Unexpectedly Expecting: Pregnancy Intentions and Parental Well-being

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Abstract

Extant research suggests that parents are more depressed and stressed than their childless counterparts. This study expands on this body of research by examining the effects of pregnancy intentions —whether a birth was considered intended (planned at the time of conception) or unintended (unwanted or mistimed at conception) — on parental well-being. Using two waves of data from the National Survey of Families and Households (NSFH), this study focuses on the initial transition to parenthood and finds that pregnancy intentions are an important consideration in understanding the relationship between parenthood and well-being. Further, it uncovers notable gender differences in well-being among parents. Mothers with intended first births experience less depression than childless women, while mothers with unintended births do not experience any more or less depression than childless women. Fathers with an unintended birth experience more depression relative to childless men. This study also investigates the social, psychological, and economic mechanisms that might explain this relationship. Social interaction partially mediates the relationship among mothers, while self-efficacy and financial strain mediate the relationship among fathers.

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INTRODUCTION

Empirical research exploring the effects of parenthood on well-being suggests that parents experience more depression and stress relative to their childless counterparts (Evenson & Simon, 2005; McLanahan & Adams, 1987). Yet these research findings are inconsistent with normative expectations about the meaning of parenthood (Simon, 2008). Most people believe that parenthood is an emotionally fulfilling and pivotal milestone, and general audiences find it difficult to accept this negative prognosis (Senior, 2010). This dissonance is illustrated in a recent issue of *New York* magazine, which featured a cover story boldly titled "All Joy and No Fun: Why Parents Hate Parenting" (Senior, 2010).

This study attempts to clarify the relationship between parenthood and well-being by examining the effects of pregnancy *intentions* —whether a birth was considered intended (planned at the time of conception) or unintended (unwanted or mistimed at conception). A birth is considered unintended if the parent did not want to have a child at some point in the future at the time of conception (classified as an "unwanted" pregnancy), or if the parent wanted another child but indicated that the pregnancy occurred sooner than desired (classified as a "mistimed" pregnancy). Using two waves of data from the National Survey of Families and Households (NSFH), I find that pregnancy intentions are an important consideration in unpacking the relationship between parenthood and well-being. I also uncover notable gender differences in this relationship. To foreshadow, I find that mothers with unintended births don't generally experience the negative effects that fathers experience, and mothers with intended births get a boost that fathers don't experience.

Having established the importance of pregnancy intentions in understanding the relationship between parenthood and well-being, I also investigate the social, psychological, and

economic mechanisms that might explain this relationship. More specifically, I test whether the effects of union status, religious attendance, social interaction, help received from social support networks, self-efficacy, and financial strain mediate the relationship between intentions and well-being. I find that social interaction mediate the relationship among mothers, while self efficacy and financial strain mediate the relationship among fathers.

BACKGROUND

Pregnancy Intentions

The widespread availability of birth control, advances in reproductive technology, and evolving norms about childbearing behavior have enabled men and women to make more choices about their reproductive behavior (Sayer, Bianchi, & Robinson, 2004). Despite the increasingly voluntary nature of parenthood, the United States has a surprisingly high rate of unintended pregnancy. In 2001, 49% of all pregnancies were unintended, and 22% of these unintended pregnancies resulted in live births (Finer & Henshaw, 2006). This presents an interesting paradox, because it demonstrates that behavior does not always match preferences or intentions.

The focus on pregnancy intentions in this study is further motivated by contemporary patterns of family formation and childbearing. Rising rates of nonmarital childbearing and cohabitation combined with decreasing rates of marriage and changing attitudes about fertility behavior have created diverse pathways to parenthood (Smock & Greenland, 2010). Discussions of nonmarital childbearing often infer that the pregnancies are unintended, but this may not be a safe assumption as the link between marriage and childbearing weakens. Analysis of data from the 1995 National Survey of Family Growth finds that although married women are still most likely to have a planned birth, nearly half of nonmarital births are planned (39% among single

women and 54% among cohabitors) (Musick, 2002). Pregnancy intentions might be a clearer concept to gauge the social context of parenthood as childbearing and marriage are increasingly decoupled.

