The Relationship between Mental Health and Marital Dissolution:

Previous Depression and Later Divorce

Abstract:

Among the arguments about the relationship between marital status and psychological well-being, numerous studies have established the social causation explanation, but few studies have examined the social selection effect of mental health on marital dissolution. Using data from the National Longitudinal Survey of Youth 79 (NLSY79), this study uses survival models to examine the relationship between depression as an early adult and subsequent divorce. In addition, this study examines the effect of marital quality on marital dissolution for females. Individuals who have a history of depression have significantly higher risk of divorce over the course of their marriage, after adjusting for other predictors. Furthermore, even after adjusting for marital quality, depression still has a significant effect on the risk of divorce, suggesting that prior mental health may be a substantive precursor of negative events over the life course.

Introduction

> *Depression is an insidious vacuum that crawls into your brain and pushes your mind out of the way. It is the complete absence of rational thought. It is freezing cold, with a dangerous, horrifying, terrifying fog wafting throughout whatever is left of your mind.*
>
> *Unemployed female administrator, age 27 (Karp, 1996:22)*

Recent years have seen a growing volume of research on the influence of marital status on psychological well-being (Booth & Amato, 1991; Frech & Williams, 2007; Horwitz & White 1991; Kim & McKenry, 2002; Krisker & Goldman1987; Lamb et al, 2003; Simon, 2002; Williams 2003). Most of this research supports findings based on social causation explanations, and provides evidence such as the strongly positive effect of marriage on mental health either directly or by the moderating by circumstances for both men and women (Williams, 2003; Simon 2002). A few studies raise objections to these dominant studies' reliance on social causation, and show some evidence of a selection effect of mental health on entry into marriage or marital dissolution, asserting that there is a selective bias of entry into marriage (Mastekaasa, 1992), and the benefits of marriage are different among individuals based on prior mental health history (McLeod & Eckberg, 1993). Furthermore, prior psychiatric disorders are substantially related to higher risk of divorce (Kessler et al., 1998). In contrast to the large body of literatures on social causation, explanations of marriage and mental health, there are few attempts to give empirical support to arguments about the impact

of mental health on marital dissolution, even though the importance of this research has been emphasized over the decades.

Previous research has had inevitable limitations for exploring social selection effects, due to data collection and limited statistical approaches. In addition, to date, no previous research has examined prior depression effects on the risk of divorce over the life course using valid data. Therefore, this study addresses two purposes: 1) to show empirical evidence that people with mental health problems are more vulnerable in their attempts to maintain a stable marriage and receive the benefits of marriage, so that they are more at risk for divorce. 2) to find out the mechanisms, if any, of how the circumstances of mental health effect divorce over their married lives. Therefore, this study investigates these issues by using the National Longitudinal Survey Youth 79(NLSY79), and explores the relationship between history of depression as an early adult and the timing of marital disruption over the life course.

Marriage and Psychological Well-being

Social causation

Social causation theory argues that marital status is a determinant of mental health. According to this theory, marriage improves psychological well-being either directly or by moderating negative life events and circumstances (Lamb et al., 2003). Though people may

have a history of depression prior to marrying, they may obtain larger psychological gains from marriage than those who have no history of depression through the benefits of marriage (Frech & Willams, 2007). In general, there are two substantial benefits of marriage. One is greater financial and economic resources, and stability. The other is through a higher level of social support via extended family structure and greater social networks. These benefits effectively reduce married individuals' exposure to various stressors and assist them in dealing with harmful situations to their mental health (Booth & Amato 1991; Horwitz & White 1991; Kim & McKenry, 2002; Krisker & Goldman, 1987; Lamb et al, 2003; Simon, 2002; Williams, 2003).

Social Selection: Social Psychological Linkage of Mental Health to Marital Status

On the other hand, social selection theory asserts that individual's mental health influences entry into marriage and marital stability. This theory explains two different sequential risks of mental health on marriage over the life course. The first one acts before entering marriage. People with better psychological well-being are more likely to get married than people who have poor mental health (Horwitz et al., 1996). There is some evidence for selection effects that people with observably poor health and those with dangerous or unhealthy lifestyles, such as substance abuse and criminal activities, may find it more difficult

to attract a spouse than do healthy people (Kisker & Goldman, 1987; Lillard & Panis, 1996). Power et al., (2002) asserts that some mental conditions, such as schizophrenia and conduct disorder, have stronger selection effects than other mental conditions varying by stage of life. In terms of *attraction*, it is quite likely that happy and cheerful people are more likely to look healthier and are regarded as a more attractive partner than the depressed (Mastekaasa, 1992), and emotional stability is highly valued by both men and women (Buss & Barnes, 1986).

