regression is used to assess the effect of marriage on sobriety for men and women. In the empirical chapter, I also show results using other coding.

Extensive evidence shows that heavy drinking is associated with mental health issues (Grant et al. 2004, Kessler et al. 1997, Jane-Llopis and Matytsina 2006). Individuals with negative mood often consume alcohol to cope with the effect of stress and to relieve tension, and the association is particularly strong for men (Nolen-Hoeksema and Harrell 2002; Nolen-Hoeksema and Hilt 2006; Armeli et al. 2000; Cooper et al. 1992). Frequency of drinking is also related to stress and alcohol-related problems (Dawson and Archer 1993; Dawson, Grant, and Ruan 2005). Dawson and colleagues (2005) found that the number of stressful events is positively associated with the overall frequency of drinking. Their earlier study (Dawson and Archer 1993) also shows that frequency of heavy drinking, net of average daily ethanol intake, is positively related to alcohol dependence. Although the questionnaire did not ask the quantity of alcohol intake, I assume that the overall frequency of drinking is positively correlated with overall alcohol consumption.

[Figure 3.3 about here]

Independent Variables

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. I also use the amount of smoking to measure the degree of healthy behaviors which may explain the link between marriage and better health (Umberson 1992). Smoking more than 10 cigarettes per day is considered to be an unhealthy behavior. 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. Those who co-reside with his/her parent(s) are coded as 1. A summary of variables is presented in Table 3.1.

[Table 3.1. about here]

Figure 3.1. Distribution of self-rated health: JLPS 2007

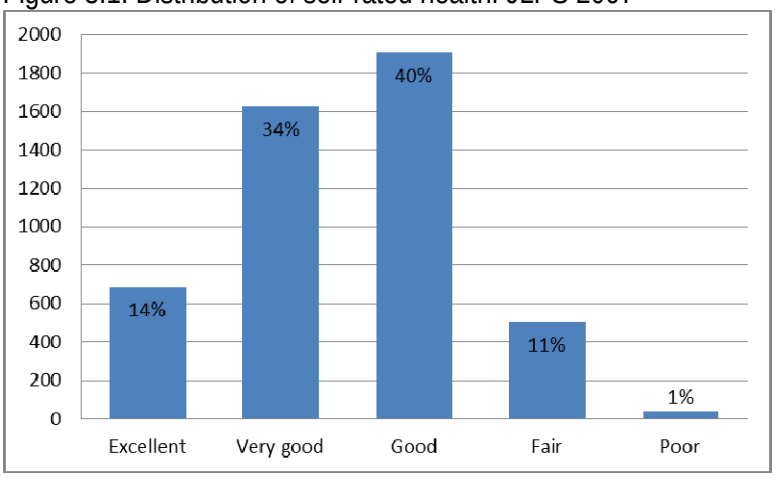


Figure 3.2. Histogram of 5-item mental health inventory: JLPS 2007

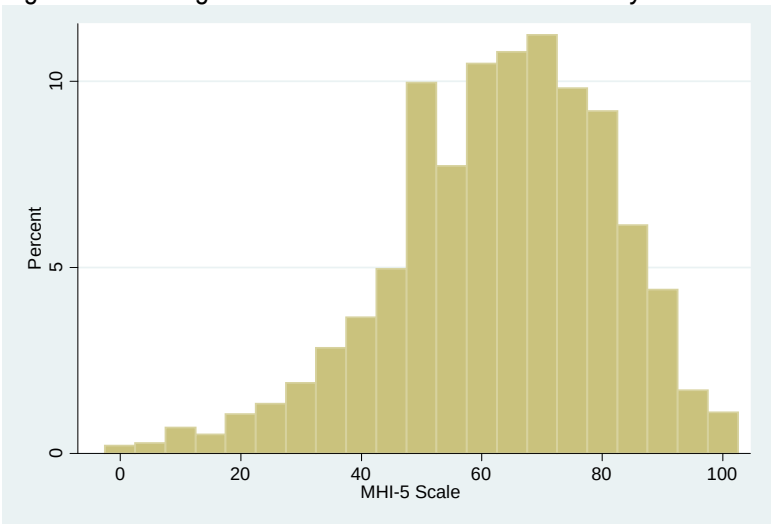


Figure 3.3. Distribution of drinking frequency: JLPS 2007

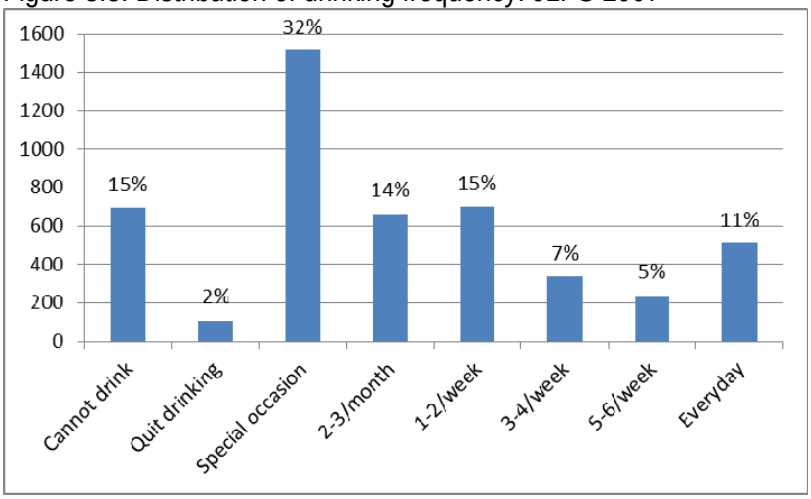


Table 3.1. Percent distributions and means of respondent characteristics by gender and marital status: JLPS 2007

	Total Sample (N=4,775)		Female			Male		
Variable	N	%	Never-married (n=1,109)	Currently-married (n=1,222)	Divorced/ Widowed (n=104)	Never-married (n=1,273)	Currently-married (n=1,033)	Divorced/ Widowed (n=59)
Mean Age (s.d.)	31 (6)		27	34	34	28	34	34
With One or More Children	1955	40	0	84	66	0	81	57
Co-Residence with Own Parent(s)	2135	45	80	7	50	75	13	53
Education								
High school or less	1452	30	20	36	40	28	37	49
Vocational school, 2-year college	1548	33	41	46	45	20	21	24
College or above	1762	37	39	18	14	52	42	27
Employment								
Unemployed	208	4	4	7	6	5	1	7
Employed	2332	76	78	56	92	74	98	92
Out of Labor Force	922	19	18	37	3	21	1	2
Household Income (in mil. JP yen)	5.31 (3.97)		4.72	5.80	3.67	4.80	6.12	5.21
No Social Support	2000	42	41	39	48	46	39	47
11 or More Cigarettes per Day	1015	21	7	9	30	29	40	53
Average Work Hours per Week	36 (23)		36	18	36	39	53	48
Past Illness/Injury	1007	21	18	23	20	20	22	37
Self-Rated Health (5=excellent, 1=poor)	3.5 (.9)		3.5	3.6	3.4	3.5	3.5	3.3
5-Item Mental Health Inventory	63 (18)		61	65	59	62	66	58
Drink 5+ Times a Week	751	16	6	12	18	12	33	47

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

CHAPTER 4: MARRIAGE, GENDER, AND SELF-RATED HEALTH

Review on Theory, Research Hypotheses, and Data

Are married individuals healthier than their single counterparts? Is there a gender difference in the health benefit of marriage? Research in health shows that married individuals live longer (Waite 1995), evaluate their health favorably (Williams and Umberson 2004), and have lower rates of chronic illness, functioning problems, and disabilities (Pienta, Hayward, and Jenkins 2000), than single individuals. Scholars attribute these health benefits of marriage to three structural aspects of marriage: greater economic resources, increased social support, and promotion of healthy behaviors by a spouse (Waite and Gallagher 2000).

Theoretical debates still remain regarding gender differences in the health benefits of marriage. Classical gender-role theorists argued that women are disadvantaged because of inequality within and outside the household (Gove and Tudor 1973). Recent studies, however, argue that combining marital and family roles has become more common and acceptable for women, such that the costs of added roles are offset by the rewards of occupying multiple roles, including 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 highlights the different structural aspects of marriage that men and women can benefit from: men gain from social support and promotion of healthy behaviors, while women gain from increased economic resources (Waite and Gallagher 2000).

Using self-rated health, this chapter intends to assess the general health conditions of men and women by their marital status. Utilizing data from Japan, I test whether the classical gender role theory holds true in a society where gender role expectations are traditional. As outlined in Chapter 1, I identify work hours as an important mechanism through which the health benefit of

marriage is obtained differently for men and women. The strong gendered division of labor in Japan is likely to force married men to work long hours outside the home, preventing them from receiving the protective effects of marriage. In contrast, married women in Japan, on average, may not feel the strain of combining marriage and work because a large majority of women choose to terminate their career upon marriage. Figure 4.1 illustrates the mechanism where marriage leads to general health conditions in Japan.

[Figure 4.1. about here]

The following research hypotheses are tested in order to examine relationships among marriage, gender, and general health.

H1: Married individuals have better self-rated health than single individuals.

H2: The positive effect of marriage on self-rated health is stronger for women than for men.

H3: The positive effect of marriage on self-rated health is mediated by household income for women.

H4: The positive effect of marriage on self-rated health is mediated by social support for men.

H5: The positive effect of marriage on self-rated health is mediated by health behaviors for men.

H6: The positive effect of marriage on self-rated health is mediated by fewer work hours for women.

In addition, because of traditional gender norms, combining multiple roles is expected to impact women's health negatively. Role conflict and work overload are likely to take away the health benefit of occupying multiple roles for women. Therefore -

H7: Combining marriage and employment is detrimental to women's mental health.

As described in Chapter 2, the data used are from the first wave of Japanese Life Course Panel Survey conducted in 2007 (n=4,800). The dependent variable is self-rated health, a robust

indicator of general health status that predicts morbidity and mortality (Ferraro and Yu 1995; Idler and Benyamini 1997). Respondents were asked to evaluate their general health condition by indicating either "excellent", "very good", "good", "fair" or "poor". The response categories were dichotomized into good health (i.e. excellent, very good, and good) and poor health (fair and poor).

A series of binary logistic regressions are used to examine the relationship among marriage, gender, and health. I first run models with all respondents to assess the general association between marriage and health. Next, I separate the sample by gender to examine in detail the gender differences in the relationship between marriage and health. I then introduce interactions of multiple roles to see how the role combination affects men and women's health. All models include respondents' past health status which asked whether they experienced illness or injury that required a long-term rest. The past health status is included to reduce the effect of selection of healthier individuals to marry. Additional analyses are also conducted using an alternative coding of the dependent variable.

Results

Descriptive Statistics

Table 4.1 shows percentage distributions and means of independent variables stratified by good self-rated health (i.e. excellent, very good, or good health) and fair or poor health. The table indicates that male and never-married individuals are more likely to report fair or poor health. Those with no social support, who smoke more than 10 cigarettes per day, and who have experienced illness or injury that required a long-term rest, are also likely to report fair or poor health. On the other hand, currently-married respondents and those with a child are less likely to report fair or poor health.

[Table 4.1 about here]

Multivariate Statistics

Table 4.2 shows the relationship between marriage, gender, and health to test several hypotheses: 1) whether or not marriage is associated with better health (H1), 2) gender differences in the magnitude of marriage benefit (H2) and, 3) whether or not economic resources, social support, and health behaviors mediate the association between marriage and health (H3-6). Overall, the data suggest that marriage is associated with better self-rated health in Japan. Model 1 shows that compared to never-married respondents, married individuals are about 94% more likely to report excellent, very good, or good health. Being female also increases the propensity of reporting good health by 30%. The positive relationship between marriage and health is reduced considerably when the presence of a child under age 18 is introduced in Model 2, indicating that the positive effect of marriage is partially explained by having a young child. The independent effect of the presence of a child continues to hold even after the structural mechanisms such as income, social support, and health behaviors are controlled.

