The Effects of Marriage on Psychological Well-Being Focusing on Motherhood Status Prior to Marriage

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Abstract

A substantial number of studies suggest that marriage provides psychological benefits for individuals. However, it is less known if the beneficial effects of marriage on psychological well-being vary by motherhood status prior to marriage. Using data from the National Longitudinal Survey of Youth 79 Cohort, we estimate the effects of marriage moderated by motherhood status on subsequent levels of psychological well-being among a sample of the initially never married women. Our results indicate that entering a first marriage is associated with greater improvements in psychological well-being for single mothers compared to childless women. The results are somewhat inconsistent with previous studies about the psychological impacts of marriage for single mothers, partly because our analysis assesses the effects of "first" marriage for "never married women" at the baseline rather than the consequence of marriage among "single women." Nonetheless, our results suggest that single mothers benefit more from marriage than childless women do.

Research on marriage and psychological well-being consistently reports that, on average, married individuals tend to enjoy higher levels of psychological well-being compared to those unmarried, pointing to the positive effects of sharing economic resources and emotional support with their spouses (Kim and McKenry 2002; Mirowsky and Ross 2003; Ross 1995; Ross, Mirowsky and Goldsteen 1990; Simon 2002; Waite 1995; Waite and Gallagher 2000). While the overall association between marriage and psychological well-being is well established, relatively few studies have examined how this association varies by motherhood status. Those that have investigated this issue suggest that the benefits of marriage are no greater for mothers than they are for childless women. For instance, the work by Lichter and colleagues found that marriage does not eliminate economic hardship for single mothers (Lichter Graef and Brown 2003). Additionally, a recent study by Williams and colleagues showed that single mothers do not experience improved levels of psychological well-being compared to childless women upon marriage partly because they have lower levels of marital quality (Williams, Sassler and Nicholson 2008).

While these studies attempt to address a question of whether or not the beneficial effects of marriage are conditioned by motherhood status before transition into marriage, they also, however, raise several issues that need further investigation. For instance, research based on cross-sectional data cannot assess how entering marriage affects psychological well-being, or how this association varies by motherhood. Moreover, even among the research that used longitudinal data, it is questionable if the impact of marriage is equivalent for those who are never married and for those who were once married but are divorced. While findings on differences in the effects of marriage on psychological well-being between individuals in first marriages and in remarriages are less conclusive (Coleman, Ganong and Fine 2000), previous

research suggests that marital quality and stability are affected by prior marriage experience, noting that remarried couples generally report lower marital quality and greater levels of conflicts compared to those who are in first marriages (Booth and Edwards 1992; Brown and Booth 1996). Therefore, remarriages might provide lower levels of perceived psychological benefits than first marriages might do.

This study builds upon the previous studies that have examined the association between marriage and psychological well-being by motherhood status prior to marriage by focusing on never married women at the baseline. The current study uses data from the National Longitudinal Survey of Youth 79 Cohort (NLSY79). As longitudinal data based on a nationally representative sample of those who were born between 1957 and 1965, the NLSY79 allows us to assess changes in psychological well-being by marriage occurred during the follow-up period. The breadth of data collected in this survey also allows us to control for potentially confounding factors such as family background and individual socioeconomic conditions.

Background

Previous literature suggests two competing hypotheses for how the association between marriage and psychological well-being should vary by motherhood status. First, the traditional perspective on family formation views marriage as a positive transition for individuals' well-being, especially among single mothers. There are several mechanisms through which marriage influences the association between motherhood status and psychological well-being. First, marriage often provides better financial resources. In general, married individuals are expected to be finally better off compared to unmarried ones. The married not only expect to have more income from their spouse but also share household resources and thus economies of scale of the

married tend to be lower than those of unmarried (Becker 1981). Additionally, the married tend to save more money than the unmarried do (Lupton and Smith 2003). Therefore, marriage may diminish the increased level of financial strains that single mothers often experience after having a child. Second, marriage also provides support from the spouse. Children create substantial new demands on mothers and mothers tend to spend much time engaged in care and other forms of household labor especially while their children are young (Nomaguchi and Bianchi 2004; Nomaguchi and Milkie 2003). However, the increased amount of housework and child care can be reduced with help or support from the spouse (Ross and Huber 1985).