Moreover, the second selection effect explains that among married individuals, if people have a history of mental disorders, they are more likely to experience marital dissolution, such as separation or divorce. People who have more health complaints or chronic conditions are also more likely to get divorced than people without health problems (Jung et al., 1998) because compared to unhealthy people, healthier people have a lower probability of experiencing negative life events, such as dropping out of school or unemployment. Thus they are more likely to reduce the hazard of marital dissolution and remain married longer (Kessler, 1997). Psychological status may have an impact on social position, not only through attainment of education and getting a job but also through its effect on social skills and relationships (Power et al., 2002).

In terms of *labeling and stigma*, people who have a history of mental health problems and the experience of treatment may believe that they will be devalued and discriminated

against. When stigmatized individuals realize that negative labels have been applied to them and other people are more like to consider them dangerous or less trustworthy, insidious and internalized forms of stigma occur. The results cause strained and uncomfortable social interactions, more constrained networks, and low self-esteem and even worse depressive symptoms (Link et al, 1989 & 1999; Link & Phelan, 2006).

In terms of *social interaction and role conflict between a couple,* mental health problems may influence the quality of marriage because of various aspects such as personality, intellectual capabilities (cognitive flexibility and effective problem solving), and interpersonal skills (social confidence and communication ability). The depressed experience more difficulty in interpersonal relationships (Coyne et al, 1987), express more negative feelings (Hinchliffe et al., 1975 & Hinchliffe et al., 1997), have more tensions and anxieties in problem solving discussions, and display more negative communication skills (Rucher & Gotlib, 1988). Furthermore, couples with a depressed wife demonstrated less positive communication than couples with a depressed husband, indicting gender differences in affective expression (Johnson & Jacob, 1997). Also, compared to men, women's' mental health is more likely to have relationship reliance on their spouse (Moffit et al, 1986). In addition, a depressed spouse may require more caring and support but offers little support in return (Turner & Turner, 1999). McLeod and Ecber (1993) have demonstrated that higher

levels of depression have a negative effect on marital quality for both spouses. In sum, compared to the social causation theory, social selection theory highlights the effect of individuals' predisposed psychological characteristics which are associated with the likelihood of both entry into marriage and stable marital status.

Limitations of Previous Research

Several researchers have emphasized that both causation and selection effect are likely to be associated in the relationship between marital status and mental health (Avison, 1999; Horwitz et al., 1996; Umberson & Williams, 1999). However, there is a differential in the amount of evidence for each position. Most researchers have illuminated evidence of the causal mechanism but there is little empirical research about selective effects. There may be several reasons about this deficiency in evidence for social selection effects. First of all, most available research on marital status and mental health relies on cross-sectional data, which are unable to determine whether prior mental health predicts the consequent marital dissolution. Second, limited statistical approaches inhibit the ability to regard marital dissolution as a risky event over the life course, because as with the study of mental health, the timing of onset in mental disorder in relation to the timing of marital disruption is important. Third, previous research about social selection effects has failed to adequately control for confounding

variables and it undermines the explanations for how mental health impacts marital dissolution through other mediators or moderators, which reveal how social selection effect occurs over the marital period.

It is important to find empirical evidence that people with mental health problems are vulnerable in maintaining stable marital status and receiving the advantages of marriage. In addition, it is significant to understand the circumstances under which people who have mental health problems experience higher risk of marital dissolution. Furthermore, it could be meaningful to apply these findings to help increase these individuals' resilience against negative life events over the life course.

Figure 1 will be placed here

Extending Previous Research

Based on theoretical background and previous research, this study develops a set of hypotheses that directly and indirectly address the ways mental health problems affect marital dissolution.

Figure 1 shows a theoretical model of the social selection effects of mental health on marital dissolution via social psychological factors. However, due to data limitations, the

present study tries to explore a pathway, and focuses on the main effect of depression and explores the role of marital quality for women. Because several prior researchers have pointed out the possibility of selection effects, the present study tests the following hypotheses. *Hypothesis 1. People who reporteda history of depression are more likely to get divorced than those who reported no depression.* A higher quality of marriage and lower role conflicts between husband and wife increase psychological well-being and reduce the probability of onset or recurrence of depression (Horwitz et al., 1997; McLeod & Eckberg, 1993) while lower level of marital quality and higher stress from marriage increases stress on married individuals more than for continually unmarried individuals (Williams, 2003). Therefore, I predict *Hypothesis 2. People who report high quality of marriage are less likely to get divorced.* If the second hypothesis is supported, we can say that marital quality moderates the association of marital transition into divorce through psychological well-being. But the effect acts differently for people with and without a history of depression. People who have depression may more negatively communicate with their spouse and may not only crave more caring for emotional neediness but also may be less likely to give emotional support to their spouses. Continuous imbalance in marital roles may decrease marital quality for both spouses and increase the risk of divorce. Moderating effects of marital quality on the risk of divorce will vary by history of depression. Therefore, I assume *Hypothesis 3. The impacts of quality of*

marriage on divorce depend on the history of depression. This hypothesis will test the way quality of marriage differentially moderates divorce, under a precursor, depression.