To examine gender differences in the positive effect of marriage on health, Model 3 introduces the interaction terms between gender and marital status. Interaction terms indicate that being female and being currently-married increases the odds of reporting good health by 40%. The female advantage of marriage on health becomes even stronger after controlling for various structural mechanisms (Model 8). Predicted probabilities in Figure 4.2 further show the female advantage of marriage on good health[1]. While the never-married men and women both have 86% probability of reporting good health, currently-married females have 94% probability

[1] Predicted probabilities in this chapter are calculated with other covariates – past health status, age, education, co-residence with parent(s), presence of a child, employment, income, social support, and smoking – set at means.

of being in good health. The currently-married men, on the other hand, show only 91% of reporting good health.

Models 4 through 7 test the four structural mechanisms of marriage benefit: economic resources, social support, a healthy behavior, and employment[2]. In models 4 through 7, the main effect of marriage is largely unchanged. Furthermore, the interaction term between marriage and being female in model 8 becomes stronger, indicating that the greater effect of marriage on health for women is not explained by household income, social support, smoking, or employment. Additionally, we see that the introduction of smoking in Model 6 explains the positive and direct effect of being female on self-rated health. Women of all marital status, on average, report better health than men because they tend to smoke less.

[Table 4.2 about here]

[Figure 4.2 about here]

Table 4.3 divides the sample into men and women to further explore the relationship between marriage and health by gender. A comparison between women and men in Model 1 indicates that the effect of marriage on health is substantially greater for women. Married women are much more likely to report good health than their single counterparts by more than 230%, whereas for men, being married increases the odds of reporting good health only by 42%. Model 2 adds co-residence with an individual's own parent(s). For women, the effect of marriage becomes stronger, which suggest that the positive effect of marriage was suppressed by female respondent's non-coresidence with their own parent(s). The high propensity of reporting good health among the marrieds is somewhat offset by the fact that married women are less likely to live with their own parents, which is associated with lower odds of reporting good

[2] Detailed information on work hours is introduced in Table 4.3.

health. In other words, single women who do not co-reside with their own parent(s) are even more disadvantaged compared to married women.

Model 3 further indicates the gendered relationship between marriage and health. The presence of a child under 18 reduces the positive association between marriage and health for women, indicating that the health benefits of marriage for women are partially explained by the presence of a young child. Having a young child may provide a structure and a sense of responsibility for women, which may increase the self-evaluation of their health status. Having a young child is associated with 60% increase in reporting better health for women. For men, the presence of a child is not related to their self-rated health, even though this variable explains the positive association between marriage and men's health -- the positive effect of marriage on health is reduced from 1.42 to 1.29 in Model 3 and it is no longer significant. Based on the results in Models 4 and 5, I speculate that the presence of a child is associated with social support and employment: male respondents with a child are perhaps more likely to have social support and to be employed, two factors which are both strongly related to self-rated health.

Model 4 adds income, social support, and smoking to the baseline demographic variables. While the effects of income and social support are similar for men and women, the effect of smoking in reducing self-rated health is greater for women (25% vs. 50% decline in reporting good health). Despite their strong associations with health, however, these structural mechanisms barely mediate the relationship between marital status and health. Their influence on self-rated health is mostly independent of marital status.

Model 5 adds work hours to test the alternative hypothesis unique to Japanese contexts. The odds ratio indicates that for men, work hours are associated with better health, but only up to 59 hours per week. Being unemployed, being out of labor force, and working more than 60

hours per week are negatively associated with men's better health. Although extremely long work hours are associated with worse health for men, being in employment in general, as opposed to not working at all, explains the positive relationship between marriage and health for men.

[Table 4.3 about here]

Table 4.4 introduces different sets of role combinations to test whether combining multiple roles influences marriage and health for men and women. Model 2 shows that the interaction between being currently-married and working full time reduces the odds of reporting excellent, very good, or good health by 55% for women. Even though marriage and full-time employment both have a positive effect on health (Model 1), combining both roles does not improve subjective health for women. For men, the combination of marriage and full-time employment is positively related to health, although the odds are not significant. Figure 3.3 shows predicted probabilities of good health by gender, marital status, full-time employment, and presence of a child. Compared to single women, married women on average, have higher probabilities of reporting good health. However, adding employment to marriage and to motherhood does not improve women's health. For men, marriage in general does not affect men's self-rated health. In contrast to women, the combination of marriage and a lack of employment appears to reduce men's health. The confidence intervals for these individuals are, however, quite large since few married men are unemployed or out of labor force. Taken together, multiple roles do not improve women's health when full-time employment is combined with marriage or child rearing. Men's health, however, appears to improve by combining multiple roles, although the statistical significance is small.

[Table 4.4 about here]

[Figure 4.3 about here]

Additional Analysis

Tables 4.5 and 4.6 show additional analyses using the alternative coding of self-rated health. In Table 4.5, those who report excellent or very good health are coded as 1, while those with good, fair, or poor health are coded as 0. About 50% of respondents have either excellent or very good health. In Table 4.6, I treat the five-category self-rated health as a continuous variable, and use OLS regressions to predict better self-rated health scores.

Overall, the results are in line with what I found in the original binary coding of self-rated health. Marriage is associated with women's better health, but not with men's health. Social support, smoking, and work hours are strongly related with self-rated health in expected directions for both men and women. For women, the presence of a child mediates the positive effect of marriage on health. Once the presence of a child is controlled, as Model 3 in Table 4.5 shows, marriage is not significantly associated with excellent or very good health even for women. OLS models in Table 4.6 provide more nuanced mechanisms where the effect of marriage for women persists even after controlling for demographic background and structural mechanisms. This is perhaps due to the fact that self-rated health is treated as a continuous concept.

[Table 4.5 about here]

[Table 4.6 about here]

Discussions

While research in the United States finds a positive association between marriage and health, traditional gender norms in Japan suggest that marriage may operate differently in influencing health. In particular, long work hours were discussed to dilute the health benefit of

marriage especially for men who continue to work after marriage. While many married women are given the option to exit the labor market, combining work and family was expected to deteriorate the health of married women. Several hypotheses based on both structural and gender-role perspectives were tested, using a nationally representative sample of young adults aged between 20 and 40.

The results showed that, on average, Japanese women benefit more from marriage than men. However, combining marriage with full-time employment has a negative impact on women's health even after various structural mechanisms are controlled for. The ways in which marriage impacts health also differ greatly from the findings in the U.S. The three structural mechanisms of marriage benefit identified in American literature do not appear to mediate the relationship between marriage and health in Japan. First, household income has little effect on health in Japan for both men and women. Second, the social support and health behavior (i.e. smoking) have small mediating effects on health for women but not for men. Instead, the positive effect of marriage is mediated partially by the presence of a young child for women, and by employment and work hours for men.

These findings illustrate the complex relationship among gender, marriage, and health in Japan. In line with classical gender role theory (e.g. Gove 1972; Gove and Tudor 1973), combining marriage and employment was found to be a challenge for Japanese women. At the same time, however, marriage itself was found to be advantageous particularly for women, suggesting that classical gender role theorists may have overemphasized the impact of marriage on health by arguing that all aspects of marriage are harmful for women. It is possible that the strong cultural pressure for women in Japan to marry and settle down may create a stressful environment for women to remain single. In fact, 65% of single women in Japan in 1992

supported the statement “Women’s happiness lies in marriage, so it is better for women to marry”, while the percentage is substantially lower in the U.S. (10%), U.K. (17%), and Sweden (6%) (Retherford, Ogawa, and Matsukura 2001). In a society where 93% of women and 84% of men eventually marry (Cabinet Office 2011), adhering to traditional gender norms may provide a great sense of comfort and positive evaluation of health for women.

The role perspective also helps us understand the meaning of men’s role on their health. The current data showed that being unemployed or out of labor force has a negative effect on men’s health net of income and past health status. This finding appears in line with the view that men’s main role is tied to that of bread winner for the family and may influence men’s well-being and self-assessment of their health. All in all, the role perspective seems helpful in directing our attention to different meanings of marriage in society and by gender, but it may need to take into account the possibility that women can adapt to expected gender norms and obtain better health.

This chapter also finds gender differences in the structural mechanisms linking marriage and health. A striking difference between findings from the United States and Japan is that marriage is not mediated by healthy behaviors, social support or income, especially for men. Although social support and smoking have strong impacts on health, the relationships are direct and do not fully mediate the positive effect of marriage. This suggests that American literature may have overemphasized the role of marriage in shaping one’s health. It is possible that formal associations outside of marriage may influence health behaviors and provide/deprive a source of well-being. For instance, Japanese corporate culture often encourages after-hours drinking and socializing among employees. While this may provide social support (Ikeda et al. 2011) outside of marriage, it may also prevent the regulation of health behaviors by a spouse, resulting in

frequent smoking, drinking, and overwork among men (with colleagues). Allison (1994) further argues that this kind of male-dominant workplace culture also defines a kind of masculinity that emphasizes noninvolvement in family life and makes work-related demands more acceptable. Japanese men's involvement in work is also strengthened by their wives' strong identification with motherhood and care taker of the entire family. As a result, Japanese men's estrangement from family may dilute health benefits that marriage normally provides for women. Another reason why research in the U.S. finds a strong marriage benefit may be due to the lack of universal health care and the fact that marriage often provides medical insurance for a spouse. It is possible that universal health care and the availability of inexpensive medical care in Japan (Ikegami et al. 2011) explain the lack of a significant relationship between income and health. In general, marriage in Japan may not be so much of a romantic union between two individuals that exerts emotional, behavioral, and medical support, but rather it may be a pragmatic union that is closely linked to child rearing (for women) and employment (for men). This viewpoint falls in line with Hashimoto (1996)'s argument that the parent-child relationship is more central than the conjugal relationship to Japanese families because of Japan's cultural emphasis on family lineage.

Other unexpected findings include the positive effect of having a young child on women's health. Although this perspective is aligned with findings in American literature showing that women's well-being is more likely to be influenced by the parental role than men's, the relationship operates in the opposite direction of what American literature suggests. It is possible that child rearing creates a structure and social contacts outside the family, which may alleviate stress and the demands of child rearing. Japanese women's strong identification with motherhood (Rindfuss et al. 2004) may also provide a sense of purpose and fulfillment, leading to favorable evaluation of their own health status.