In addition, the social psychological literature suggests that marriage may augment any psychological benefits from having a child. Traditionally, having a child has been a normatively expected aspect of marriage and the involuntary childlessness were often seen with pity, while those who remain childless voluntarily may be seen as selfish or suspicious (May 1995). Thus, at least traditionally, marriage may relieve social stresses among single mothers. Today, this claim is arguable because there has been a decline in the normative significance attached to the parenting role, which has been concurrent with dramatic changes in family behavior during the second half of the 20th century, including increases in divorce rates, non-marital childbearing and voluntary childlessness (Abma and Martinez 2006; Bianchi and Spain 1986; Casper and Bianchi 2002; Martin et al. 2007). For example, previous research has found that, during the 1990s, only a moderate proportion of mothers believed that all married couples who can ought to have children, suggesting that social norms associated with parenthood have weakened in recent years (Preston 1986; Thornton and Young-DeMarco 2001). However, there is also evidence that, despite weaker norms, the desire to be a parent still persists even among young people. A substantial proportion of young people in the 1990s still believed that they would want to have a

child if they were married, and only a very small proportion expected to remain childless throughout their lives. Additionally, there are strong commitments to having children as most young people view motherhood as fulfilling (Thornton and Young-DeMarco 2001).

In contrast to the traditional perspective on family formation, an alternative perspective recognizes the weakening link between marriage and childbearing both in terms of behavior and normative expectations (Martin et al. 2007; Thornton and Young-DeMarco 2001; Ventura and Bachrach 2000) As a result of the declining stigma of nonmarital childbearing as well as the fact that many fathers of nonmarital births have limited financial and social resources, the benefits of marriage for young mothers might not be as great today as they once were. Consequently, several recent studies argue that single mothers would not necessarily benefit from marriage. For instance, the work by Edin and Kefalas points out that single mothers often do not perceive having a child while unmarried as disadvantageous, even though most single mothers also acknowledge that becoming a mother before marrying may not be an ideal life transition (Edin and Kefalas 2005). Mothers of non-marital births are typically young and come from families in the lower socioeconomic strata. This group may not strongly adhere to traditional norms related to the sequencing of marriage and childbearing, so they and their communities may not be distressed about having a child before marriage. Further, young women who become single mothers often claim that their lives are improved by motherhood. For single mothers, "children offer a tangible source of meaning, while other avenues for gaining social esteem and personal satisfaction appear vague and tenuous" (Edin and Kefalas 2005:49). From this perspective, in the absence of other close family ties (e.g. marriage) or career opportunities, having a child may be especially beneficial.

Furthermore, marriage may not always bring better financial resources. Focusing on the possible financial gains to marriage among single mothers, the research by Lichter and colleagues argues that the partners available to never married mothers often have few resources and therefore, marriage alone will not substantially relieve economic hardship (Lichter, Graefe and Brown 2003). From their argument, mothers' psychological distress might not decline substantially upon marriage. Similarly, Edin and Lein (1997) also points out that financial conditions among low-income single mothers might not be improved after marriage. For these single mothers, marriage often means the loss of public assistance, including welfare, food stamps, Medicare benefits and child care assistance. Without public assistance, their wages are often too low to support their families. Therefore, single mothers might not experience greater declines in psychological distress when they marry compared to women without a child.

In sum, there are good reasons to believe that the benefits of marriage and motherhood are synergistic, such that marriage brings greater increases in psychological well being for single mothers than for childless women. Adopting this perspective, we expect that marriage is associated with higher income and increased emotional support and thus it should be associated with increased well-being especially for single mothers. Moreover, because getting married and having a child conform to the conventional norms related to family life in the US, the married might even benefit from having children. On the other hand, another line of research suggests that marriage might not improve individuals' psychological well-being among single mothers. Children may serve as a source of self-esteem for single mothers, providing them with a sense of life purpose, perhaps decreasing the women's desire for marriage. Moreover, the financial gains to marriage might not be greater than the welfare they would receive as single mothers because often their potential marriage partners engage in low-paid, unskilled work.

Research Question and Hypotheses

Building on the previous literature, this study aims to address a question of whether or not the effects of marriage on psychological well-being differ by motherhood status prior to marriage. In answering this research question, we test the following hypotheses.

H1. Drawing on the traditional perspective of family formation, we expect that entering marriage is associated with increases in psychological well-being and these increases would be greater for mothers than for childless women.

H2. According to the alternative perspective of family formation, we expect that, if there are any benefits to marrying, there are no greater increases in psychological well-being for mothers upon marriage compared to childless women.

Data, Measures and Methods

Data

Data come from the National Longitudinal Survey of Youth 79 cohort (NLSY79). The NLSY79 is designed to collect information on important life events with a nationally representative sample of 12,686 young men and women who were 14-22 years old when they were first interviewed in 1979. They were interviewed annually through 1994 and biennially until 2004. Among 21 rounds of the NLSY79, the measures for psychological well-being, which is the main dependent variable in this study, are included in the surveys which were conducted in 1992, 1994, 1998, 2000, 2002 and 2004. Using these six panels of survey data, we constructed three waves of measures of psychological well-being. The first and second waves are based on the 1992 and 1994 surveys, respectively. The third wave is synthesized from the 1998 to 2004

interviews because the respondents answered the psychological well-being questions only once among the surveys from 1998 to 2004. In the 1998 survey, the NLSY79 asked questions about psychological well-being only if the respondent had reached age 40 and then the NLSY79 asked the questions thereafter only for those who were at least 40 and had not answered these questions since 1998.