Method

Data

To examine the hypotheses discussed above, this study uses the National Longitudinal Survey Youth 1979 (NLSY79) published by the U.S Department of Labor. The NLSY79 is an ongoing longitudinal study of a nationally representative sample of 12,686 youth or young adults between 14 and 22 years of age in 1979. The individuals were interviewed annually through 1994 and are currently interviewed biannually. Even though the main focus of the survey is labor force behavior, the content of the survey is substantially broader. There are several advantages to this data. One is that this survey includes detailed questions about family background, marital history, education attainment, income, health conditions, and marital quality. Another key advantage of this survey is that it gathers information in a survival analysis format, in which dates are collected from the beginning and end of important life events (Bureau of Labor Statistics, 2004). As of the present study, 21 follow-up surveys have been conducted. Like any other longitudinal study, the NLSY79 has suffered from attrition and non-response, but remains one of the few representative

longitudinal surveys.

Several strategies are used in this study. First, out of all these surveys, in order to find selection effects of divorce due to mental health, the present study uses NLSY79 surveys from 1992 to 2004 because a scale (CES-D) measuring mental health was completed in its full form in the 1992 survey. However, to maximize information about all time fixed and varying variables, such as childhood family background, life course events, and social economic status, this study tries to use all possible non-missing information from the 1979 survey. After deleting any cases with missing data, my data set ends up consisting of 6,589 cases for men and women with all information in every follow-up from 1992 to 2004. Unfortunately, questions about marital quality were only surveyed for women. Therefore, in order to test the moderating effect of marital quality on divorce, the sample is restricted to married women, and the sample size is 3,071.

Key Variables

Marital dissolution. Respondents reported if they had divorced, separated, or lost a spouse through death since the last interview. Respondents also reported the year and month in which marital dissolutions occurred. In this study, a formal disruption of marriage, that is divorce, is considered an event of marital dissolution. Even though 'separated' is commonly a

step towards divorce, the separation period was not counted as marital dissolution until a formal divorce occurred. The widowed were also excluded in this analysis because the death of a spouse is so uncommon for this study cohort.

Mental Health. Mental health is measured using a full item version of the Center of Epidemiological Studies' Scale of Depression (CES-D) (Radloff, 1977). This scale includes well-reported properties of depression and is widely accepted in the mental health literature. Depression is a good indicator of poor mental health and psychological well-being because of its correlation with other mental health problems (Ross & Mirowsky, 1995; Frech & Williams, 2007) and researchers using CES-D have reported its reliability in predicting diagnostic depression (Beeber et al., 1998; Koropeckyj-Cox, 1998). In this study, CES-D consists of 20 items, each of which range from 0 to 3 with bigger numbers meaning more symptoms measured by the number of days in the last week a respondent experienced a symptom of depression. In the 1992 interview response, the scale had an alpha reliability of .884 In this study, depression variables are summed up in all 20 items following the same direction which is ranged from 0 to 60. Using clinical cutoff points (American Psychiatric Association, 2000), the depression scale in this study is dichotomized: non-depression (< 16) and depression (>= 16).

Marital Quality. Measures of positive conversation and negative conversation are

used to evaluate marital quality. Positive conversation is measured by three items assessing a respondent's marital happiness with his or her spouse, including frequencies of calm discussion, laughing together, and telling each other about their day, ranging from 1 (less than once a month) to 4 (almost every day) . These questions have a moderate positive relationship with overall marital happiness (r=.04~.05). The scale of positive conversation has an alpha reliability of .77. Negative conversation is measured through the frequencies (1=never and 4=often) of arguments that a woman argued against chores, children, money, religion, leisure time, drinking, other women, or husbands' relatives with her spouse. The scale of negative conversation had an alpha reliability of .78.

Control Variables

There are numerous variables associated with the risk of divorce. This study needs to control these variables to estimate an accurate relationship between depression and divorce. Control variables are divided into three conceptual groups: childhood family background, life course events, and socioeconomic status. *Childhood family background* includes parent's educational background- the highest year of schooling for either father or mother, residential area at age 14, and family structure at age 14- two parents vs. single parents or other types of arrangements (Amato, 1996; Amato & Booth, 1991; Chase-Lansdale et al., 1995; Thornton

& Freedman, 1982; Wolfinger, 2003). *Socioeconomic status* contains the highest grade completed, and annual family income (Conger et al., 1990; Jalovaara, 2003*). Life course events* comprise teenage marriage (Amato, 1996; McLeod, 1991, Bramlett et al., 2001), cohabitation experience (Amato et al., 1991; Amato, 1996, Hall & Zaho, 1995), and presence of any children at home (South, 2001).