Finally, given that unintended pregnancies are concentrated among relatively disadvantaged groups, such as racial minorities, unmarried women, low-income women, or women with low education (Abma & Mott, 1994; Finer & Henshaw, 2006; Guzman, Wildsmith, Manlove, & Franzetta, 2010; Musick, 2002; Musick, England, Edgington, & Kangas, 2009), their impact on parental well-being has broader implications for inequality. If parents with unintended pregnancies are less happy or more depressed as a group, their poor well-being may further compound the negative effects of their relative disadvantage. Further, poor well-being may also limit the resources these parents can confer to their children, and contribute to the increasingly "diverging destinies" of children from different social classes (McLanahan, 2004).

Parenthood and Well-Being

Several studies have found that parenthood is related to poorer well-being among adults. In general, they find that parents experience higher levels of anxiety, depression (Evenson & Simon, 2005; McLanahan & Adams, 1987), and anger (Ross & Van Willigen, 1996) compared to their childless counterparts. Although the bulk of this research finds negative effects, some research finds positive effects of parenthood on well-being, such as increased social integration compared to non-parents (Nomaguchi & Milkie, 2003). First-born children are also associated with positive gains in subjective well-being, although subsequent births decrease it (Kohler, Behrman, & Skytthe, 2005).

Research has probed the general relationship between parenthood and well-being by considering how it might vary by gender, union status, and cohabitation. In general, married

parents are less depressed than single and cohabiting parents (Evenson & Simon, 2005; Nomaguchi & Milkie, 2003), and women experience more positive benefits of parenthood than men (Kohler et al., 2005). Unmarried fathers are particularly susceptible to poor well-being relative to married fathers (Nomaguchi & Milkie, 2003). An extension to Nomaguchi and Milkie finds that cohabitation is worse than being single among new mothers, but better than being single among fathers (Woo & Raley, 2005). In a study of adult twins (which controls for unobserved characteristics), twin sisters with a first-born child experience greater well-being than the childless sisters, even after adjusting for partnership status (marriage or cohabitation) (Kohler et al., 2005). However, Kohler et al. find that men's happiness depends primarily on their partnership status, not parenthood. This finding is consistent with Nomaguchi and Milkie, who find that parental status has little influence on the lives of married men (2003).

Unintended Pregnancy and Well-Being

There are several reasons to believe that unintended pregnancy is associated with well-being among parents. Unintended pregnancy has been linked with a host of negative outcomes for children (Brown & Eisenberg, 1995). Specifically, children resulting from an unintended pregnancy are more likely to have a low birth weight (Brown & Eisenberg, 1995), lower-quality relationships with their parents (Barber, Axinn, & Thornton, 1999; Barber & East, 2009), less father involvement (Bronte-Tinkew, Ryan, Carrano, & Moore, 2007; Bronte-Tinkew, Scott, Horowitz, & Lilja, 2009), fewer opportunities for skill development (Baydar, 1995), poorer health, lower activity levels, and worse scores on development assessments (Crissey, 2005). Further, research on teen pregnancy has documented the negative effects of early unintended pregnancy for both children and parents (Furstenberg, 1976). These studies suggest that

pregnancy planning has important implications for well-being, yet its effects on parents are not well-understood.

Although the focus of this study is relatively novel, there is some previous work linking pregnancy intentions to well-being. Using data from a sample of first-time resident fathers, Bronte-Tinkew et al. (2009) found that unintended pregnancies are associated with increased paternal depression, which is in turn associated with less support, communication, and joint decision-making with the baby's mother. Similarly, Barber, Axinn, and Thornton (1999) found that unintended childbearing has a significant and negative effect on maternal depression, which in turn compromises mother-child relationships.