Because of the inherent diversity and normative ambiguity in the context of adopting a child, parents who have only adoptive children (n=13) are not considered in this study. After excluding those who are missing on the outcome variable (n=30) and those who are in active military service (n=16), the analytic sample includes 3,695 cases. The sample attrition from the initial survey at 1979 is 41.19%. As seen in Appendix 1, a substantial proportion of the attrition (51.43%) is due to cases dropped either from the 1984 survey or from the 1990 survey, which excluded the military sub-sample and the members of the supplemental economically disadvantaged, non-black/non-Hispanic sub-sample. Because the sample of the NLSY79 is based on those who were born between 1957 and 1965, the sample attrition due to respondent's death is very small (5.41%). To adjust for sample attrition, we present weighted statistics for sample characteristics, which also correspond to characteristics of the respondents from the initial survey in 1979 by age and race.

With three waves of the analytic sample, we constructed a data file that describes the two intervals between the three waves. This approach is based on an approach employed by Williams (2003) and Williams and Umberson (2004). Similar to the studies by Williams and colleague, we pooled the data for the two intervals so that each individual is represented twice. Before pooling the data for the two intervals, we selected those intervals that begin never-married (n=866 for intervals beginning at Wave 1 and n=789 for intervals beginning at Wave 2). Then, we pooled

these, resulting in a sample of 1,675 cases (i.e. 886+789). We did likewise for individuals who start married (4,171 cases; n=2,058 for intervals beginning at Wave 1 and n=2,113 for intervals beginning at Wave 2). Table 1 summarizes the sample sizes by parental status at the baseline as well as changes in marital status as of the current survey among the never married at the initial status.

(Table 1 about here)

This approach has several advantages. First, it effectively increases the size of the sample experiencing a change in marital status between the surveys and therefore reduces the probability that we may fail to observe existing variation in the levels of psychological well-being upon marital transitions due to a lack of statistical power. Moreover, the pooled data provides various follow-up periods between Time 1 and Time 2 allowing the examination of the effects of transitions into marriage on the relationship between motherhood status and change in psychological well-being over time. As described above, while Wave 1 and Wave 2 are based on the 1992 and 1994 surveys, resulting in a two year period between the surveys, Wave 3 is composed of the surveys from 1998 to 2004. Thus, pooling three waves of the data provides variations in the period between Time 1 and Time 2 across respondents ranging from 2 to 10 years. Additionally, variations in the follow-up period decrease multicollinearity problems by reducing the correlation between the levels of psychological well-being at Time 1 and Time 2.

We estimated preliminary models looking at the effects of marriage on the association between motherhood status and psychological well-being using three waves of data without pooling them. That is, we ran models estimating the level of psychological well-being at Wave 2 with information from Wave 1 and a change in marital status between Wave 1 and Wave 2. In the same manner, we ran another set of models estimating the level of psychological well-being

at Wave 3 with Wave 2 information as well as a change in marital status since Wave 2. The results (not shown) justify our analytical strategy to pool the data because the magnitudes and directions of the coefficients are largely consistent across the interviews. Results presented in this paper are based on the pooled data. We computed robust standard errors after adjusting for the clustering in the data.

As mentioned earlier, all analyses focus only on female respondents. Women often are the primary care provider for the children and are more likely to be in charge of increased housework after having a child (Bird 1997, 1999). Thus, parental status has a different influence on the lives of men compared to those of women (Nomaguchi and Milkie 2003). Moreover, data on parental status for men might not be very accurate because men tend to underreport children, especially if they have fathered them outside of marriage (Rendall et al. 1999).

Measures

We used depression scales to measure individuals' psychological well-being. The NLSY79 first asked respondents to answer the Center for Epidemiological Studies Depression (CES-D) Scale in 1992. This scale measures how often respondents experienced a series of depressive symptoms. It discriminates between clinically depressed individuals and others, and it is highly correlated with other depression rating scales (Radloff 1977). Although the original 20 items of the CES-D scale were asked in the 1992 survey, the numbers of the items asked vary across the surveys. For example, the 1998 and 2000 surveys collected a reduced set of seven items. This same set of seven items was also included in the 1994 survey but it is increased to nine items in the 2002 and 2004 survey. To avoid potential measurement errors, we constructed the psychological well-being variable using the following seven items that were asked

consistently throughout the surveys. The NLSY79 asked how often in the past week: you did not feel like eating; you had trouble keeping your mind on what you were doing; you felt depressed; you felt that everything you did was an effort; your sleep was restless; you felt sad; and you could not get going. Respondents answered 0 for rarely/none of the time/1 day, 1 for some/a little of the time/1-2 days, 2 for occasionally/moderate amount of the time/3-4 days, and 3 for most/all of the time/5-7days. We computed the average score of the frequency of depressive symptoms with higher scores indicating lower level of psychological well-being. The alpha coefficients for the internal consistency among the seven items at Time 1 and Time 2 are 0.85 and 0.86, respectively.