Previous research suggests that the role of prior depression may differ for men and women, in that depressed women are more likely to ask for emotional supports from close friends and relatives than non-depressed women or depressed men (Joiner, 1994; Turner & Turner, 1999). While higher quality of marriage increases the psychological well-being of depressed women (Frech & Williams, 2007), depressed women are more likely to decrease the quality of marriage through negative communication skills and negative emotional feelings (Rucher & Gotlib, 1988; Johnson & Jacob, 1997). Thus, to account for these gender differences, this study conducts separate analyses and focuses on a women only sample.

Analysis

Because this study conceptualizes marital dissolution as a process over the life course, the current study can't find better statistical models than survival analysis that studies different points in the duration of marriage until divorce. In survival analysis, one crucial task

is to demarcate a time period of interest: the time period from the beginning to the end of marriage. First of all, this study restricts observation of the window of divorce from the next week of the interview in 1992 to the last week of the interview in 2004. In addition, to avoid unnecessary disputes on the role of time ordering in causal inference, this study sets the starting time for time-varying variables at the week of the interview, and all time varying covariates are treated as lagged predictors.

There are several issues in order to handle risk of events: censoring and delayed entry, repeated events, and heterogeneity. First of all, because of a restricted measurement window, censoring and truncation issues are a problem: 1) data are left truncated because the individual has been exposed to the risk of an event for a while when it comes under the observation window with the length of exposure prior to observation. 2) data are right censored because the observation window ended in 2004, so the precise length of marriage is left unknown, and the survey lost a subject before the end of observation. Even though left truncation is intractable, when the length of exposure is known, left truncated data can be handled using the conditional likelihood approach (Guo, 1993; Hill, 1997). In our data, 71 percent of respondents are left truncated since the average age of respondents was 30 in 1992, and 71 percent of respondents got married within 8 years of marital duration on average in 1992. So these respondents entered a measurement window with their last marital duration. Secondly,

transition into marital dissolution may be repeated. In our study, repeated divorces happen up to 3 times. Examining heterogeneous time-to-failure within an individual indicates that there are apparent groups of similar individuals who are more vulnerable to divorce. Shared frailty models were inspected but there is no significant shared frailty in these repeated events, indicating there may not be unmeasured heterogeneity in the responses of the respondents (Hosmer & Lemeshow, 1999; Houggard, 1995). This means repeated divorces do not happen because of vulnerability to divorce in a latent group. Thus, repeated events are handled as independent events but with robust estimation of variance, which is useful in analyzing multiple-failure data (StataCorp, 2005).

There are several analytic strategies for exploring hypotheses. Above all, for exploring the first hypothesis, the survival distribution of marital dissolution by depression (Kaplan Meier plot) is explored before adjusting for other factors. Then the Cox proportional hazard model is used to estimate the effects of depression on the risk of marital dissolution, controlling for other variables. After the overall analysis, men and women were analyzed separately. For testing the second hypothesis, covariates measuring marital quality are added into the model. Because of the limitations of this survey, the second hypothesis is only applied to women. Finally, to examine the third hypothesis, interaction terms between depression and marital quality were added.

STATA 10.0 is used for data analysis because of its abilities in: 1) handling time-varied variables in the Cox regression model is relatively more convenient than with other software 2) it is useful for exploring frailty and shared frailty models in the Cox Regression Model

Results

Descriptive Statistics

Before discussing Cox Regression results, a few descriptive statistics will be briefly considered. Table 1 presents mean and standard deviations. After deleting cases with any missing values, this study ends up with a total number of 6,589 cases. In the observation window, about 14 percent of first marriages are actually disrupted, and among those who experienced first marital dissolution and then remarried, 25.2 % of second marriages are dissolved again. Finally, among those who experienced two prior divorces and then remarried, 3.9 % of experienced a third divorce. For mental health problems, 16 % of respondents reported depression symptoms in 1992 based on CES-D scale.

For demographic variables, 49 % are male and the remaining 51% are female. 61% of respondents are non-Hispanic Whites and among the remaining 40%, half are Blacks and Hispanics respectively. The average age of respondents in 1992 was 30 years of age. For

family background variables, on average parent's highest schooling was high school graduate level. Around 80% of the respondents reported they lived in city or town at age 14. About 26 % of respondents reported they did not live with two biological parents at age 14.