This study builds on this previous research in several ways. First, it considers gender differences more explicitly by comparing men and women; previous studies on pregnancy intentions and well-being have focused exclusively on men or women, but not both. Second, it includes a control group of nonparents to isolate effects of parenthood in general and pregnancy intentions specifically. Previous research on parenting and well-being makes this comparison, but research on the effects of intentions compares parents with intended pregnancies to parents with unintended pregnancies. Third, it takes advantage of longitudinal data to address some concerns about selection. I am able to control for the respondent's well-being prior to becoming a parent, which partially addresses the concern that people with poor well-being are more likely to have an unintended birth and, in turn, display poor well-being after the birth. Fourth, it is unique in its specific focus on the initial transition to parenthood by looking at the pregnancy intentions of *first* births. Finally, it explores the specific pathways through which this linkage operates; specifically, through union status, social support, self-efficacy, and financial strain. I elaborate on these pathways below.

Pathways of Pregnancy Intention and Well-Being

I argue that pregnancy intentions are associated with parental well-being because of the social context in which intended and unintended births are likely to occur. The transition to parenthood is a stressful event for most parents, even those who are considered "low-risk" in terms of marital status, social support, psychological distress, and financial stability (Cowan & Cowan, 1995). It is likely that this stress is exacerbated among parents with an unintended birth, because their transition to parenthood was not planned and they do not have the strong foundation of support and stability that is enjoyed by low-risk parents or parents with intended births. To that end, I will explore the mediating effects of union status, social support, self-efficacy, and financial strain.

Union status and partner support might explain some of the association between pregnancy intentions and well-being. Unintended birth is more common among unmarried parents (Finer & Henshaw, 2006; Musick, 2002), which provides some insight into the relationship context of an unintended birth. In 2001, 54% of births to cohabiting couples were unintended, compared to 26% of births to never married parents, and 20% of births to married parents (Finer & Henshaw, 2006). Although cohabiting couples may provide more support and stability than a single parent home, these relationships are less stable than marriages and are more likely to dissolve (Edin, England, Shafer, & Reed, 2007; Manning, Smock, & Majumdar, 2004; Wu & Musick, 2008), which has implications for the well-being of both the parents and their children. Further, unintended birth is associated with less partner support and relationship satisfaction, even within the context of a marriage. The transition to parenthood is associated with a decline in marital satisfaction overall (Twenge, Campbell, & Foster, 2003), but this is exacerbated if the couple did not agree to have a child (Cowan & Cowan, 2002; Cox, Paley,

Burchinal, & Payne, 1999). For example, research has demonstrated that relationship happiness and co-parenting support is diminished among fathers who characterized their partners' pregnancy as unintended (Bronte-Tinkew et al., 2007; Bronte-Tinkew et al., 2009). Thus, the relationship context might account for some of the effect of pregnancy intentions on parental well-being.

Social support might also influence the relationship between intentions and well-being. In this study, social support refers to both the frequency of social interaction with and assistance received from parents, friends, neighbors. The transition to parenthood is associated with many changes to social relationships both inside and outside of the immediate family (Cowan & Cowan, 1992), which can be positive or negative. On the one hand, children may enhance social relationships between parents and other adults, facilitate more contact with relatives, and broaden social networks (Gallagher & Gerstel, 2001). Indeed, both married and unmarried new parents report higher levels of social integration compared to childless adults (Nomaguchi & Milkie, 2003). On the other hand, children might constrain opportunities for adult interaction and social activities and pull parents out of touch with their existing social contacts, especially when childrearing is time-intensive (Fischer & Oliker, 1983; Munch, Smith-Lovin, & McPherson, 1997). Parents with unintended pregnancies may be more likely to experience these negative effects. According to the life course framework, inappropriately timed milestones tend to be more stressful and less socially supported (Elder & Shanahan, 2006). Many parents with unintended pregnancies receive less social support in general (Brown & Eisenberg, 1995).