Motherhood status is created one dichotomous variable to indicate whether or not a respondent had had a birth as of Time 1 (1=mother; 0=non-mother). Additionally, we created a variable indicating whether or not childless women at Time 1 became a mother since Time 1 to adjust for a change in parental status between Time 1 and Time 2.

To estimate how the association between entering marriage and psychological well-being is conditioned by motherhood status, we also used a dichotomous variable indicating whether or not women got married between Time 1 and Time 2 among never married at Time 1. While we created a variable for marital transition, we also explored a variable that examined the possibility of looking at changes in depression score among those who formed a cohabiting union. However, there were not enough cases to produce reliable estimates because only 15 respondents entered a cohabiting union at Time 2 among those who were never married single at Time 1. Therefore, our current analytic sample of never married does not distinguish those who are in cohabiting union from the never married. Because of the small proportion of those who were cohabiting, we do not expect that the results presented in this study are affected by the inclusion of cohabiting

women to the sample. In fact, our exploratory analysis indicated that the results based on the sample that excludes cohabiting women produced stronger coefficients (the results not shown).

The current analysis also involves demographic predictors, such as age and race and ethnicity. We included age measured in years after centering on the mean values at each time to facilitate interpretations of other coefficients. Race and ethnicity was coded trichotomously for non-Hispanic Whites (NHW), non-Hispanic Blacks (NHB) and 'others'. The 'others' category includes Hispanics, Native Americans, and Asians or Pacific Islanders.

We also included variables for individuals' resources in models. For example, educational attainment was measured in years based on highest grade completed as of Time 1 and was centered on 12. A variable for labor force participation was coded 1 for employed and 0 for non-employed. To control for whether or not respondents suffer from financial strain, we also included a family poverty status variable in the analysis, which was calculated using the Poverty Income Guidelines (PIG) provided by the U.S. Department of Health and Human Services. The PIG uses one person as a base and an increment is added to that figure for each single person increase in family size (US Department of Labor 2007). Respondents were determined to be in poverty if their total household income for the last fiscal year for the family size is below the PIG. The family poverty status variable has several advantages over the amount of total household income. First, the family poverty status variable provides an adjusted status of income resources given family size. Therefore, it serves as a better indicator of financial strains upon changes in family size by having a child, or getting married, divorced or widowed. Second, the family poverty status at each time reflects an adjusted value of economic inflations during the survey period as it is based on the PIG, which is updated annually by the U.S. Department of Health and

Human Services. We coded the variable dichotomously indicating 1 for those who are in poverty and 0 for otherwise.

In addition to these predictors, we included controls for the living arrangement of respondents while they grew up and the respondent's mother's education to adjust family background. We included a variable indicating whether or not respondents lived with both biological parents until age 18. Information from the question, 'Did you live with both your biological mother and biological father from the time you were born until your 18th birthday?' was used to create a dichotomous variable: coded 1 for those who lived with both biological parents; and coded 0 for those who did not live with their biological parents at some point before age 18. Another variable is for mother's completed years of education centered on 12. Five percent of the respondents who were missing on mother's education were assigned the mean value. We also included an additional variable coded 1 for those who didn't know their mother's education and 0 for those who did know.

Methods

We estimated a set of regression models to investigate whether or not the effects of marriage on psychological well-being vary by respondents' motherhood status using the sample of women who were never married at the beginning of the interval (Time 1). We first estimated the relationship between motherhood status and depression score at the baseline. Then we estimated models that predict respondents' depression score at Time 2 with a variable indicating change in marital status since Time 1 using lagged regression models. More specifically, Model 1 estimates how having a child is associated with depression score net of demographic characteristics and family background. Model 2 adds to Model 1 individuals' resources,

including educational attainment, employment status and whether or not respondents are in poverty. While both Model 1 and 2 are cross-sectional regression models predicting depression score at Time 1, Model 3 and 4 are lagged models. In these models (3 and 4), we regressed depression score at Time 2 on motherhood status at Time 1 with a change in marital status between Time 1 and Time 2. In Model 3 and 4, we also included depression score at Time 1 as a control variable to estimate changes in depression scores associated with a change in marital status. Furthermore, because both employment status and economic hardship are often contingent on changes in marital status, we include information about changes in employment status and poverty status between Time 1 and Time 2, instead of static conditions at Time 1. We also included a variable indicating a change in motherhood status since Time 1 in Model 3 and 4 to estimate the effects of being a mother in contrast with those who did not have a child throughout the time period (the reference category).