Education, annual family income, cohabitation experience, and presence of children are time-varying covariates. The points chosen for these variables are the last observed time point before either divorce or censoring. Thus, this study evaluates the means at the final observed time (*t-1*) before censoring or divorce (*t*). On average, years of schooling of respondents were 13 years (first year college level) and $64,190 was the average annual household income. Around 30 percent of respondents reported they experienced cohabitation prior to marriage and about 80 percent of respondents answered they had biological, step, or adopted children at home. Around 19 percent of respondents reported they were first married when they were under 20 years old. Marital quality is also measured as a time-varying variable to observe quality of marriage before either divorce or separation? On average, the score of negative conversation was around 2 (=hardly ever) and positive conversation was 3.76 (≈almost every day).

Table 1 is located here

Figure 2 is located here

Figure 2 shows the survival distribution of marital dissolution by depression before adjusting for other predictors. These curves represent the cumulative proportion of depression and non-depression, indicating those who remained divorce-free during the observation period. The distributions shows that those who had depression symptom were much more likely to have been divorced than those who didn't have any depression symptoms. Around 100 months of marital duration (=8years), 83.1% of individuals with non-depression were still married, compared to 77.9% of individuals with depression. This 5.2% gap widens gradually through the observation period to 14.6% after 385 months of marital duration (=32years), indicating that few people married under age 20 have continuously remained married in 2004. The likelihood tests for equality of depression and non-depression curves are significantly rejected indicating that the two survival curves are significantly different from each other (Log-Rank p <.001; Wilcoxon p < .001).

Multivariate Models

Table 2 shows fitting a stratified Cox regression model to test *Hypothesis 1*. The unstratified model in table 2 estimates the effect of depression after adjusting for control variables without accounting for a gender effect. The coefficient of depression is .200, indicating that there is a significant positive relationship between prior depression and later

divorce. In general, Cox regression models follow a proportionality assumption and don't consider specific distribution, but often the proportionality assumption does not fit subgroups of individuals who have different baseline hazard functions (Stinger & Willet, 2003). Prior studies consistently show gender differences in risk of marital dissolution (Wolfinger, 1999; Cherlin, 1998 et al.,). In this study, to examine the nonproportionality by gender, a stratified model is applied. The Goodness of fit in table 2 shows that a stratified model is better fitted than the unstratified, indicating there is a different baseline hazard function by gender. The last two columns of table 2 present separate analyses by gender. Surprisingly, the effect of depression on divorce is not similar by gender. The effect of depression on divorce is significantly larger for females, whereas it is not significant for males. This suggests that a history of depression may be a precursor to geting divorced only for females but not for males. In Cox regression models, the coefficient represents a log hazard of events and the exponential parameter estimate is interpreted as a relative risk of the event, so that the .290 depression for females in table 2 indicates that the hazard of divorce for females who got depressed is about 1.34 ($e^{.290} = 1.336$) times higher than that of females who did have a history of depression.

Table 2 is located here

Table 3 shows fitting a Cox regression model for females to test *Hypotheses 2 and 3*. As shown, compared to the baseline model (model 1), adding depression increases the model fit better and depression had a positive effect to estimate the risk of divorce (model 2). In models 3 and 5, to test marital quality effects on divorce, negative communication and positive communication were added separately. As expected, negative communication increased the risk of divorce while positive communication decreased the hazard of divorce. To be specific, one unit increase in positive communication decreases the risk of divorce by. 748 ($e^{-.748} = .455$) while one unit increase in negative communication increases the risk of divorce by .534 ($e^{.534} = 1.706$). Interestingly, controlling for either negative or positive communication, the effect of depression on divorce was still significant though effect sizes were reduced a bit. In models 4 and 5, I tested *Hypothesis 3*. The impacts of quality of marriage on divorce depend on the history of depression. That is, I tried to examine whether the marital quality effect of divorce varies by depression history or not by adding interaction terms. There is no significant interaction effect between marital quality and depression, and the main effect of depression is also not significant. This indicates marital quality of divorce does not vary by depression, indicating the fact that a history of depression in 1992 is not significantly related to marital quality before becoming a divorce. So this study could not find evidence that the role of marital quality in moderating marital dissolution differs for the

previously depressed compared to the non-depressed. Thus, this study fails to support *Hypothesis 3*. But I consider that no effects of interaction terms may result from attrition of depression effect over time because it is possible that depression in 1992 dose not have a strong significant relationship with marital quality in far later years, though there is weak correlation in those years. Finally, in model 7, I attempted to examine only the main effect, the depression of divorce, holding both negative and positive communications constant?. Though the effect size decreased, people who had a history of divorce were 1.293 times ($e^{.257} = 1.293$) more likely to get divorced than people without depression holding constant not only their demographic characteristics, childhood family background, life events, and SES, but also their marital quality. These results indicate the depression effect of divorce may be little dependent on marital quality before divorce, which means depression itself is a single indicator of marital dissolution over the life course.