Self-efficacy, the belief that one's actions will have the intended effect and that one has control over one's life, is another potential pathway between pregnancy intentions and well-being. Having an unintended birth might also be associated with feelings of powerlessness

because, by definition, it is an undesired event that might have occurred despite efforts to prevent it (Barber et al., 1999). In turn, feelings of powerlessness are strong determinants of anxiety, depression, and distress (Mirowsky & Ross, 1986). Therefore, it is possible that an unintended birth creates feelings of low self-efficacy that in turn stimulate depression and diminished well-being.

Financial strain may also account for the relationship between pregnancy intentions and well-being. There are enormous financial costs associated with raising a child, and economic strain can be a significant stressor (Ross & Van Willigen, 1996). The U.S. Department of Agriculture estimates that annual child-rearing expenses range from $11,610 to $13,480 per year on average, although this figure varies by household income. Among low-income families, child rearing expenditures account for 24% of their pre-tax income (Lino & Carlson, 2009). An unintended pregnancy can disrupt education or career plans, and create unexpected financial burdens (Abma & Mott, 1994). Because low-educated women are more likely to have unintended pregnancies (Finer & Henshaw, 2006; Musick et al., 2009), financial strain might be particularly salient among this group given their lower earning potential.

METHOD

Data and Sample

This study uses data from the first two waves of the National Survey of Families and Households (NSFH), collected in 1987-1988 (wave 1) and 1992-1994 (wave 2) (Bumpass & Sweet, 1997). The NSFH has a national probability sample with oversamples of minorities and single-parent families, families with step-children, cohabiting couples and recently married persons (Sweet & Bumpass, 1996). Information about adult well-being was collected only among main respondents in both waves, so the current analysis does not draw upon data

collected from spouses. Gender comparisons in this study therefore compare men and women from different households.

One drawback of the NSFH is that the data are somewhat dated, and may not accurately represent contemporary family life. Nonetheless, the data are well-suited to answer the questions set out in this study, and more recent studies do not provide the same metrics of pregnancy intentions and parental well-being. One exception is the National Longitudinal Survey of Youth (NLSY79), but the measures of well-being are only available at age 40. Therefore, the NLSY may provide an estimate of long term well-being but cannot speak to the effect of the transition to parenthood on well-being.

To leverage the longitudinal nature of the data and isolate the effects of pregnancy planning on adult outcomes, I create a nonequivalent control group sample design by selecting respondents who were age 17-44 and childless at the first wave. This sample restriction ultimately creates a "control" group (those who remain childless at wave 2) and a "treatment" group (those who have children at wave 2). Although this sample selection is not a true experimental design because the treatment is not randomly assigned, it is a good option for evaluating the effects of unintended pregnancies on adult well-being using non-experimental data.

The "control" group of nonparents allows me to determine whether changes in well-being are associated with parenthood or with temporal changes in well-being in the population. Although the childless group provides an important point of comparison, it is not without drawbacks. Namely, heterogeneity within this group could confound the comparison. For example, this group might include people who are involuntarily childless, people who will eventually become parents, or people who had an unintended pregnancy that was terminated.

Among those childless at wave 2, about half indicated they would like to have a child sometime in the future, 30% said they would not like to have a child in the future, and about 6% indicated that either they or their spouse were sterilized (the remaining did not know or refused to answer). Nonetheless, the comparison group still allows us to see if an unintended *birth* is associated with parental well-being.

This sample selection also allows me to focus on the transition into new parenthood. The birth of a first child represents a distinct change in life stage and roles, as one becomes a parent for the first time, and might have a different impact on well-being than subsequent births. Recall the finding that first births improve mother's subjective well-being, while subsequent births reduce it (Kohler et al., 2005). Further, limiting the sample to first births avoids confounding the results with heterogeneity among unintended births.