Results

Descriptive Statistics

Table 2 illustrates the sample characteristics by the variables mentioned above.

(Table 2 about here)

As expected, the depression scores decline as women age. Among those never married, forty percent are single mothers as of Time 1. While this proportion of having a child increased to forty four percent by Time 2, nineteen percent of them entered married at Time 2. We also present the descriptive statistics separately for four groups by marital transition and motherhood status among the never married at the baseline. Table 3 shows characteristics of the sample by motherhood status at Time 1 and marital transition at Time 2.

(Table 3 about here)

According to Table 3, single mothers represent socially disadvantaged groups. For instance, single mothers are more common among race and ethnic minorities (e.g. non-Hispanic Black); those who have low educational attainment; unemployed; and those who live in poverty. With respect to depression score, all women experience declines in depression score at Time 2 with an exception of single mothers who stayed unmarried at Time 2. Large declines in depression scores are found among those who entered marriage at Time 2 and among the married women, single mothers experience considerable declines relative to childless women. In this group, a substantial proportion also experienced financial improvements at Time 2 given that the proportion of those who are in poverty at Time 2 is down to thirteen percent from forty six percent at Time 1. Next, we ran regression models to adjust for various conditions such as demographics, family background and socioeconomic resources.

Entering Marriage, Motherhood and Psychological Well-Being

To estimate how marriage influences the association between motherhood and psychological well-being, we ran regression models focusing on changes in depression score upon entering marriage. The results are presented in Table 4.

(Table 4 about here)

The regression results show that never married women are more likely to report a higher depression score when they had a child, even after controlling for demographics and family background. For example, the predicted depression score among never married without a child is 0.5942 (i.e. the coefficient of the intercept in Model 1). However, the predicted depression score increases to 0.8269 among never married women with a child (i.e. 0.5942+0.2327), net of

demographics and family background information. This higher depression score among never married mothers is attributed to resource strains after having a child. The results from Model 2 show that mothers are no longer psychologically disadvantaged when their educational attainment, labor force status and family poverty status are taken into account.

Model 3 and 4 test whether or not and how the effects of marriage vary by motherhood status prior to marriage. First of all, the results from Model 3 confirm the findings from previous research that marriage improves women's psychological well-being. The negative coefficient of 'married at T2' (-0.0827) indicates that those who married during the follow-up period experienced declines in depression score. With respect to motherhood status, unlike the coefficient of 'being a mother at T1' in Model 2, the positive coefficient of 'being a mother at T1' (0.1030) is still significant. It indicates that having a child is associated with higher depression scores in later years even after controlling for socioeconomic status as well as family background. This finding suggests that any positive aspects of having a child may diminish as children age, or that mothers may encounter new challenges in parenting.

The most striking results are found in Model 4. The negative coefficient of the interaction term (-0.1649) shows that those who had a child before marriage experienced greater declines in depression score upon marriage compared to those who did not have a child. On the other hand, single mothers who remained unmarried are the most vulnerable to psychological well-being. As shown in Table 3, the higher poverty rate as well as unemployment rate are found in this group. Besides, it also appears that they might face social stresses while experiencing high role demands of parenting. Unmarried single mothers experienced increases in depression score with other sociodemographic conditions held constant given the positive coefficient of 'being a mother at T1' (i.e. 0.1247).

Depression score was not significantly improved by entering marriage for those who did not have a child at the baseline given that the coefficient of 'married at Time 2' (i.e. -0.0338) is not significant. It may be attributed to marriage at later ages during the follow-up period among the respondents. In our sample, the never married women are 27 years old and older at the baseline. For these women, marriage might not have provided psychological benefits as much as it might have for women in their early or mid-twenties at marriage. Never married women who are in their late twenties and older might have higher chances of completing their education, being employed and extending social networks compared to those who married at earlier ages. Thus, childless women who married at later ages in our sample may not receive much benefits from marriage compared to those who stay unmarried.

Conclusion and Discussion

In an effort to further explore the association between marriage and psychological well-being, this study addresses a question of whether or not the beneficial effects of marriage on psychological well-being differ by motherhood status prior to marriage focusing on never married women at the baseline. Our results indicate that compared to women who remain unmarried, women who marry experience declines in depression score and that these declines are greater for women with a child than childless women. These results support the traditional perspective of family formation, which emphasizes a normative expectation to raise a child by two parents as well as financial resources and social support that marriage may provide. In our sample, considerable proportion of single mothers no longer lived in poverty after marriage. Our regression results also show that greater declines in depression score among single mothers after marriage compared to childless women even with financial resources taken into account. These

results indicate that marriage offers more than financial resources especially for single mothers, although we did not estimate directly to what extent marriage reduces depression score by relieving psychological burden and role demands of being a single mother. Single mothers presumably face somewhat an unfavorable social environment. Despite some evidence from previous research about declining stigma of nonmarital childbearing, the results in this study suggest that entering marriage might conform to social expectation to raise a child within married couples. Further, role demands of parenting are expected to be higher without a spouse. Entering marriage might help single mothers have more support to manage their role demands as a mother.