Figure 4.1. Conceptual Model of Marriage and Self-Rated Health

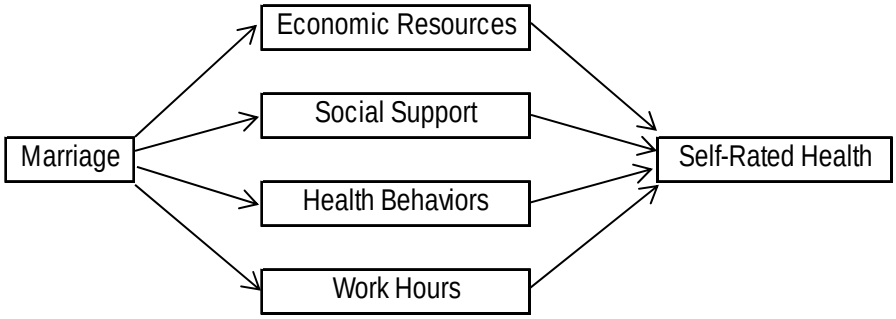


Table 4.1. Percentage distributions and means of independent variables, stratified by good vs. poor health: JLPS 2007

	Total Sample (N=4775)		Excellent, Very Good, or Good Health (N=4224)	Fair or Poor Health (N=551)
Variable	N	%	%	%
Male	2365	49	48	54
Marital Status				
Never-married	2382	49	49	56
Currently-married	2255	47	48	39
Widowed/Divorced	163	3	3	5
Mean Age (s.d.)	31 (6)		31 (6)	31 (6)
One or More Children	1955	40	42	33
Co-Residence with Parent(s)	2135	45	45	47
Education				
High school or less	1452	30	30	32
Cocational school, 2-year college	1548	33	32	35
College or above	1762	37	38	33
Employment				
Out of labor force	602	13	13	13
Unemployed	241	5	5	8
Employed	3909	82	83	79
Household Income per Family Member				
.8 million JP yen or less	1193	27	26	29
.8-1.4 million JP yen	1158	26	26	24
1.4-2.2 million JP yen	812	18	18	20
Mare than 2.2 million JP yen	1307	29	30	27
No Social Support	2000	42	40	54
11 or More Cigarettes per Day	1015	21	20	28
Mean Work Hours per Week (s.d.)	36 (23)		36 (23)	36 (25)
Past Experience of Illness or Injury	1007	21	19	38

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

Table 4.2. Logistic Regression Odds Ratios Predicting Good Health (1=Excellent/VeryGood/Good Health, 0=Fair/Poor Health): JLPS 2007

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7		Model 8	
	OR	p	OR	p	OR	p	OR	p	OR	p	OR	p	OR	p	OR	p
Female	1.29	**	1.28	*	1.10		1.30	**	1.29	*	1.15		1.20	†	0.98	
Marital Status																
Never-Married	Ref		Ref		Ref		Ref		Ref		Ref		Ref		Ref	
Currently-Married	1.94	***	1.54	*	1.31		1.51	*	1.47	*	1.44	*	1.45	*	1.16	
Widowed/Divorced	1.04		0.87		0.98		0.85		0.85		0.89		0.92		0.98	
Past Health	0.37	***	0.37	***	0.38	***	0.38	***	0.39	***	0.38	***	0.39	***	0.39	***
Age	0.98	*	0.98	*	0.98	*	0.98	**	0.98	*	0.98	*	0.98	*	0.98	*
Education																
High school or less	Ref		Ref		Ref		Ref		Ref		Ref		Ref		Ref	
Vocational school, 2-year college	0.96		0.97		0.97		0.95		0.94		0.90		0.90		0.90	
College or above	1.31	*	1.33	*	1.34	*	1.26	†	1.24	†	1.15		1.14		1.17	
Coresidence with Own Parent(s)	1.19		1.19		1.22		1.29	*	1.29	*	1.27	†	1.25	†	1.27	†
Child under Age 18			1.35	†	1.34	†	1.46	*	1.45	*	1.49	*	1.50	*	1.49	*
Interactions																
Female * Married					1.40	†									1.74	**
Female * Widowed/Divorced					0.85										0.96	
Hhld Income per Family Member																
.8 million JP yen or less							Ref		Ref		Ref		Ref		Ref	
.8-1.4 million JP yen							1.19		1.18		1.19		1.13		1.12	
1.4-2.2 million JP yen							1.04		1.02		1.03		0.98		0.97	
Mare than 2.2 million JP yen							1.39	*	1.39	*	1.40	*	1.30	*	1.28	†
Icome missing							0.84		0.82		0.82		0.83		0.82	
No Social Support									0.62	***	0.61	***	0.62	***	0.62	***
11 or More Cigarettes per Day											0.67	**	0.65	***	0.66	***
Employment																
Out of labor force													Ref		Ref	
Unemployed													0.77		0.83	
Employed													1.31	†	1.52	*
AIC	3260		3257		3257		3256		3224		3207		3190		3187	
N	4729		4723		4723		4723		4705		4694		4672		4672	

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

Figure 4.2. Predicted Probabilities and 95% CI of Reporting Good Health by Gender and Marital Status: JLPS 2007

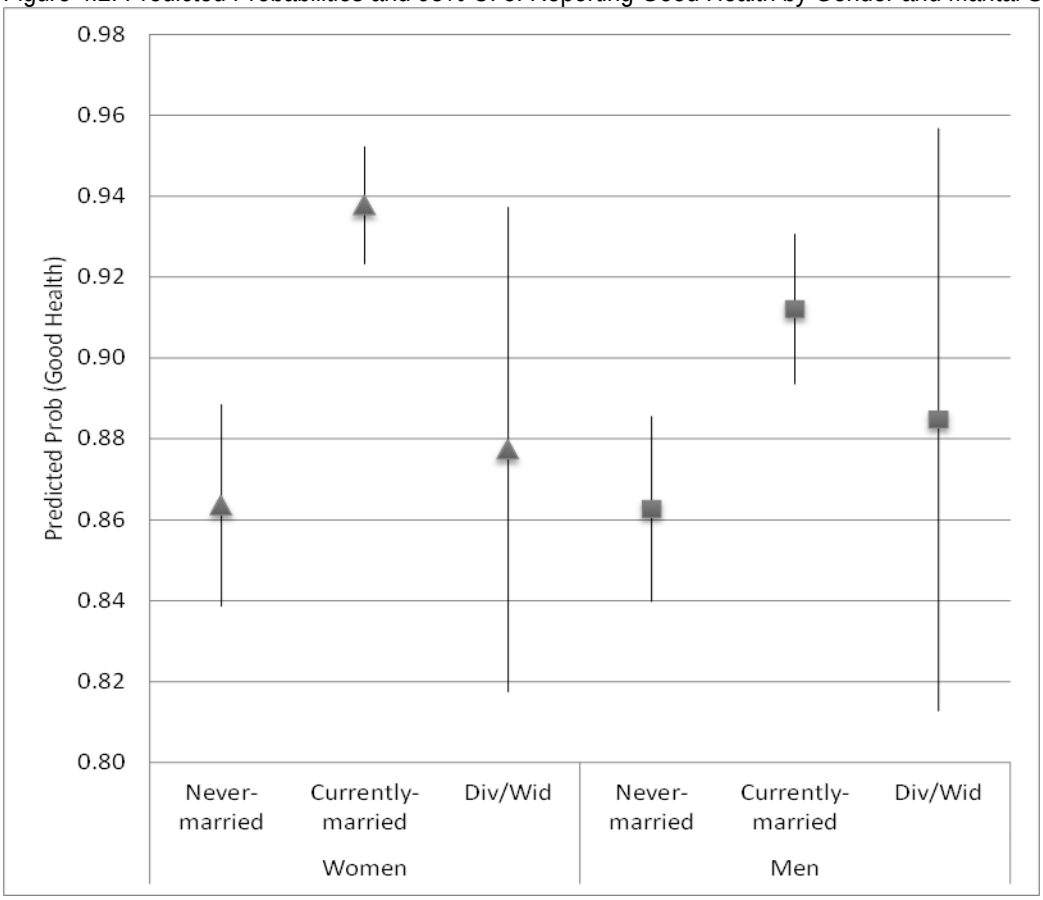


Table 4.3. Logistic Regression Odds Ratios Predicting Good Health (1=Excellent/VeryGood/Good Health, 0=Fair/Poor Health) by Gender: JLPS 2007

	Model 1		Model 2		Model 3		Model 4		Model 5	
	Femal	Male	Femal	Male	Femal	Male	Femal	Male	Femal	Male
	OR p	OR p	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	Ref	Ref
Currently-Married	2.33***	1.42*	3.03***	1.42*	2.10**	1.29	1.88*	1.22	2.07*	1.15
Widowed/Divorced	1.00	1.05	1.18	1.05	0.89	0.96	1.00	0.91	1.01	0.95
Past Health Status	0.34***	0.39***	0.35***	0.38***	0.35***	0.38***	0.35***	0.41***	0.36***	0.42***
Age	0.97*	0.98	0.98†	0.98†	0.97†	0.98	0.97*	0.98†	0.97*	0.98
Education										
High school or less	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Vocational, 2-year college	1.19	0.77	1.21	0.76	1.23	0.77	1.11	0.72	1.12	0.71
College or above	1.78**	1.08	1.85**	1.07	1.88**	1.08	1.61*	0.93	1.66*	0.90
Coresidence with Parent(s)			1.49*	1.02	1.49*	1.02	1.45†	1.11	1.41†	1.08
Child under Age 18					1.59*	1.14	1.73*	1.29	1.8*	1.26
Income per Family Member										
.8 million JP yen or less							Ref	Ref	Ref	Ref
.8-1.4 million JP yen							1.27	1.15	1.22	1.06
1.4-2.2 million JP yen							0.97	1.12	0.94	1.05
More than 2.2 million JP yen							1.26	1.51*	1.19	1.33
Missing							0.63†	1.05	0.62	1.08
No Social Support							0.60***	0.61***	0.60***	0.60***
11+ Cigarettes per Day							0.51**	0.75*	0.51**	0.75*
Ave. Work Hours per Week										
Out of labor force									Ref	Ref
Unemployed									1.02	1.15
1-35 hours									1.18	3.12**
36-49 hours									1.60	2.84***
50-59 hours									1.43	3.10***
60+ hours									1.01	1.60†
Missing									1.09	3.15**
AIC	1542	1740	1528	1732	1526	1734	1493	1718	1503	1692
N	2414	2338	2400	2329	2396	2327	2382	2312	2382	2304

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

Table 4.4. Logistic regression odds ratios predicting good health 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						
Currently-Single	Ref	Ref	Ref	Ref	Ref	Ref
Currently-Married	1.75 *	1.31	2.82 **	0.62	1.75 *	1.31
Past Health	0.34 ***	0.42 ***	0.35 ***	0.42 ***	0.35 ***	0.42 ***
Age	0.97 *	0.98	0.97 *	0.98	0.97 *	0.98 *
Education						
High school or less	Ref	Ref	Ref	Ref	Ref	Ref
Vocational school, 2-year college	1.12	0.77	1.12	0.77	1.13	0.77
College or above	1.52 *	0.99	1.54 *	0.99	1.54 *	1.00
Employment						
Unemployment/ Out of labor force	Ref	Ref	Ref	Ref	Ref	Ref
Part-time employment	1.18	2.74 ***	1.45	2.41 **	1.32	2.46 **
Full-time employment	1.45 †	2.02 **	2.11 **	1.91 **	1.91 **	1.98 **
Coresidence with Own Parent(s)	1.30	1.13	1.33	1.13	1.32	1.13
Child under Age 18	1.99 **	1.15	1.88 **	1.14	2.77 **	0.72
Married * Part-time work			0.76	5.69		
Married * Full-time work			0.45 *	2.16		
Child * Pull-time work					0.88	4.24
Child * Full-time work					0.47 *	1.57
Hhld Income per Family Member						
.8 million JP yen or less	Ref	Ref	Ref	Ref	Ref	Ref
.8-1.4 million JP yen	1.29	1.10	1.23	1.10	1.25	1.10
1.4-2.2 million JP yen	0.98	1.01	0.95	1.02	0.99	1.02
Mare than 2.2 million JP yen	1.22	1.31	1.19	1.31	1.21	1.30
Missing	0.62 †	0.99	0.63	1.02	0.64	0.99
No Social Support	0.58 ***	0.63 ***	0.58 ***	0.63 ***	0.59 ***	0.63 ***
11 or More Cigarettes per Day	0.49 **	0.78 †	0.50 **	0.78 †	0.49 **	0.78 †
AIC	1424	1646	1424	1647	1424	1648
N	2285	2215	2285	2215	2285	2215

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

Figure 4.3. Predicted Probabilities and 95% CI of Reporting Good Health by Gender, Marital Status, Child, and Employment: JLPS 2007