The original sample includes 13,007 respondents; 10,211 were re-interviewed in the second wave. I removed respondents who already had a child at wave 1 (removed n=9,532) or did not have a valid response to whether they had given birth or had a child since wave 1 (removed n=462). I also removed respondents who had step-children (removed n=129) or adopted children (removed n=53). I further limited the sample to respondents who were age 17-44 at wave 1 (removed n=787). After removing respondents who did not report their child's age (removed n=2) or whose child had died (removed n=5), the remaining sample is n=2,037. Of the 2,037 respondents, n=955 are female and n=1,082 are male. All models are run separately among men and women because I expect that the relationship between parenthood and pregnancy intentions will vary by gender, as well as the meditational pathways that help to explain these relationships.

Measures and Analysis

Dependent variables. My analyses include two measures representing different dimensions of adult well-being: depression and general happiness. These measures represent both distress and positive subjective well-being. Put another way, they measure the costs and benefits of children in terms of well-being. Although these concepts are related, having both a positive and negative measure of well-being might address the paradox of "all joy and no fun," which characterizes the tension between research on the negative effects of parenting on well-being and normative expectations about the benefits of parenthood.

Depression is a 12-item scale derived from the Center for Epidemiological Studies Depression scale (CES-D) (Radloff, 1977), and is measured at wave 1 and wave 2. Respondents were asked how many days in the previous week they: (a) felt bothered by things that don't usually bother you; (b) did not feel like eating; (c) felt that you could not shake off the blues; (d) had trouble keeping your mind on what you were doing; (e) felt depressed; felt that everything you did was an effort; (f) felt fearful; (g) slept restlessly; (h) talked less than usual; (i) felt lonely; (j) felt sad; and (k) felt you could not get going. The items were averaged into an overall depression scale (Nomaguchi & Milkie, 2003). The range is 0-7; Cronbach's alpha is 0.93 at wave 1 and 0.92 at wave 2.

General happiness is a single-item measure that asks, "Taking things all together, how would you say things are these days?" and ranges from 1 (*very unhappy*) to 7 (*very happy*).

Independent variables. Pregnancy intentions are measured with dummy variables that indicate whether the respondent's first birth was an *intended* or *unintended* pregnancy (omitted category is childless). This information is collected using the wave 2 fertility history module, which asks respondents to provide a retrospective report of their fertility behavior. Respondents are first asked, "Just before [your] pregnancy began, did you yourself want to have (a/another) baby at

SOME time?" Respondents who answer no are classified as having an "unwanted" pregnancy. Respondents who answer yes are asked, "Did that pregnancy occur sooner than you wanted, later than you wanted, or at about the right time?" Respondents who answer "sooner than you wanted" are classified as having a "mistimed" pregnancy. Respondents who answer that it happened at "about the right time" or "later than [they] wanted" are classified as having an "intended" pregnancy. In this study, I combine unwanted and mistimed pregnancies into a general category that indicates an unintended pregnancy.

Although the use of pregnancy intention measures is common in demographic research, there is some debate about their reliability and meaning. First, they may suffer from retrospective reporting bias (Bachrach & Newcomer, 1999; Sable, 1999). Parents who carry an unintended pregnancy to term may be less likely to later report that their child was not planned regardless of how they felt when the child was conceived. Second, the measure may conflate intentionality or planning with affective sentiments that convey desire, happiness or dismay about pregnancy. Planning relates to life goals, preparation, and education, while the affective dimension may be related to one's community and values about childbearing (Bachrach & Newcomer, 1999). Even if a pregnancy is unintended, parents may feel joyful and happy about the birth. Further complicating the issue, the intention variables might over-simplify the concept of pregnancy planning by measuring it as a binary state. This overlooks the idea of ambivalence that is described in qualitative work among low-income mothers with nonmarital births (Edin & Kefalas, 2005; Edin et al., 2007).