Our results imply that marriage might be a salutary transition that enhances psychological well-being among single mothers. This finding is somewhat inconsistent with the findings from both Williams et al. (2008) and Lichter et al. (2003). For instance, the work by Williams and colleagues (2008) argues that the psychological benefits of marriage do not differ by motherhood status. It is partly attributed to sample selection. As indicated earlier, we analyzed a sample of never married women at the baseline, while the work by Williams and colleagues used a sample of women who are either never married or divorced. It is expected that the psychological benefits of marriage among remarried women might not be as much as they might be in first marriages. Thus, it might be the case that the beneficial effects of entering marriage on psychological well-being among single mothers are suppressed by divorced over never married.

On the other hand, Lichter and colleagues claimed that marriage alone does not substantially improve financial condition among single mothers (Lichter et al. 2003). However, our results show that the proportion of living in poverty among single mothers is much reduced and depression score is significantly improved after marriage. This inconsistency may lie in the

different research aims and analytical approaches employed in the studies. While Lichter et al. (2003) estimated the probability of living in poverty based on cross sectional data with retrospective information, our study used longitudinal data to estimate changes in depression score associated with transition into marriage by previous motherhood status net of socioeconomic conditions.

To continue to explore variations in the association between marriage and mental health by additional circumstances, we suggest several directions for future research. First, the hypotheses in this study should be retested using data on a wider age range. The mean age of our sample of the never married at the baseline is somewhat old (i.e. 32 years old), given that currently in the US about three-fourths of women are more likely to enter first marriage by age 30 (Bramlet and Mosher 2002). Considering that marriage at later ages is associated with a lower probability of marital dissolution partly due to a better marital quality and stability (Bumpass, Castro-Martin and Sweet 1991; Teachman 2002), future studies should distinguish the effect of age at marriage from the effect of entering marriage on psychological well-being by precondition of motherhood status.

Second, those who study motherhood status and its impacts on well-being should examine variations by race and ethnic group. It has been observed that there are substantial differences not only in proportions of having a child but also in sequences of life transitions such as getting married and having a child across race and ethnicity (Martin et al. 2007; Ventura and Baruch 2000). While Edin and Kefalas (2005) argues that there are not substantial differences in how women feel about their choices to take non-traditional pathways to start a family across race and ethnicity, little empirical research has tested if the association between individuals' family behaviors and well-being varies by race and ethnic groups and, if it does, to what extent social

relations can explain differences in well-being associated with family behaviors across race and ethnic groups.

Third, it should also be useful to test the hypotheses in the current study using a sample of a wider range of birth cohorts. As noted earlier, the present study is based on respondents that were born between 1957 and 1965. Most of the respondents were in their late thirties or early forties at Time 2. Given that there have been changes in family behaviors as well as social climates in recent decades, future research should address if there are intergenerational changes in the effects of marriage on well-being associated with parental status prior to marriage.

Finally, it should be noted that this study did not consider characteristics of children and how these might influence both the chance that the mother will marry as well as her psychological well-being. It is reasonable that mothers' psychological well-being is associated with various attributes of children including children's health conditions, academic achievement, and disruptive attitudes and behaviors depending on the children's developmental stages. Furthermore, concerns about children's developmental achievement and behaviors might affect mothers' decision to enter or exit marriage. However, including these conditions in the analysis is beyond the scope of the current study as it requires different theoretical foundations and analytical approaches. To focus on women's psychological well-being by motherhood status using the life course perspective, the current study did not incorporate information about children into analyses. Building on the current study, future research should identify the mediating conditions of children to explain mothers' psychological well-being by children's developmental stages, and whether or not they vary by marital status. To what extent these characteristics of children explain mothers' psychological well-being upon marital transitional experience should also be explored.

Despite the above issues remained unanswered, this study has contributed to a better understanding of the association between marriage and psychological well-being by showing that the psychological consequence of entering marriage differs by precondition of motherhood status. While a large body of literature reported that mothers do not receive psychological benefits from having a child, the findings in this study show that entering marriage alters the association between motherhood and psychological well-being. Our findings clearly suggest that, while the positive association between entering marriage and psychological well-being is still found, marriage is more beneficial for never married single mothers than for their childless counterpart. This implication needs caution for generalization. The greater declines in psychological distress for single mothers upon marriage might at least partly result in self selection into marriage where those who would be most likely to benefit from marriage are more likely to marry. Nonetheless, our results provide an important implication that the beneficial effects of transition into marriage are more applicable to single mothers who are never married.