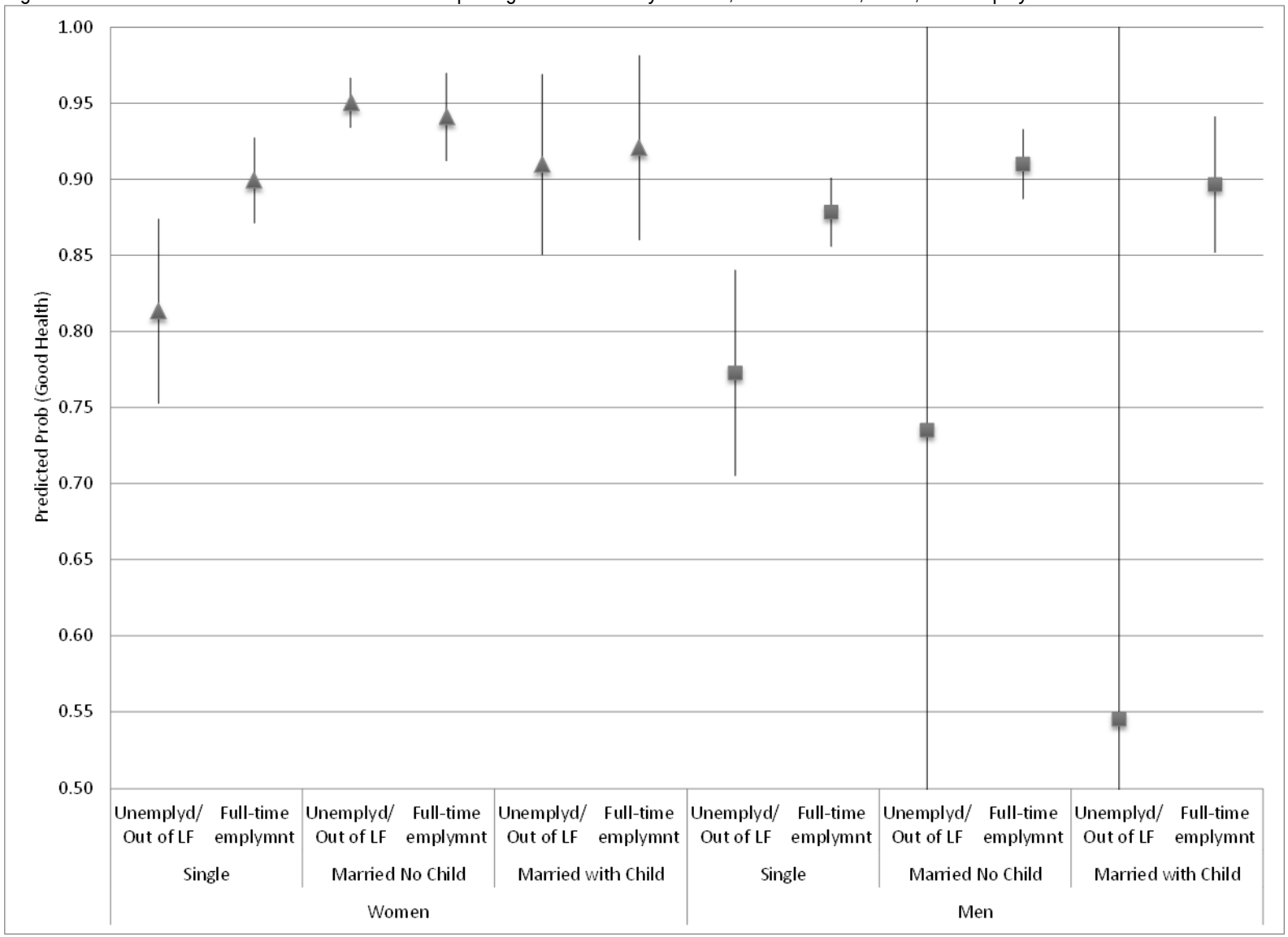


Table 4.5. Logistic Regression Odds Ratios Predicting Very Good Health (1=Excellent/Very Good Health, 0=Good/Fair/Poor Health) by Gender: JLPS 2007

	Model 1		Model 2		Model 3		Model 4		Model 5	
	Femal	Male	Femal	Male	Femal	Male	Femal	Male	Femal	Male
	OR p	OR p	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	Ref	Ref
Currently-Married	1.45***	1.11	1.35*	1.00	1.26	1.13	1.17	1.11	1.05	1.10
Widowed/Divorced	0.99	1.03	0.99	0.99	0.93	1.08	0.96	1.12	0.94	1.15
Past Health Status	0.54***	0.64***	0.53***	0.64***	0.53***	0.64***	0.53***	0.67***	0.52***	0.68***
Age	0.99*	0.98†	0.99	0.98*	0.99	0.98*	0.98†	0.97*	0.98	0.98†
Education										
High school or less	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Vocational, 2-year college	1.52***	1.34*	1.56***	1.35*	1.57***	1.34*	1.46***	1.27†	1.47***	1.26†
College or above	2.25***	2.07***	2.26***	2.09***	2.26***	2.02***	2.05***	1.79***	2.06***	1.76***
Coresidence with Parent(s)			0.88	0.89	0.87	0.89	0.88	0.93	0.87	0.93
Child under Age 18					1.10	0.90	1.22	0.97	1.23	0.96
Income per Family Member										
.8 million JP yen or less							Ref	Ref	Ref	Ref
.8-1.4 million JP yen							1.00	1.11	1.04	1.10
1.4-2.2 million JP yen							1.16	1.06	1.19	1.07
More than 2.2 million JP yen							1.15	1.28†	1.23	1.27†
Missing							0.67†	0.70	0.66*	0.71
No Social Support							0.79**	0.70***	0.77**	0.70***
11+ Cigarettes per Day							0.60**	0.66***	0.58**	0.66***
Ave. Work Hours per Week										
Out of labor force									Ref	Ref
Unemployed									0.79	0.77
1-35 hours									1.02	1.90**
36-49 hours									0.85	1.34
50-59 hours									0.73	1.33
60+ hours									0.49**	1.23
Missing									0.70	1.38
AIC	3263	3163	3243	2329	3239	3151	3207	3100	3187	3085
N	2414	2338	2400	2329	2396	2327	2382	2312	2368	2304

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

Table 4.6. OLS Regressions Predicting Self-Rated Health (5=Excellent, 1=Poor) by Gender: JLPS 2007

	Model 1		Model 2		Model 3		Model 4		Model 5	
	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male
	OR p	OR p	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	Ref	Ref
Currently-Married	0.21***	0.06	0.21***	0.05	0.18*	0.07	0.14*	0.05	0.13†	0.05
Widowed/Divorced	0.00	-0.01	0.00	-0.02	-0.02	0.00	0.01	-0.01	0.00	0.00
Past Health Status	-0.34***	-0.31***	-0.34***	-0.31***	-0.34***	-0.31***	-0.34***	-0.27***	-0.34***	-0.27***
Age	-0.01**	-0.01†	-0.01**	-0.01*	-0.01**	-0.01*	-0.01**	-0.01**	-0.01**	-0.01*
Education										
High school or less	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Vocational, 2-year college	0.15***	0.08*	0.17***	0.08	0.17***	0.07	0.13**	0.04	0.14**	0.03
College or above	0.30***	0.24***	0.31***	0.25***	0.30***	0.24***	0.26***	0.16***	0.26***	0.15**
Coresidence with Parent(s)			0.03	-0.02	0.03	-0.02	0.03	0.03	0.03	0.03
Child under Age 18					0.06	-0.03	0.11	0.03	0.11	0.03
Income per Family Member										
.8 million JP yen or less							Ref	Ref	Ref	Ref
.8-1.4 million JP yen							0.05	0.09	0.06	0.08
1.4-2.2 million JP yen							0.04	0.08	0.05	0.08
More than 2.2 million JP yen							0.09*	0.21***	0.12*	0.20**
Missing							-0.15†	-0.08	-0.15†	-0.07
No Social Support							-0.12**	-0.17***	-0.12**	-0.16***
11+ Cigarettes per Day							-0.19**	-0.19***	-0.20**	-0.18***
Ave. Work Hours per Week										
Out of labor force									Ref	Ref
Unemployed									-0.15†	-0.07
1-35 hours									-0.04	0.42***
36-49 hours									-0.06	0.24*
50-59 hours									-0.10	0.24*
60+ hours									-0.27*	0.14
Missing									-0.15	0.25†
AIC	6116	6154	6116	6130	6069	6128	6014	6055	5976	6013
N	2414	2338	2414	2329	2396	2327	2382	2312	2368	2304

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

CHAPTER 5: MARRIAGE, GENDER, AND MENTAL HELATH

Review on Theory, Research Hypotheses, and Data

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 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).

Another line of research in mental health argues that the gender inequality in the marriage benefit found in early studies was due to an inadequate measurement of mental health status that only captured female-type distress. Researchers argue that women are more likely to express their internal distress though depression, anxiety, and other psychological disorders. Men's distress, on the other hand, is more likely to manifest as substance use abuse and other anti-social behaviors (Rosenfield, Vertefuille, and McAlpine 2000; Simon 2002). Because past research only focused on psychological disorders, researchers have overestimated the mental problems of women and neglected the problems typical of men (Aneshensel et. al. 1991). Studies that use gender-specific mental health outcomes show men and women benefitting equally from marriage (Horwitz, White, and Howell-White, 1996, Simon 2002, Umberson et al. 1996).

This chapter focuses on a mental health measure that captures female-type distress, and examines the relationship between marriage and well-being for men and women in Japan. As outlined in Chapter 1 and Figure 5.1, long work hours are identified as an important mechanism influencing married men and women's well-being. Married men are expected to be exposed to prolonged work hours which are likely to put them at greater risk of distress. Marriage for women, on the other hand, is likely to be associated with reduced work hours which alleviates the pressures and potential distress of combining family and employment.

[Figure 5.1 about here]

Given the contexts surrounding marriage and family in Japan, the following research hypotheses are tested.

H1: Married individuals have better mental health than single individuals

H2: Women are, on average, less likely to have good mental health than men (i.e., an additive effect of being female will be negative.)

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

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

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

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

In addition, because of the traditional gender norms, combining multiple roles would be difficult for women and will impact their mental health negatively. Unlike the contemporary United States, married women with employment are still responsible for the majority of housework and therefore they are likely to experience the "second shift" (Hochschild 1989; Tsuya et al 2012). Role conflict and work overload are likely to take away from the psychological benefit of occupying multiple roles.

H7: Combining marriage and full time employment is associated with lower mental health scores for women.

The first wave of Japanese Life Course Panel Survey conducted in 2007 (n=4,800) is used to examine the effect of marriage on mental health for men and women. For the dependent variable, I use the 5–item mental health inventory, or MHI-5 (Yamazaki, Fukuhara, and Green 2005), to

measure mood and anxiety disorders that are often prevalent among women. This measure will complement self-rated health used in the previous chapter, by focusing on a mental aspect of health and by providing a more objective assessment of mental distress particularly among women. The respondents were asked to indicate how often they experienced the following emotions in the past month: have been a very nervous person; felt calm and peaceful; felt downhearted and blue; have been a happy person; and felt so down that nothing could cheer you up. A sum score ranging from 5 to 30 was transformed to a new scale ranging from 0 to 100. Higher scores indicate good mental health. In a clinical setting, 52 is often used as a cut-off point for depression. As mentioned in Chapter 2, I assume that mental well-being is a concept that is continuous in nature, rather than categorical, and therefore I use OLS regressions to estimate the models.

Following the previous chapter on self-rated health, I first run models with all respondents. Next, I separated the sample into men and women and ran models separately in order to further disentangle the gendered mechanism of marriage and mental health. I then introduced interaction terms between multiple roles to assess whether combining roles has a negative impact especially on women's well-being. In additional analysis, I include self-rated health in order to reduce the effect of marriage selection. I assume that the subjective assessment of one's health is associated with a long-term psychological state of the respondent. By including this measure, I intended to control for respondents' past mental health status prior to marriage.