Despite these concerns, the current intention measures can provide important insights to the effect of intended or unintended pregnancy on well-being. These measures are related to child outcomes in predictable ways (Baydar, 1995; Brown & Eisenberg, 1995). The sample of

new parents in this analysis may limit retrospective bias associated with a longer time lapse between the actual birth and data collection. If there is additional bias due to changing feelings about the pregnancy once the child is born (i.e., *ex post* rationalization), the tendency may be to underreport unintended pregnancies (Trussell, Vaughan, & Stanford, 1999). Thus, the estimates of unintended pregnancy will be conservative. Further, research has found that retrospective accounts of pregnancy intentions do not bias statistical estimates of the effects of unintended fertility (Joyce, Kaestner, & Korenman, 2002). The quantitative measures of pregnancy intentions available in the NSFH can therefore inform our understanding of the relationship between parenthood and well-being.

Control Variables. I adjust for several background characteristics that may be related to the pregnancy intention and well-being variables. I control for race (non-white, with non-Hispanic white as referent) and respondent's age because older parents may differ in pregnancy intentions and parenting experiences relative to younger parents. Pregnancy intentions are also related to education (Musick et al., 2009), so I include dummy variables for educational attainment at wave 1 (less than high school, high school graduate, and some college, with college graduate or grad school as the referent). Employment at wave 1 is categorized according to hours worked in the past week. The categories are unemployed (omitted, 0 hours), part-time employment (1-34 hours), and full-time employment (35 or more hours). Respondents who indicated their work hours varied (n=53 at second wave) were recoded to the hours worked in the previous week. I also include a continuous variable for family income, reported in thousands of dollars.

Mediating Variables. In addition to controls, I add variables that may mediate the relationship between pregnancy intentions and well-being outcomes. Informed by the literature discussed

previously, I add variables that measure the relationship context, social support, self efficacy, and financial strain.

Union status represents relationship context; unfortunately, relationship satisfaction questions are only asked of respondents who were married or cohabiting at the time of the survey. Among parents, dummy variables for single, cohabiting, and separated/divorced/widowed respondents represent union status at first birth (married is the referent). I constructed these variables using the respondent's retrospective union history report and the child's date of birth. For respondents who remained childless across waves, I use the union status they reported at wave 1.

Social support is represented with three different types of social integration: attendance at religious services, social interaction, and help received from social networks. *Attendance at religious services* might represent access to social networks and communities that can provide support to new parents (Dew & Wilcox, 2011). This measure might also serve as a proxy for religious faith, and give some idea about ideological orientations toward childbearing and pregnancy intentions. Respondents were asked to report how often they attend religious services. I converted the responses to a continuous measure representing attendance per month (range: 0-60.8). A categorical specification of this measure yields similar results in analyses.

Social interaction is a 3-item scale that measures how often the respondent had social interaction with relatives, neighbors, or friends who live outside of the neighborhood in the past year, and is measured at wave 2. Respondents indicate the frequency using a scale that ranges from 0-4 (0=*never*, 1=*several times a year*, 2=*about once a month*, 3=*about once a week*, 4=*several times a week*). Items were summed and the overall social interaction scale ranges

from 0-12. Cronbach's alpha is 0.29 at wave 2. This measure is also used by Nomaguchi and Milkie (2003), although they employ it as a dependent variable.

Help received from social network is derived from questions that ask respondents whether they have received help with (a) child care, (b) transportation, (c) work around the house, or (d) advice in the past month. This question asks about unpaid help specifically. Respondents were asked to indicate whether they had received help in these areas from (a) friends/neighbors, (b) parents/children, (c) brothers/sisters, or (d) other relatives. Responses to these questions were summed to get a total count of the help received from their social network at wave 2 (e.g., if someone received help with child care from friends/neighbors and parents/children, and help with transportation from parents/children, they receive a score of "3"). The values range from 0-16; Cronbach's alpha is 0.47 at wave 2.