Table 1. Sample Sizes by Marital Transitions between Survey Waves

	Changes in Marital Status among the Never Married at the Baseline					
	Wave 1 and Wave 2		Wave 2 to Wave 3		Time 1 to Time 2	
	unweighted n	weighted %	unweighted n	weighted %	unweighted n	weighted %
Continuously never married	788	86.54	577	68.33	1,365	78.08
Married	93	13.02	171	26.76	264	19.40
Divorced[a]	4	0.39	38	4.71	42	2.39
Widowed[a]	1	0.05	3	0.20	4	0.12
Total Sample	886	100.00	789	100.00	1,675	100.00

Note: [a] Those who became divorced or widowed are not considered as separate categories in the regression models even though they are included in the analysis. The sample sizes for 'divorced' and 'widowed' are too small to have statistical power. More importantly, they experienced changes in marital status more than once during the follow-up period and the effects of multiple marital transitions are beyond the scope of the current study.

Table 2. Descriptive Statistics of the Never Married (N=1,675)

	Never Married at Time 1			
Variable	Mean	S.D.	Min.	Max.
Depression score at each time				
Averaged CES-D scales at T1	0.68	0.53	0	3
Averaged CES-D scales at T2	0.63	0.56	0	3
Parental status				
Being a mother at T1	0.40	0.43	0	1
Became a mother since T1	0.04	0.17	0	1
Change in marital status since T1				
Married at T2	0.19	0.35	0	1
Divorced at T2	0.02	0.13	0	1
Widowed at T2	0.00	0.03	0	1
Demographics				
Age at T1	31.69	2.09	27	37
Age at T2	36.20	3.57	29	44
Family background				
Mother's years of schooling	11.36	2.56	0	20
Mother's education unknown	0.06	0.21	0	1
Lived w/ two biological parents until age 18	0.61	0.43	0	1
Individual's resources				
Completed years of education	13.58	2.34	0	20
Employed at T1	0.74	0.39	0	1
Employed at T2	0.76	0.37	0	1
In poverty at T1	0.21	0.36	0	1
In poverty at T2	0.19	0.34	0	1
Years elapsed between T1 and T2	4.52	2.68	2	10
Unweighted N	1,675			

Note: The statistics are weighted.

Table 3. Never Married at T1 by Parental Status at T1 and Marital Transition at T2 (N=1,675)

	Stay Unmarried Women at T2								Married Women at T2							
	Childless at T1				Single Mothers at T1				Childless at T1				Single Mothers at T1			
	Mean	S.D.	Min.	Max.	Mean	S.D.	Min.	Max.	Mean	S.D.	Min.	Max.	Mean	S.D.	Min.	Max.
Depression score at each time																
Averaged CES-D scales at T1	0.59	0.54	0	3	0.80	0.48	0	3	0.54	0.66	0	3	0.95	0.51	0	3
Averaged CES-D scales at T2	0.55	0.57	0	3	0.81	0.55	0	3	0.46	0.51	0	2	0.67	0.54	0	3
Parental status																
Being a mother at T1	-	-	-	-	1.00	0.00	1	1	-	-	-	-	1.00	0.00	1	1
Became a mother since T1	0.03	0.17	0	1	-	-	-	-	0.16	0.40	0	1	-	-	-	-
Change in marital status since T1																
Stay unmarried at T2	1.00	0.00	1	1	1.00	0.00	1	1	-	-	-	-	-	-	-	-
Married at T2	-	-	-	-	-	-	-	-	1.00	0.00	1	1	1.00	0.00	1	1
Demographics																
Age at T1	31.63	2.35	27	37	31.85	1.82	27	37	31.58	2.57	27	37	31.39	1.41	28	36
Age at T2	35.72	3.97	29	44	36.19	3.03	29	43	37.13	4.39	29	41	38.10	2.73	30	41
Non-Hispanic White	0.56	0.48	0	1	0.26	0.33	0	1	0.64	0.53	0	1	0.24	0.33	0	1
Non-Hispanic Black	0.17	0.37	0	1	0.58	0.37	0	1	0.08	0.30	0	1	0.49	0.39	0	1
Others	0.27	0.43	0	1	0.16	0.27	0	1	0.28	0.49	0	1	0.27	0.34	0	1
Family background																
Mother's years of schooling	11.92	2.86	0	20	10.43	1.93	0	18	12.13	3.50	0	18	10.39	1.74	3	14
Mother's education unknown	0.05	0.22	0	1	0.08	0.21	0	1	0.03	0.17	0	1	0.09	0.22	0	1
Lived w/ two biological parents until age 18	0.72	0.44	0	1	0.43	0.37	0	1	0.74	0.49	0	1	0.41	0.38	0	1