Results

Descriptive Statistics

Table 5.1 shows the percentage distributions and means of independent variables stratified by good mental health (i.e. MHI-5 score of 52 or higher) and poor mental health (i.e. MHI-5

score of lower than 52, a cut-off point for depression in a clinical setting). The table indicates that never-married individuals and those who co-reside with parent(s) are more likely to be depressed. Those with no social support and who have experienced illness or injury that required a long-term rest, are also likely to be depressed. By comparison, currently-married respondents and those with one or more child are less likely to report lower MHI-5 scores.

[Table 5.1 about here]

Multivariate Statistics

Table 5.2 includes an analysis of both men and women to examine the overall association between marriage and mental health. Throughout all models, marriage is consistently associated with positive mental health. Compared to the never-marrieds, the current marriage increases the MHI-5 score by approximately 4 points. The gender difference is, however, less prominent. Although being female lowers the score by about 1 point, the relationship is only barely significant in the full model without the interaction term (Model 6). Women on average appear to score low in mental health, but the relationship is not strong enough to support the gender-specific outcome of distress (Hypothesis 2). The interaction terms between gender and marriage show that the positive effect of marriage is not significantly different for men and women (in both Models 3 and 7). Contrary to Hypothesis 3, both men and women benefit from marriage, and the magnitude of mental health benefit is similar across gender.

As to the structural mechanisms linking marriage and mental health, household income, social support, and employment status slightly mediate the positive effect of marriage (Models 4 through 6). Earning more than 2.2 million yen per family member, i.e. roughly 28,000 U.S. dollars, significantly increases mental health scores by 3 points, compared to those whose household income per family member is less than 1 million yen (13,000 U.S. dollars). A lack of

social support also influences mental health. Having no one to rely on reduces mental health scores by 3.8 points. Both unemployment and employment are associated with negative mental health scores when compared to being out of labor force (Model 6). Since the effects of income, social support, and work are expected to differ by gender, for the next analyses I divide the sample by gender to explore how mechanisms linking marriage and mental health are different for men and women.

[Table 5.2 about here]

Table 5.3 shows 4 regression models run separately by gender. The positive effect of marriage on well-being is initially stronger for women than for men (5.38 vs. 4.37 in Model1). However, when all the independent variables are included, the magnitude of the marriage benefit does not differ much by gender (3.75 vs. 3.83 in Model 4). The way in which marriage is associated with mental health, however, differs by gender. The most striking gender difference was found in work hours in Model 4. Regardless of the hours worked per week, employment reduces the emotional health benefit of marriage for women by about 25%, but not for men. Employment mediates the positive effect of marriage for women by reducing the positive marriage coefficient from 4.78 to 3.75 (comparing Model 3 to Model 4). The part of the female marriage benefit is that married women are more likely to exit the labor force, which is associated with higher mental health scores. In contrast to women, unemployment and being out of labor force decrease mental health scores for men. Working up to 60 hours per week is strongly associated with better mental health for men. Furthermore, the effect of work hours for men is independent of the association between marriage and mental health. The marriage coefficient barely changes from 3.9 to 3.83 (in Model 3 and Model 4) by including the work hour

variable. Unlike women, men's work and marriage are independent of each other in influencing mental health.

Income and social support only slightly mediate the positive effect of marriage to a similar degree for men and women. The highest household income category is more strongly related to mental health for women than for men (3.77 for women and 2.58 for men in Model 4). Since men are likely to be the family-wage earner, increased income for men may be related to increased pressure and stress, and therefore may not fully contribute to higher mental health score for men. Social support is more strongly related to women's mental well-being. This finding is consistent with the literature that finds that women, regardless of marital status, are more likely to be affected by personal relationships than men in general (Rosenfield, Vertefuille, and McAlpine 2000). In addition, college education, as opposed to high school or less education, is positively related to better mental health. However, the relationship is weaker for men than for women. The coefficient for college education for men in Model 1 (2.21) is reduced significantly when I include household income and work hours (in Models 2 and 4), indicating that education for men is closely related to work and income, both of which are important determinants of mental health.

[Table 5.3 about here]

Table 5.4 shows that the interactions between marriage and employment and between having a child and employment are negative and significant for women. I combined full-time and part-time employment since interaction terms for both types of employment were significant. In order to facilitate the interpretation of significant interaction effects, Figure 5.2 plots the predicted mental health scores by gender, marital status, the presence of a child, and employment

separately for men and women[3]. It shows that marriage increases married women's mental health scores. Combining marriage and employment, however, decreases the mental health score of married women with a child, suggesting the negative psychological consequence of role combination for women. In contrast, men's employment is associated with better mental health regardless of marital status and the presence of a child. Although the 95% confidence interval is wide for married men without employment, the predicted scores suggest that there is no mental health "penalty" in being employed for married men.

[Table 5.4 about here]

[Figure 5.2 about here]

Tables 5.5 and 5.6 add self-rated health to existing models to control for past mental health status. Overall results are in line with the previous findings. Model 1 in Table 5.5 indicates that being female significantly reduces mental health scores by 1.6. As found in previous results, the interaction between gender and marriage in Model 2 does not show any gender difference in the positive effect of marriage on mental health. Results in Table 5.5 suggest that women on average are likely to have low scores in MHI-5, but both men and women benefit equally from marriage. Results in Table 5.6 also support the previous findings in this chapter. Even though self-rated health is strongly related to current mental health scores, the positive effect of marriage still remains for men and women. The relationship is slightly weaker for women and its significance diminishes when work hours are controlled in the final model (Model 4). This emphasizes the previous finding that the mental health benefit of marriage for women is strongly associated with their reduced work hours upon exiting the labor force.

[3] Predicted values are calculated with other covariates – past health status, age, education, employment, co-residence with parent(s), presence of a child, income, and social support – set at means.

[Table 5.5 about here]

[Table 5.6 about here]

Discussion

Empirical analysis on Japanese young men and women, using the Mental Health Inventory 5 (MHI-5), found the following results. First, the marriage benefit hypothesis (e.g. Wood, Goesling, and Avellar 2007) was generally supported in the Japanese data. Currently-married men and women are mentally healthier than single individuals even after controlling for demographic backgrounds and mediating factors. There was no strong gender difference in the magnitude of the association between marriage and mental health, however. Women, on average, showed slightly lower scores in MHI-5, but this additive effect of gender was barely significant and did not influence the positive relationship between marriage and mental health.

As to the structural mechanisms linking marriage and mental health, the data suggested a strong gender difference in how work hours mediate the positive effect of marriage on mental health. For women, the association between marriage and mental well-being was partially explained by the fact that married women are more likely to be out of labor force than men. Furthermore, the positive effect of marriage was attenuated significantly for married women with employment, highlighting the difficulty of combining work and marriage for women. The same mechanism was not found for men. For men, the data did not indicate the detrimental effect of combining marriage, work, and having a child. Furthermore, the marriage benefit for men was unaffected by work hours. Instead, moderate work hours (i.e. less than 60 hours per week) directly increased men's mental health score. Income and social support slightly mediate the positive association between marriage and mental well-being, to a similar degree for men and women.

The gender difference in the mechanism linking marriage and mental health is likely to reflect the gendered spheres of work and family in Japan (Ishii-Kuntz and Maryanski 2003). Traditional gender roles, life-time employment, and strong commitment to a company often shape Japanese men's life to be centered around work. If they are embedded in a Japanese corporate culture, marriage may not be the only source of social support for Japanese men. Companionship and emotional satisfaction may also be derived from work and from being the breadwinner of the family. Unlike women, men may be able to maintain both work life and marriage without sacrificing their mental well-being.

While the marriage benefit hypothesis was largely supported in Japan, claims by Gove and other classical gender-role theorists, however, may need to be reconsidered. Their gender role argument was partially supported in that combining marriage, work, and having a child has a detrimental effect on mental health for women. Furthermore, the data showed that employment, regardless of work hours, is harmful for married women's well-being, indicating a role conflict for married women. Roberts' interviews on married career women in Japan show how little time they have for taking care of their well-being. Although many rely on extended kin for child care, family support is often insufficient and in some cases, family reputation in a community prohibits working mothers from hiring outside help or involving their spouse in housework and childcare (Roberts 2011). Simon (1995)'s study in the U.S. also reveals that working wives not only feel that their employment prevents them from nurturing their children and husbands sufficiently, but that they also evaluate themselves negatively and as inadequate. The current Japanese data suggest that the meaning of combining roles differs by gender and that women are more likely to feel the strain from multiple roles.

Despite the strong role conflict Japanese women experience, marriage itself was found to be associated with better mental health for women. The rigidity of gender and family roles in Japan may put women in a trade-off situation. While giving up the flexibility of combining work, children, and marriage, they may receive a sense of comfort from occupying the role of a wife and a mother. Furthermore, Japanese wives often take on primary responsibilities for family finances and the education of their children (Allison 1991), thus building their identity as a "Good Wife and Wise Mother" (Takeda 2005). While Gove characterized the role of a housewife as less recognized and rewarding, Japanese housewives may not only be protected from role conflict, but also feel a sense of reward and accomplishment within the family.

Theoretically, findings from this chapter contribute to the debate on how gender roles are related to the marriage benefit. Japan offers a case where traditional gender roles still remain rigid, despite the fact that the country has recently experienced various demographic changes for women. More women enter higher education and employment, leading to the postponement of marriage (Tsuya and Mason 1995), yet, attitudes toward gender roles have remained largely traditional (Choe et al. 2012; Retherford, Ogawa, and Matsukura 2001). Given the gap between gender ideology and women's behaviors, gender role theory would predict that women in Japan are severely disadvantaged because of greater role conflict. The results from this chapter show, however, that women on average benefit as much as men from marriage. More detailed analysis further suggests that faced with an adverse environment, women may adapt to traditional gender expectations and change their behaviors (by reducing work) which appear to lead to better mental health. Classical gender role theory may need to incorporate the idea of flexibility and the capacity for women to adapt their identity to achieve their own mental well-being.

Figure 5.1. Conceptual Model for Marriage and 5-Item Mental Health Inventory

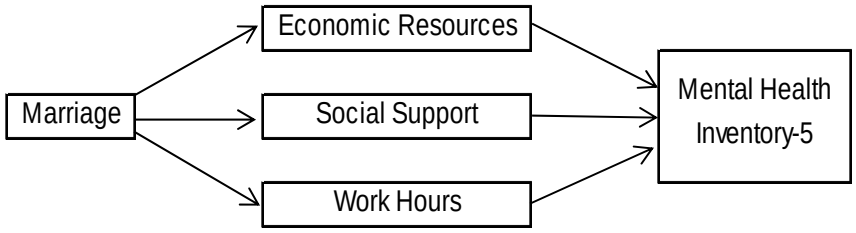


Table 5.1. Percent distributions and means of independent variables, stratified by good vs. poor mental health: JLPS 2007

	Total Sample (N=4698)		Good Mental Health, MHI5>=52 (N=3410)	Depressed, MHI5 <52 (N=1288)
Variable	N	%	%	%
Male	2310	49	50	47
Marital Status				
Never-married	2336	50	48	55
Currently-married	2203	47	49	40
Widowed/Divorced	159	3	3	5
Mean Age (s.d.)	31 (6)		31 (6)	30 (6)
One or More Children	1912	41	42	37
Co-Residence with Parent(s)	2093	45	43	50
Education				
High school or less	1413	30	30	32
Vocational school, 2-year college	1517	32	32	33
College or above	1748	37	38	35
Employment				
Out of labor force	592	13	13	11
Unemployed	235	5	5	6
Employed	3850	82	82	82
Household Income per Family Member				
.8 million JP yen or less	1179	27	26	30
.8-1.4 million JP yen	1133	26	26	26
1.4-2.2 million JP yen	798	18	19	17
Mare than 2.2 million JP yen	1302	30	30	28
No Social Support	1964	42	39	49
Mean Work Hours per Week (s.d.)	36 (23)		36 (23)	37 (24)
Past Experience of Illness or Injury	988	21	19	26