Self- efficacy is a single-item measure that is collected at both wave 1 and wave 2; respondents were asked how much they agreed or disagreed with the statement "I have always felt pretty sure my life would work out the way I wanted it to." The question uses a 5-point agreement scale, which was reverse-coded so higher values indicate higher levels of self-efficacy. This item has also been used in other studies of adult well-being to represent self-efficacy (McLanahan & Adams, 1989; Nomaguchi & Milkie, 2003).

Financial strain is a single item measured in wave 2 that asks respondents "How often do you worry that your total family income will not be enough to meet your family's expenses and bills?" Higher values represent higher frequency of financial concern (1=*never*, 2=*hardly ever*, 3=*once in a while*, 4=*often*, 5=*almost all the time*). This measure may gauge financial burden or material hardship more accurately than traditional proxies such as income. Although income is a good measure of gross resources, it does not reflect net cash flow.

Unfortunately, the sample of parents with young children precludes analysis of other mediators such as time investment in parenting, parent-child interactions, and complications in child care arrangements, because these data were collected only among parents of older children. However, it is plausible that these factors play a role in mediating the effect of intentions on well-being.

Missing data are imputed with multiple imputation using chained equations, using the ICE commands for STATA (Royston, 2004). The amount of missing data was most sizable for self-reported happiness (15% at wave 1, 14% at wave 2), followed by income (9%), social interaction (5% at wave 1, 2% at wave 2), efficacy (4% at wave 1, 2% at wave 2), financial strain (2%), religion (2%), and depression (2% at wave 1 and 1% at wave 2). Other variables were missing data for 1% of the sample or less. The models are not sensitive to the number of imputations, and the results of models with imputed data are not substantively different from models without imputed data. Including a dummy variable that indicates whether a respondent has imputed data did not alter the results of models (results not shown).

Analytic Strategy

To explore the relationship between pregnancy intentions and well-being, I estimate ordinary least squares (OLS) regressions using the regressor variable method (see equation (1) below) (Allison, 1990). Y_{i2} is the well-being outcome of respondent i at wave 2, X_{1i2} is a vector of dummy variables indicating pregnancy planning (intended or unintended), Z_{i1} is a vector of controls at wave 1, Y_{i1} is the wave 1 measure of the dependent variable, and e is the error term. Standard errors are adjusted to account for clustering (i.e., the fact that the wave 1 and wave 2 measures of well-being are not independent).

$$Y_{i2} = \beta_0 + \beta_1 X_{1i2} + Z_{i1}\gamma + Y_{i1} + e \qquad (1)$$

The regressor variable approach examines the effect of pregnancy intentions on well-being at wave 2 while adjusting for the measurement of well-being at wave 1, prior to having children. In considering the effect of pregnancy intentions on well-being, a concern is that individuals may select into pregnancy planning on the basis of their well-being. For example, an adult with depression may be more likely to have an unintended pregnancy. Adjusting for the wave 1 measure of the dependent variable helps to address this concern. I estimate models separately by gender because I expect that pregnancy intentions will have different effects among men and women.

Another approach to analyze nonequivalent control groups is a change score model. The change score method regresses the difference in the dependent variable from wave 1 to wave 2 (Y_2-Y_1) on X (pregnancy intentions) and the difference between wave 2 and wave 1 measures of independent variables (Z_2-Z_1). It removes unobserved heterogeneity that may be associated with both pregnancy intentions and well-being outcomes. Although both approaches are suited to examining the effect of some "treatment" in nonequivalent control groups, in this case the regressor variable method may be more appropriate. The regressor variable model is preferable to a change score approach if well-being at wave 1 has a causal effect on well-being at wave 2, or if pregnancy intentions are correlated with the period-specific components of well-being at wave 1 (i.e., well-being causes selection into planned or unintended pregnancy) (Allison, 1990).