(Table continues on next page)

Individual's resources																
Completed years of education	14.23	2.60	0	20	12.24	1.55	0	20	15.21	2.77	11	20	12.21	1.41	0	16
Employed at T1	0.88	0.31	0	1	0.53	0.38	0	1	0.84	0.41	0	1	0.55	0.38	0	1
Employed at T2	0.86	0.34	0	1	0.60	0.37	0	1	0.87	0.38	0	1	0.65	0.37	0	1
In poverty at T1	0.07	0.24	0	1	0.45	0.38	0	1	0.02	0.15	0	1	0.46	0.38	0	1
In poverty at T2	0.08	0.27	0	1	0.41	0.37	0	1	0.01	0.13	0	1	0.13	0.26	0	1
Years elapsed between T1 and T2	4.09	2.79	2	10	4.34	2.21	2	10	5.55	3.66	2	10	6.71	2.41	2	10
n	628				783				152				112			

Note: The statistics are weighted.

Table 4. Depression Score Regressed on Marital Status, Parental Status and Their Interaction among Never Married at Time 1 (N=1,675)

	Time 1				Time 2			
	Model 1		Model 2		Model 3		Model 4	
Variable	Coefficient	S.E.	Coefficient	S.E.	Coefficient	S.E.	Coefficient	S.E.
Intercept	0.5942 ***	0.0480	0.8754 ***	0.0722	0.3593 ***	0.0698	0.3420 ***	0.0697
Parental Status								
Being a mother at T1	0.2327 ***	0.0506	0.0818	0.0528	0.1030 *	0.0426	0.1247 **	0.0453
Change in marital status (unmarried at T2)								
Married at T2					-0.0827 *	0.0421	-0.0338	0.0449
Interaction								
Married at T2 × Being a mother at T1							-0.1649 †	0.0977
Change in parental status								
Became a mother since T1					-0.0480	0.0715	-0.0703	0.0706
Age, centered on the mean age at each time	-0.0128	0.0083	-0.0099	0.0081	0.0005	0.0068	-0.0001	0.0069
Race/Ethnicity (Non-Hispanic White)								
Non-Hispanic Black	-0.0409	0.0548	-0.0499	0.0524	-0.0300	0.0465	-0.0287	0.0463
Others	0.0549	0.0617	0.0455	0.0581	0.0597	0.0459	0.0628	0.0457
Family background								
Mother's years of schooling, centered on 12	-0.0158 *	0.0073	0.0010	0.0071	-0.0065	0.0058	-0.0065	0.0059
Mother's education unknown	0.0121	0.0698	-0.0843	0.0685	0.0188	0.0768	0.0215	0.0765
Lived w/ two biological parents until age 18	-0.0421	0.0418	-0.0101	0.0402	-0.0177	0.0355	-0.0171	0.0354
Individual's resources								
Completed years of education, centered on 12			-0.0414 ***	0.0105	-0.0192 *	0.0078	-0.0199 *	0.0079
Employed at T1			-0.2237 ***	0.0552				
In poverty at T1			0.0569	0.0532				

(Table continues on next page)

Change in employment status (no change between T1 and T2)						
Newly employed at T2			-0.0250	0.0542	-0.0318	0.0538
Newly unemployed at T2			0.1233 †	0.0669	0.1204 †	0.0667
Change in economic status (no change between T1 and T2)						
Newly out of poverty at T2			0.0194	0.0539	0.0324	0.0538
Newly in poverty at T2			0.1146	0.0768	0.1124	0.0766
Other controls						
Years elapsed between T1 and T2			-0.0030	0.0087	-0.0017	0.0087
Depression Score at T1			0.4124 ***	0.0355	0.4150 ***	0.0353
R-Squared	0.0522	0.1098	0.2266		0.2286	

Notes: Reference categories are in parentheses. † $p<.10$; * $p<.05$; ** $p<.01$; *** $p<.001$ (two-tailed test).

Appendix 1. Description for the Sample Attrition

	Frequency (n)	Percentage (%)
Reasons for noninterview from the 1992 and 2004 surveys		
Military sample dropped since the 1984 survey	441	17.04
Supplemental female poor white sample dropped since the 1990 survey	890	34.39
Refusal	580	22.41
Unable to locate	153	5.91
Difficult case	240	9.28
Deceased	140	5.41
Incarcerated	5	0.19
Other	80	3.09
Excluded due to sample selection criteria		
Missing on CES-D scale	30	1.16
Having only adoptive children	13	0.50
In active military service	16	0.62
Total excluded in the analytic sample	2,588	100.00

Note: The statistics are unweighted.

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