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

Table 5.2. OLS Regression Coefficients Predicting Better Mental Health: JLPS 2007

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7	
	Coef	p	Coef	p	Coef	p	Coef	p	Coef	p	Coef	p	Coef	p
Female	-0.74		-0.71		-0.96		-0.63		-0.69		-0.93	†	-1.11	
Marital Status														
Never-Married	Ref		Ref		Ref		Ref		Ref		Ref		Ref	
Currently-Married	4.54	***	4.88	***	4.72	***	4.51	***	4.34	***	4.15	***	4.09	**
Widowed/Divorced	-1.35		-1.13		-2.32		-1.37		-1.23		-0.93		-3.01	
Past Health	-4.29	***	-4.28	***	-4.27	***	-4.22	***	-4.05	***	-4.02	***	-3.99	***
Age	-0.07		-0.07		-0.07		-0.12	*	-0.11	†	-0.09		-0.09	
Education														
High school or less	Ref		Ref		Ref		Ref		Ref		Ref		Ref	
Vocational school, 2-year college	0.77		0.79		0.79		0.53		0.54		0.57		0.57	
College or above	2.66	***	2.66	***	2.66	***	2.10	**	2.10	**	2.09	**	2.08	**
Coresidence with Own Parent(s)	-0.89		-0.85		-0.83		-0.05		-0.09		-0.04		-0.01	
Child under Age 18			-0.37		-0.39		0.79		0.69		0.48		0.47	
Interactions														
Female * Married					0.40								0.18	
Female * Widowed/Divorced					1.99								3.39	
Hhold Income per Family Member														
.8 million JP yen or less							Ref		Ref		Ref		Ref	
.8-1.4 million JP yen							0.62		0.58		0.48		0.49	
1.4-2.2 million JP yen							1.70	*	1.58	†	1.38		1.41	†
Mare than 2.2 million JP yen							3.12	***	3.04	***	2.96	***	3.01	***
Missing							-1.78		-1.75		-1.85		-1.84	
No Social Support									-3.76	***	-3.79	***	-3.79	***
Employment														
Out of labor force											Ref		Ref	
Unemployed											-4.13	**	-4.13	**
Employed											-1.63	†	-1.63	†
AIC	40097		40047		40051		40031		39865		39679		39682	
N	4656		4650		4650		4650		4636		4615		4615	

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

Table 5.3. OLS Regression Coefficients Predicting Better Mental Health by Gender: JLPS 2007

	Model 1		Model 2		Model 3		Model 4	
	Female	Male	Female	Male	Female	Male	Female	Male
	Coef p	Coef p	Coef p	Coef p	Coef p	Coef p	Coef p	Coef p
Marital Status								
Never-Married	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Currently-Married	5.38 **	4.37 **	4.94 **	4.02 **	4.78 *	3.90 *	3.75 *	3.83 *
Widowed/Divorced	-0.04	-2.61	0.01	-3.45	0.25	-3.36	0.79	-3.13
Past Health Status	-4.16 ***	-4.35 ***	-4.15 ***	-4.25 ***	-4.10 ***	-4.02 ***	-4.14 ***	-3.87 ***
Age	-0.06	-0.08	-0.11	-0.11	-0.10	-0.12	-0.06	-0.10
Education								
High school or less	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Vocational school, 2-year college	1.51 †	-0.22	1.19	-0.46	1.17	-0.40	1.23	-0.34
College or above	3.22 **	2.21 **	2.53 *	1.70 †	2.68 *	1.64 †	2.73 *	1.44
Coresidence with Own Parent(s)	-1.00	-0.70	-0.28	0.18	-0.17	0.04	-0.19	-0.20
Child under Age 18	-0.84	0.15	0.21	1.49	0.35	1.19	-0.30	1.08
Hhld Income per Family Member								
.8 million JP yen or less			Ref	Ref	Ref	Ref	Ref	Ref
.8-1.4 million JP yen			1.37	-0.22	1.36	-0.31	1.48	-0.46
1.4-2.2 million JP yen			1.63	1.71	1.65	1.49	1.54	1.46
Mare than 2.2 million JP yen			3.19 **	3.04 **	3.39 **	2.74 *	3.77 **	2.58 *
Missing			-2.13	-1.48	-1.98	-1.59	-2.00	-1.55
No Social Support					-4.47 ***	-3.07 ***	-4.49 ***	-3.27 ***
Ave. Work Hours per Week								
Out of labor force							Ref	4.14
Unemployed							-3.18 †	Ref
1-35 hours							-2.05 †	6.40 **
36-49 hours							-2.30 *	6.68 **
50-59 hours							-2.45	6.22 **
60+ hours							-9.17 ***	1.39
Missing							-4.58 *	3.90
AIC	20404	19654	20400	19648	20321	19563	20198	19463
N	2361	2289	2361	2289	2356	2280	2343	2272

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

Table 5.4. OLS regression coefficients predicting better mental health by gender with effects of multiple roles: JLPS 2007

	Model 1		Model 2		Model 3	
	Female	Male	Female	Male	Female	Male
	Coef p	Coef p	Coef p	Coef p	Coef p	Coef p
Marital Status						
Currently-Single	Ref	Ref	Ref	Ref	Ref	Ref
Currently-Married	4.27 **	4.35 **	9.22 ***	-1.55	4.39 **	4.34 **
Past Health	-4.14 ***	-3.92 ***	-3.97 ***	-3.89 ***	-4.02 ***	-3.90 ***
Age	-0.07	-0.14 †	-0.07	-0.14 †	-0.06	-0.14 †
Education						
High school or less	Ref	Ref	Ref	Ref	Ref	Ref
Vocational school, 2-year college	1.13	-0.35	1.05	-0.36	1.08	-0.34
College or above	2.62 *	1.84 *	2.62 *	1.79 *	2.60 *	1.81 *
Employment						
Unemployment/Out of labor force	Ref	Ref	Ref	Ref	Ref	Ref
Employed	-1.73 †	3.20 *	2.43	2.78 †	1.04	2.76 †
Coresidence with Own Parent(s)	-0.11	0.04	0.00	0.05	-0.07	0.04
Child under Age 18	0.12	0.52	-0.18	0.50	3.26 †	-6.37
Currently-Married * Employed			-5.79 **	6.04		
Child * Employed					-4.29 *	7.04
HhId Income per Family Member						
Less than 1 million JP yen	Ref	Ref	Ref	Ref	Ref	Ref
1-1.7 million JP yen	1.47	-0.64	1.34	-0.65	1.39	-0.64
1.7-2.5 million JP yen	1.65	1.10	1.47	1.11	1.63	1.12
Mare than 2.5K million JP yen	3.56 **	2.13 †	3.48 **	2.13 †	3.50 **	2.15 †
Missing	-1.80	-1.73	-1.66	-1.57	-1.66	-1.64
No Social Support	-4.50 ***	-3.04 ***	-4.54 ***	-3.04 ***	-4.50 ***	-3.02 ***
AIC	20317	19559	20321	19570	20324	19570
N	2356	2280	2356	2280	2356	2280

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

Figure 5.2. Predicted Mental Health Scores and 95% CI by Gender, Marital Status, Child, and Employment: JLPS 2007

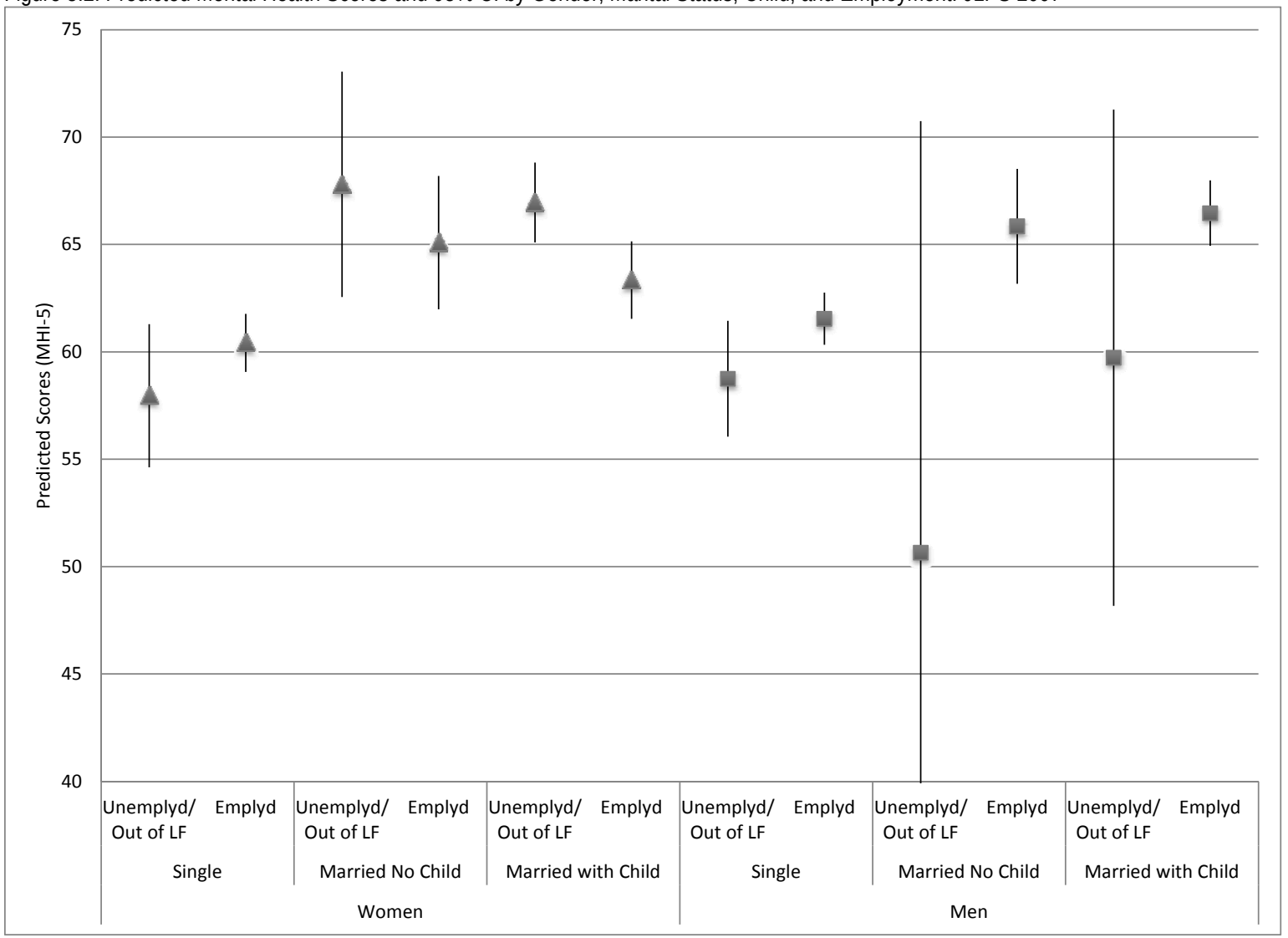


Table 5.5. OLS regression coefficients predicting better mental health: Additional analysis with self-rated health (JLPS 2007)

	Model 1		Model 2	
	Coef	p	Coef	p
Female	-1.60	**	-1.08	
Marital Status				
Never-Married	Ref		Ref	
Currently-Married	3.21	**	3.86	**
Widowed/Divorced	-0.83		-2.71	
Past Health Status	-1.62	**	-1.58	**
Self-Rated Health	7.59	***	7.61	***
Age	0.00		0.00	
Education				
High school or less	Ref		Ref	
Vocational school, 2-year college	-0.28		-0.30	
College or above	0.28		0.21	
Coresidence with Own Parent(s)	-0.25		-0.28	
Child under Age 18	0.13		0.11	
Interactions				
Female * Married			-1.45	
Female * Widowed/Divorced			2.83	
Household Income per Family Member				
.8 million JP yen or less	Ref		Ref	
.8-1.4 million JP yen	-0.03		0.01	
1.4-2.2 million JP yen	1.02		1.07	
More than 2.2 million JP yen	1.90	*	1.98	**
Missing	-0.79		-0.74	
No Social Support	-2.84	***	-2.84	***
Employment				
Out of Labor Force	Ref		Ref	
Unemployed	-4.49	**	-4.67	***
Employed	-2.23	**	-2.64	**
AIC	38916		38917	
N	4606		4606	