Table 3 is located here

Discussion and Conclusions

The relationship between marriage and psychological well-being has been of great interests for both social and psychological researchers. While numerous studies have been

devoted to understanding this relationship and the mechanisms of psychological advantages of marriage, the present study focused on the opposite direction, the disadvantage of mental health for marital stability. This study found concrete evidence of social selection effects of mental health on marital disruption including depression as a predictor. Although this study suffers from the lack of necessary data to measure all potential mechanisms of selection effects over the life of a marriage, my model finds constant results to support a primary hypothesis, that the history of depression is a determinant of divorce over the marital period. But my initial prediction that both men and women who had a history of depression are more likely to get divorced was rejected. Results show that women rather than men who had depression are more likely to have a risk of divorce over their marital period. It is quite an interesting finding which is indirectly supported by prior literature reporting that while women express psychological distress by depression (Umberson & Williams, 1999; Horwitz et al., 1996), men are much more likely to externalize distress through alcoholism or violence (Simon, 2002). This indicates that if depressed women do not have quality of marriage which may set off history of depression, they are more likely to experience a negative life event. Frech & Willimas (2007) reported that while marital happiness is equally important both for non-depressed and depressed married groups, individuals in the same level of marital quality who had depression are more likely to get depressed later, and early depression is a strong

precursor of later depression regardless of marital quality. Therefore, there is no doubt in the fact that strong social ties and social support not only increases psychological well-being but also prevents stressful life events for both the depressed and the non-depressed. But what we need to focus on is that regardless of social support through social networks, a history of mental illness is still a salient indicator of negative life events and people who have had mental health problem are continuously vulnerable to stressful life events over their life course. Therefore what we need to know is how strong, what amount, and what types of social support are needed to increase the resilience of these susceptible people.

Although NLSY79 has a lot of benefits for analyzing data using event history methods, there are several limitations to this study, and most of them are with the key predictor, the depression variable, which was only measured in 1992. The first limitation due to the depression variable is artificial left truncation of the data which caused around 70 percent of respondents to enter a measurement window with an average of 8 years of marriage. This problem may raise an argument whether history of depression in 1992 is generated by lower quality of marriage or prior divorce, which in turn affects later divorce. To address this argument, another study is necessary to control these variables. Secondly, as I mentioned above, another selection effect of marital status and mental health, retardation or late entry of marriage among those who have a history of mental health problems, could not be explored in

this analysis because left truncation restricts study subjects. Further research should take into account comprehensive data for both entry into marriage and divorce in order to better understand the social selection effects of mental health on marital dissolution.

Though this study yields substantial findings that contribute to our understanding of social selection effects of mental health on marital dissolution, obviously much more research needs to be done. Thus I will continue to analyze this data set and expand to another longitudinal data set. In addition, different statistical models will be experimented with to find more powerful explanations on selection effects.

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Figure 1. Pathway for Explanation of Marital Dissolution and Mental Health through Social Psychological factors

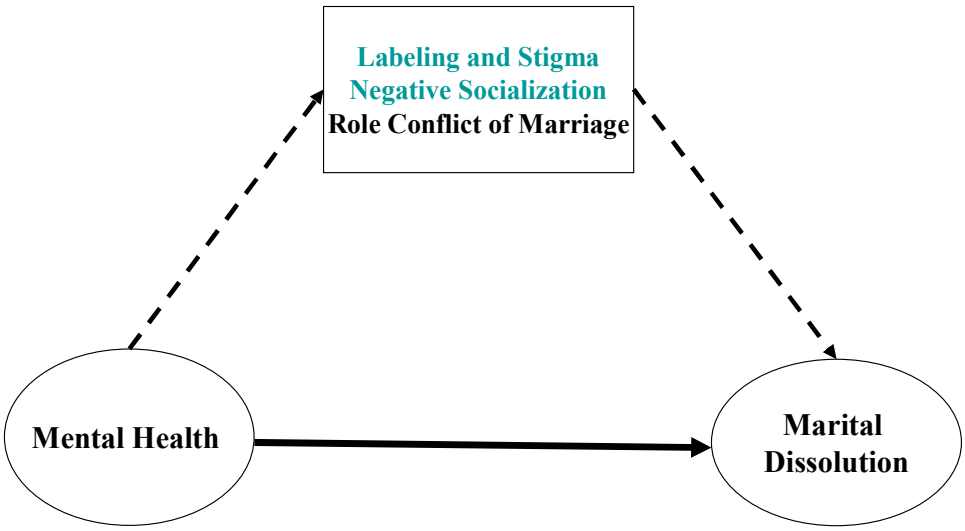

Table1. Descriptive Statistics (N=6,589)