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

Table 5.6. OLS Regressions Predicting Better Mental Health by Gender: Additional Analysis with SRH (JLPS 2007)

	Model 1		Model 2		Model 3		Model 4	
	Female	Male	Female	Male	Female	Male	Female	Male
	Coef p	Coef p	Coef p	Coef p	Coef p	Coef p	Coef p	Coef p
Marital Status								
Never-Married	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Currently-Married	3.68 *	3.73 **	3.33 *	3.49 *	3.21 *	3.41 *	2.20	3.33 *
Widowed/Divorced	-0.03	-2.64	-0.03	-3.20	0.18	-3.14	0.66	-2.97
Past Health Status	-1.32	-2.01 *	-1.34	-1.99 *	-1.36	-1.88 *	-1.42	-1.85 *
Self-Rated Health	8.09 ***	7.54 ***	8.03 ***	7.49 ***	7.88 ***	7.39 ***	7.82 ***	7.25 ***
Age	0.01	0.00	-0.02	-0.02	-0.01	-0.02	0.02	-0.02
Education								
High school or less	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Vocational school, 2-year college	0.16	-0.74	-0.06	-0.87	-0.05	-0.81	-0.02	-0.77
College or above	0.76	0.44	0.25	0.14	0.44	0.14	0.47	0.04
Coresidence with Own Parent(s)	-1.23	-0.58	-0.67	-0.13	-0.59	-0.23	-0.52	-0.42
Child under Age 18	-1.11	0.40	-0.25	1.29	-0.14	1.08	-0.79	1.04
Hhld Income per Family Member								
.8 million JP yen or less			Ref	Ref	Ref	Ref	Ref	Ref
.8-1.4 million JP yen			0.88	-1.00	0.89	-1.07	1.04	-1.14
1.4-2.2 million JP yen			1.25	1.03	1.26	0.88	1.19	0.89
More than 2.2 million JP yen			2.47 *	1.36	2.64 *	1.16	3.03 **	1.08
Missing			-0.92	-0.74	-0.75	-0.81	-0.67	-0.86
No Social Support					-3.68 ***	-1.93 **	-3.70 ***	-2.18 **
Ave. Work Hours per Week								
Out of labor force							Ref	4.87 *
Unemployed							-4.18 *	Ref
1-35 hours							-2.86 **	3.57 †
36-49 hours							-2.94 **	5.21 **
50-59 hours							-2.76 †	4.74 *
60+ hours							-8.17 ***	0.76
Missing							-4.83 *	2.43
AIC	19999	19257	20400	19258	19931	19183	19814	19097
N	2356	2285	2356	2285	2351	2276	2338	2268

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

CHAPTER 6: MARRIAGE, GENDER, AND SOBRIETY

Review on Theory, research hypotheses, and Data

Research in gender mental health has pointed out that men and women express their distress differently (Aneshensel et al. 1991, 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 chapter 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 Japanese Life Course Panel Survey (2007) which sampled 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. As mentioned in Chapter 3, I dichotomize the frequency of drinking where those who drink less than 5 times a week are coded as 1; and those who drink 5 or more times a week are coded as 0. I consider those who drink less than 5 times a week as sober. The frequent drinkers comprise about 16 percent of the total sample.

As outlined in Chapter 1, I argue that marriage is related to better psychological health, i.e. sobriety. Women benefit more from marriage because they reduce their work hours upon marriage and receive a protective effect of marriage. At the same time, however, women who combine different roles are more likely to be stressed and increase their frequency of alcohol consumption. 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.

[Figure 6.1]

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.

Results

Descriptive Statistics

Table 6.1 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 6.1 about here]

Multivariate Statistics

Table 6.2 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[4]. Throughout the models, divorced or widowed respondents are about 60%

[4] 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).

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 6.2 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.

Additionally, in line with Hypothesis 2, Table 6.2 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 6.2 about here]

[Figure 6.2 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 6.3. As indicated by the interaction term in Table 6.2, Models 1 through 3 in Table 6.3 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)[5]. I speculate that college education may be associated with increased knowledge about alcohol and health, which may deter drinking.

[Table 6.3 about here]

Table 6.4 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 6.3 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

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

and whether the respondents are never-married or currently-married.

[Table 6.4 about here]

[Figure 6.3 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. This result provides a sharp contrast to the finding from the previous chapter where mental health inventory-5 was used to assess female-type distress. When MHI-5 was used to measure the degree of distress, married women with a child showed significantly low mental health scores than married women without employment. Women's propensity to express their distress through anxiety and depression may explain this non-significant effect of role combinations (Simon 2002). The evidence of role conflict for men in this chapter 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.

Figure 6.1. Conceptual Model for Marriage and Sobriety

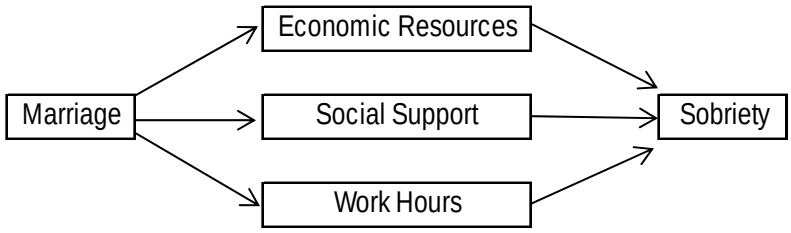


Table 6.1. Percent distributions and means of independent variables, stratified by sobriety vs. frequent drinking: JLPS 2007

	Total Sample (N=4698)		Sober, drink less than 5 times a week (N=4029)	Drink frequently, 5+ a week (N=751)
Variable	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 6.2. 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 6.2. Predicted Probabilities and 95% CI of Sobriety by Gender and Marital Status: JLPS 2007

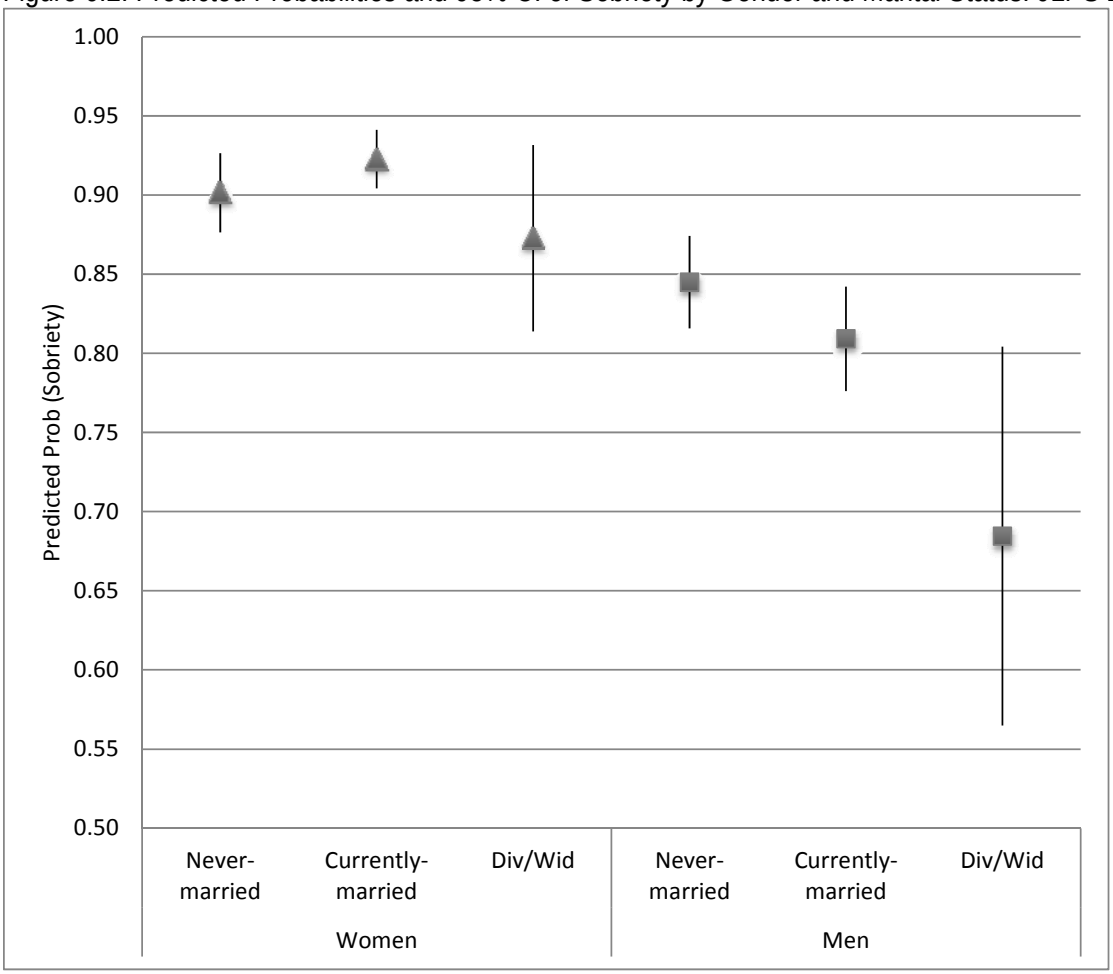


Table 6.3. Logistic regression odds ratios predicting sobriety (1=drink less than 5 days/wk, 0=drink 5+ days/wk) by gender: JLPS 2007: JLPS 2007

	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

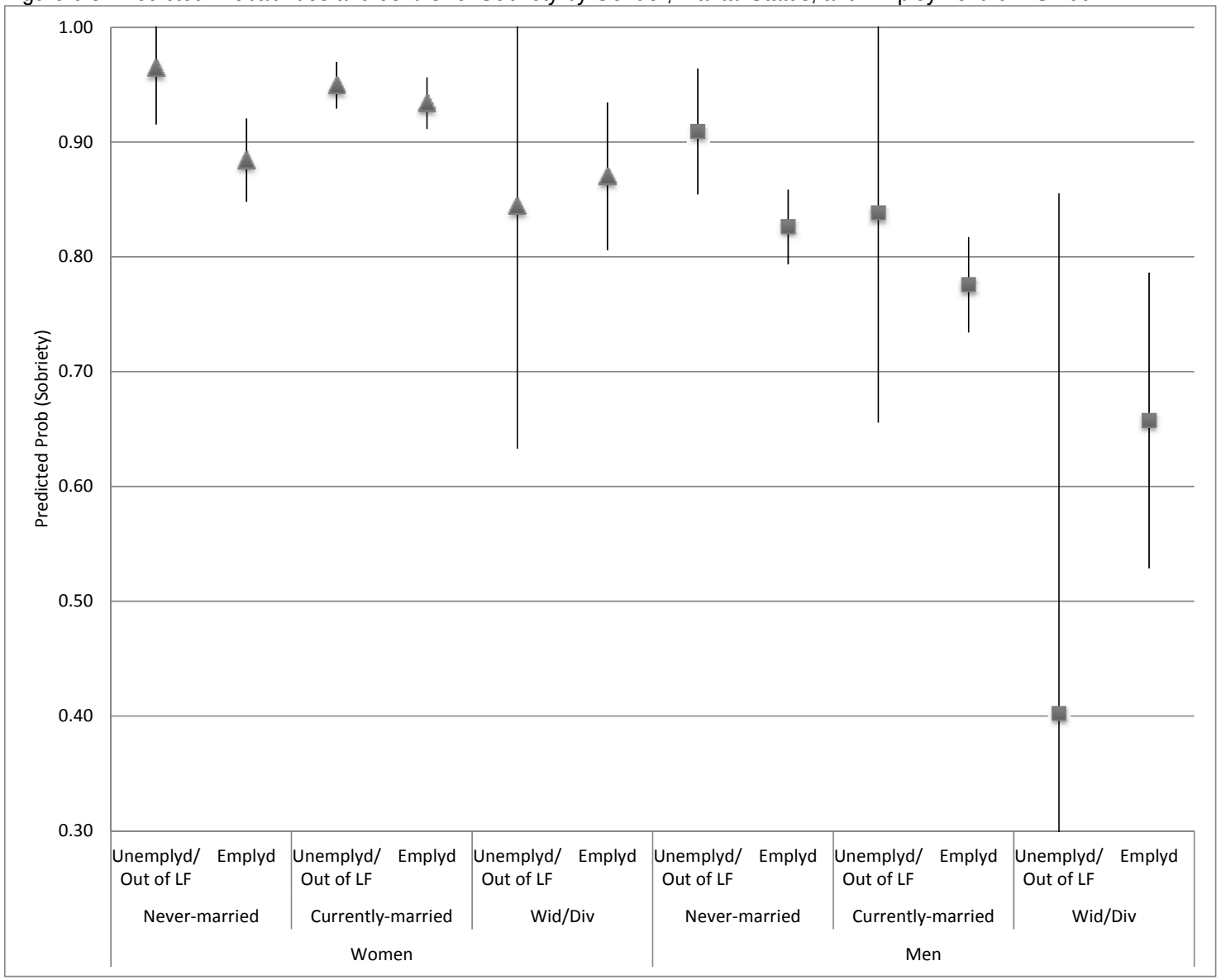
† p<.1, * p<.05, ** p<.01, *** p<.001 (two-tailed test)