	Variables	Categories	%/Mean	S.D	Min	Max
Marital Dissolution	1st divorce (n=921)	1st divorce	14%			
at time t	2nd divorce (n=232)	2nd divorce after 1st divorces	25 %			
	3rd divorce (n=9)	3rd divorce after 2nd divorces	4%			
Mental health ‡	Depression (CES-D)	Mild or major depression in 1992	16%			
Marital quality (female) §	Negative communication at t-1	(1=never , 4=often)	1.88	0.48	1	4
	Positive communication at t-1	(1=less than once a month , 4=almost every day)	3.76	0.48	1	4
Demographic	Age in 1992		30.37	2.19	27	34
	Gender	Female	51%			
	Race	Whites	61%			
		Blacks	20%			
		Hispanics	19 %			
Family background	Parent's Highest schooling	Years of schooling	11.91	3.49	0.00	20.00
	Residential area at age 14	Town or City (vs. Rural)	77%			
	Family structure at age14	Lived with single parent or others (vs. two parents)	26%			
Socioeconomic status	Highest grade completed	Highest year of schooling at *t-1*	13.32	2.65	0.00	20.00
	Annual family Income	Annual family income at *t-1*	64190.93	87383.74	0.0	974100.0
Life course events	Teenage marriage	Marriage under 20 years of age	19%			
	Cohabitation experience	Cohabitation prior to marriage at *t-1*	29%			
	Presence of children	Existence of children at *t-1*	82%			

Note. ‡ Cutoff of CES-D scale is 16 (American Psychiatric Association 2000)

§ Questions about marital quality are surveyed for female in NLSY79, so sub-sample n=3,071

Figure 2. Survival Time to Marital Dissolution by Depression

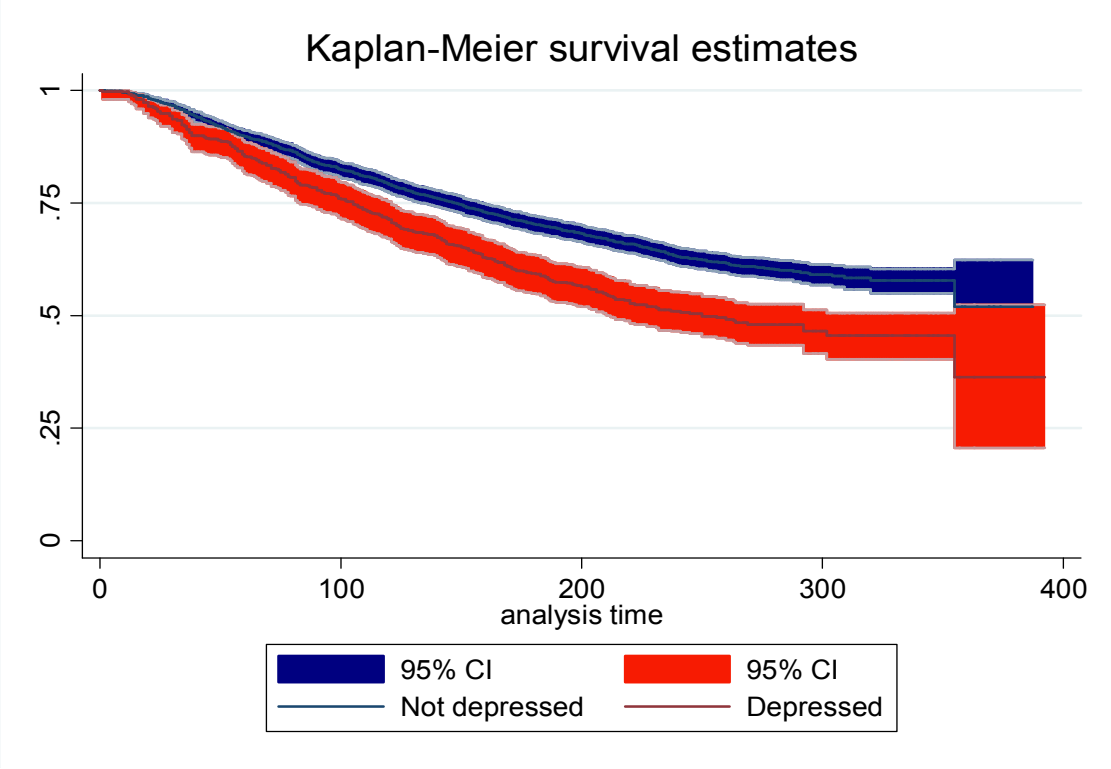

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Table 2. Fitting a stratified Cox regression model (N=6,589)