Table 6.4. 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 6.3. Predicted Probabilities and 95% CI of Sobriety by Gender, Marital Status, and Employment: JLPS 2007



CHAPTER 7: CONCLUSIONS

One of the most robust findings in health literature is the association between marital status and health (Ross, Mirowsky and Goldsteen 1990). A growing body of research has shown that being married, relative to being single, has a positive and direct impact on various health outcomes even after controlling for the selectivity into marriage (Wood, Goesling, and Avellar 2007; Wilson and Oswald 2005). Three structural mechanisms are identified to explain the link between marriage and better health, i.e., increased economic resources, social integration and support, and the regulation of health behaviors through spouse (Waite and Gallagher 2000; Waite and Lehrer 2003).

The debate remains, however, as to the gendered effect of marriage on health (Carr and Springer 2010). Classical gender-role theorists argued that women benefit lees from marriage because their work and family roles are often in conflict (Bernard 1972; Gove 1972). Recent examination of this claim, however, finds that having multiple roles can be beneficial to both sexes, by providing greater self-esteem, prestige, wealth and social support (Barnett and Hyde 2001). Another line of research also suggests that both men and women benefit from marriage but through different aspects: men gain better health status through social support and regulation of health behaviors while women improve their health through increased economic resources (Waite and Gallagher 2000).

While each line of research is informative in understanding the gendered effects of marriage on health, previous research is limited since few studies consider both structural mechanisms and gender roles through which men and women's health is affected by marriage. Furthermore, studies typically focus on one type of mental distress without distinguishing gendered processes that result in gender-specific mental disorders (Simon 2002). Using Japan as

a case study, this dissertation examines both gendered structures and role experience of marriage, while paying attention to gender-sensitive measures of mental health in addition to general health status.

Japan provides a case where traditional gender and family relations still persist, despite socio-demographic similarities to the U.S. Japan provides a ground to test the generalizability of classical gender-role theory and mechanisms of marriage benefit found in the U.S. I argue that work hours is another mechanism that separates married men and women's everyday lives in Japan with important health implications. The strong gendered division of labor is likely to force married men to work long hours outside the home, preventing them from receiving the protective effects of marriage. On the other hand, married women, on average, may not feel the strain of combining marriage and work because a large majority of women choose to terminate their career upon marriage. In other words, contrary to classical gender-role theory, the average married woman in Japan may not be disadvantaged despite strong gender norms.

Data used for this dissertation come from nationally representative household samples of adults aged from 20 to 40 years in the Japanese Life Course Panel Survey (JLPS). I use the first wave of JLPS conducted in 2007 by the University of Tokyo (n=4,800). The following three dependent variables are used to assess the mental and physical health. For general health conditions, I use Self Rated Health (SRH) that asks respondents to evaluate their health status. For female-type psychological distress, I use a 5-item Mental Health Inventory (MHI-5) developed for diagnosing depression and anxiety disorders. For male-type mental distress, I use the frequency of drinking where "drinking everyday" is coded as an indicator of mental distress.

The first empirical chapter which uses self-rated health as a dependent variable finds that the health benefit of marriage is greater for women than for men. The separate analyses for men

and women further indicates gender differences in how marriage affects general health in Japan. For men, marital status is found to be largely independent of men's self-rated health. More specifically, married men's health advantage is weak and disappears when unemployment and work hours are controlled. Furthermore, the positive effect of marriage is not mediated by some of the important structural mechanisms such as social support and smoking. These factors were identified in explaining the marriage benefit for American men. In contrast, married women's health advantage is strong and partly mediated by income, social support, health behaviors, and employment. Although women's marriage benefit is partially explained by structural mechanisms, the net impact of marriage remains strong after structural factors are controlled. This finding contradicts earlier literature that claimed the negative health influence of marriage for American women. At the same time, however, the joint effect of marriage and full-time employment was found to be detrimental to women's health in Japan. This finding suggests that Japanese married women are experiencing a role conflict.

The second chapter which uses the 5-item Mental Health Inventory finds that both men and women benefit equally from marriage. The mechanism that links marriage and health is, however, different for men and women. A mental health advantage for women is most strongly mediated by the fact that married women are more likely to be a full-time housewife and less likely to be affected by the harmful effect of employment. In contrast, married men's mental health advantage is mediated by the fact that married men are less likely to be unemployed or out of the labor force than non-married men. For men, work is positively associated with mental well-being. This chapter also finds that combining marriage and employment, as well as combining childrearing and employment, significantly reduce mental well-being for women but

not for men. Despite the seemingly equal benefits in mental health for men and women, the mechanisms and the effect of role combinations are quite gendered.

The third empirical chapter which uses sobriety as a dependent variable 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: although married men are more likely to drink, married women are slightly less likely to drink than their never-married counterparts. 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) increases 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.

This dissertation generally suggests that classical gender-role theories may have over-emphasized the negative aspect of marriage for women's health. While combining marriage and work does worsen women's health, marriage itself was found to be associated with better health for women. In a society where most women are expected to terminate their career upon marriage and childbearing, being a housewife may protect women from stressful work environments and provide for a self-identity that supports their mental health. Classical gender theories may need to incorporate the idea that women can be flexible in the face of rigid gender norms and may re-

structure their lives in order to meet gender expectations. By doing so, women may trade in their work-family balance for better health. The second empirical chapter on mental health, in particular, illustrated this complex relationship. Although the mental health benefit of marriage was similar in magnitude for men and women, it was revealed that structural mechanisms and role meanings are quite different by gender.

Furthermore, American literature on marriage and health may have over-emphasized the exclusive nature of marriage in influencing health-related factors, especially for men. Japanese men's lives tend to be embedded in work which provides social support and an influence on health behaviors. The first empirical chapter on self-rated health highlighted the relatively separate spheres of men and women's lives in which marriage for men did not impact their health nor structural mechanisms that supposedly mediate the positive effect of marriage on health. Instead of treating marriage as a powerful social construct that independently alters health-related behaviors, future studies may need to explore the conditions under which marriage influences health for men and women. The effect of marriage on health is likely to depend upon cultural contexts and upon how men and women are embedded in other important social relationships.

Research on the gendered outcomes of mental distress may also need to take into account the cultural contingency of male- and female- types of distress. The last empirical chapter on drinking did shed some light on how men's strong identification with work may affect their frequent drinking. Again, more attention to different gender, family, and work experience is needed in choosing the appropriate measure.

Marriage in Japan

The results from this dissertation provide an implicit comparison of marriage in Japan and

the United States. The first notable contrast can be found in Chapter 4 (Table 4.3 in particular), in which the results show positive associations among marriage, childrearing, a lack of employment, and health for Japanese women. This marriage benefit for full-time house wives becomes even larger when compared to never-married women residing with their parent(s). These findings appear to indicate Japanese women's positive orientation toward the traditional marriage where a full-time house wife and motherhood are linked together as a lifetime commitment. The positive orientation toward such traditional gender norms may be due to the difficulty of combining marriage and employment, and the negative image of singlehood for Japanese women. This is in sharp contrast to theoretical expectations derived from literature in the U.S. where divorce and cohabitation are more common and the health benefit of cohabitation is almost similar to the health benefit of marriage (Musick and Bumpass 2012).

Another difference is found in relatively independent lives of Japanese wives and husbands, where Japanese husbands' health is less affected by marriage and family and more influenced by work. This finding suggests that unlike the United States, Japanese marriage may not be centered on romantic partnership where a spouse influences each other's emotional, behavioral, and medical support. The findings from the international attitude survey on family (Cabinet Office 2011) further support this cultural difference. The survey finds that when asked about a happy marriage, American respondents were more likely to list loyalty and sexual attractiveness to each other as important components of happy marriage, whereas Japanese respondents were more likely than Americans to list income and childrearing as important factors for a happy marriage. Compared to American marriage, aspects of Japanese marriage may be influenced by the gendered division of labor that emphasizes economic stability (for men) and childrearing (for women).

Limitations

The limitations of this study provide opportunities for future studies. The cross-sectional design of the current dataset, JLPS, makes it difficult to completely rule out the possibility that individuals with better physical and mental health are more likely to enter into and stay in marriage. Although this study controls for past health status, the results are likely to overestimate the effects of marriage on health. Data which include health status prior to marriage in a panel design would be better suited to examine the causality of marriage on health.

For analysis on self-rated health, future studies need to explore the mechanism that explains the marriage benefit experienced by Japanese women and why childrearing is linked to women's better health. The positive effect of marriage and childrearing did not disappear completely even after controlling for various demographic and behavioral factors. It is important to specify what aspect of marriage and motherhood provides better self-rated health for women. One possibility is to investigate the role of diet in one's health. For example, Kobayashi (2011)'s study on lifestyle and health among Japanese individuals finds that married individuals are more likely to consume vegetables and sea vegetables, which are positively associated with satisfaction with health. Being a wife and/or mother may improve women's diet by taking responsibility for nurturing other family members.

Regarding the relationship between marriage and mental health, the negative effect of multiple roles for women remained strong even after controlling for demographic background and the structural mechanisms of the marriage benefit. Investigating the process that links women's multiple roles to their diminished mental well-being would bring a valuable insight to the difficulty Japanese married women face in balancing their family and work.

For the analysis on drinking, a better measurement needs to be constructed to capture the

male-type expression of distress in Japan. Since frequency of drinking is highly correlated with employment, the total amount of alcohol intake, net of frequency, may provide a better measure of the level of distress men experience. Detailed information on men's workplace environment, especially the contexts surrounding drinking would also help us understand the meaning of drinking in Japan.

Lastly, in relation to health, this study could not explore the positive effect of college education on health. Higher education was consistently associated with better health status for all three dependent variables, net of employment, income, and work hours. Individuals with a higher educational level, for example, may be better equipped with the skills and knowledge about healthy life styles (such as diet and exercise) as well as methods for how to better cope with stress. More information is needed to assess the relationship between educational level and health status, and to examine if education does affect the relationship between marriage and health for men and women differently.

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