		Unstratified		Stratified by Gender		Male (n=3,180)		Female (n=3,409)	
Mental health	*Depression*	.200		.197		.065		.290	
		(.076)	**	(.076)	*	(.123)		(.099)	**
Demographic	*Age*	-.067		-.068		-.059		-.084	
		(.014)	***	(.014)	***	(.020)	**	(.020)	***
	Whites								
	Blacks	.193		.196		.191		.202	
		(.076)	*	(.076)	*	(.107)	~	(.108)	~
	Hispanics	-.117		-.117		-.153		-.084	
		(.090)		(.090)		(.132)		(.124)	
Family background	*Parents' highest schooling*	.003		.003		.004		.004	
		(.011)		(.011)		(.015)		(.015)	
	Grown up at City (vs. Rural)	.199		.200		.250		.146	
		(.075)	**	(.075)	**	(.108)	**	(.105)	
	Lived with single parent or others (vs. two parents)	.053		.052		.008		.075	
		(.068)		(.068)		(.098)		(.094)	
life course events	*Marriage under 20 years old*	.293		.295		.264		.322	**
		(.077)	***	(.079)	***	(.137)	~	(.099)	
	Any cohabitation experience at t-1	.196		.197		.140		.249	
		(.066)	**	(.066)	**	(.094)		(.093)	**
	Presence of children at t-1	-.598		-.601		-.959		-.198	
		(.072)	***	(.072)	***	(.100)	***	(.111)	~
SES	*Highest grade completed at t-1*	-.043		-.043		-.072		-.015	
		(.014)	**	(.014)	**	(.019)	***	(.021)	
	Log Family Income at t-1	-0.1012		-.100		-.053		-.130	
		0.0126	***	(.013)	***	(.023)	*	(.015)	***
Goodness-of-fit									
-2LL		17555.269		15958.146		7661.234		8257.167	

Table 3. Fitting Cox regression for female (N=3,071)

		Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Mental health	*Depression in 1992*		.429	.312	.941	.311	.165	.257
			(.127) **	(.131) *	(.524) ~	(.126) *	(.453)	(.130) *
Marital Quality	*Negative communication at t-1*			.534	.631			.249
				(.126) ***	(.155) ***			(.119) *
	*Depression*Negative communication*				-.299			
					(.243)			
	Positive communication at t-1					-.788	-.804	-.748
						(.071) ***	(.088) ***	(.076) ***
	*Depression*Positive communication*						.044	
							(.133)	
Demographic	*Age*	-.116	-.121	-.122	-.123	-.132	-.133	-.131
		(.026) ***	(.026) ***	(.026) ***	(.026) ***	(.027) ***	(.027) ***	(.027) ***
	Whites vs. Blacks	-.019	-.018	-.080	-.085	-.244	-.245	-.257
		(.158)	(.159)	(.162)	(.162)	(.164)	(.164)	(.165) ~
	Hispanics	-.201	-.218	-.235	-.239	-.238	-.237	-.245
		(.163)	(.163)	(.164)	(.164)	(.166)	(.166)	(.166)
Childhood	*Parents' highest schooling*	-.027	-.025	-.023	-.023	-.018	-.018	-.017
Family background		(.019)	(.019)	(.019)	(.019)	(.020)	(.020)	(.020)
	Grown up at City (vs. Rural)	.084	.067	.048	.056	.049	.049	.039
		(.133)	(.133)	(.134)	(.133)	(.133)	(.133)	(.133)
	Lived with single parent or others (vs. Two parents)	.118	.099	.115	.113	.115	.114	.127
		(.125)	(.126)	(.125)	(.125)	(.126)	(.126)	(.126)
Life course events	*Marriage under 20 years old*	.322	.311	.322	.319	.295	.292	.300
		(.133) **	(.133) *	(.133) *	(.133) *	(.131) *	(.132) *	(.132) *
	Any cohabitation experience at t-1	.428	.419	.412	.416	.371	.368	.375
		(.122) ***	(.123) **	(.124) **	(.124) **	(.124) **	(.125) **	(.125) **
	Presence of children at t-1	-.389	-.379	-.481	-.478	-.374	-.374	-.422
		(.146) **	(.146) **	(.149) **	(.149) **	(.147) *	(.147) *	(.151) **
SES	*Highest grade completed at t-1*	-.019	-.011	-.001	-.002	.000	.000	.004
		(.026)	(.026)	(.026)	(.026)	(.026)	(.026)	(.026)
	Log Family Income at t-1	-.107	-.100	-.101	-.100	-.061	-.062	-.066
		(.024) ***	(.025) ***	(.026) ***	(.026) ***	(.029) *	(.029) *	(.029) *
Goodness-of-fit	-2LL	4498.1	4486.9	4464.6	4463.5	4383.4	4383.3	4344.5