I test whether the hypothesized pathways mediate, or account for, the relationship between pregnancy intentions and well-being by first regressing the mediator on pregnancy intentions, regressing well-being on pregnancy intentions, and regressing well-being on both pregnancy intentions and mediators (Baron & Kenny, 1986). There is evidence for mediation if the mediator predicts pregnancy intentions, well-being predicts pregnancy intentions, and the

coefficient for the effect of pregnancy intentions on well-being is attenuated when including the mediator in the model.

RESULTS

Descriptive results. Descriptive statistics for the independent, control, and mediating variables are shown in Table 1. At wave 2, 64% of women remain childless (n=609), 26% had an intended birth (n=244), and 11% had an unintended birth (n=102). Among men, 68% remained childless at wave 2 (n=735), 22% had an intended birth (n=235), and 10% had an unintended birth (n=112).

—Table 1 here—

Figure 1 shows the uncontrolled association between average well-being, parental status, and pregnancy intentions over time. At wave 1, depression symptoms are highest among men and women who will eventually have an unintended birth. At wave 2, depression symptoms among childless women and mothers with an unintended birth are similar, while mothers with an intended birth have slightly lower depression ($p<.05$). Among men, fathers with an intended birth experience less depression than childless men, while fathers with an unintended birth experience more depression ($p<.05$). The wave 1 measure of happiness is highest among men and women who eventually have an intended birth. It is noteworthy that happiness declines over time for both men and women with intended births, while childless men and women experience a slight increase in happiness ($p<.05$). These descriptive statistics also highlight the importance of controlling for the wave 1 measure of well-being in estimating the effect of pregnancy intentions on well-being.

—Figure 1 here—

Bivariate results. The first step in this analysis is determining whether pregnancy intentions clarify the relationship between parenthood and well-being. Table 2 shows these bivariate results. In the naïve estimate of the effect of parenthood on depression on women (model 1), mothers have statistically similar levels of depression compared to childless women. It is clear from models 2 and 3 that this result obscures a strong negative association between intended birth and depression. Note that a negative coefficient predicting depression represents a positive result for well-being, because it indicates a *decrease* in depression symptoms. In model 4, parenthood is not associated with increases in happiness relative to childless women. However, once we consider the pregnancy intentions, having an intended birth is associated with an increase in happiness (model 5), although this effect is negated when taking the wave 1 measure of happiness into account (model 6).

Among men, being a father is not associated with depression relative to childless men (model 7). However, men with an unintended birth have significantly higher depression relative to childless men (model 8), and this result holds when taking into account the level of depression measured at wave 1 (model 9). Fathers are happier than childless men (model 10), although this result is clearly driven by the positive association between intended births and happiness (models 11 and 12).

—Table 2 here—

Multivariate results. Multivariate models predicting depression and happiness among men and women are presented in Table 3. Model 1 shows that mothers with intended first births experience less depression than their childless counterparts, adjusting for basic controls such as age, race, education, income, employment, and the wave 1 measure of depression. Mothers with unintended births do not experience any more or less depression relative to childless women.

Model 2 shows that happiness among mothers with intended and unintended first births is similar to childless women. Although the coefficient for unintended births suggests a negative effect, it is not statistically significant.

Models 3 and 4 present the results among men. Fathers with an unintended birth experience more depression relative to childless men, while fathers with intended births experience more happiness. This is an interesting finding because it suggests that while women are not necessarily harmed by unintended pregnancies in terms of experiencing more depression, men do some experience negative effects. The results among men and women are statistically different by gender in the models predicting depression, but not happiness (results not shown).

—Table 3 here—

To explore potential mechanisms of depression among women, I add variables related to union status, social support, psychological perceptions of self-efficacy, and financial strain. These results are presented in table 4. I do not present mediation models predicting happiness among women because intentions are not statistically associated with happiness for this group. All models control for the respondent's age, race, education, income, employment, and wave 1 measure of dependent variable, although the table is truncated and does not display these controls.

The relationship between union status and depression is estimated in model 1. Cohabiting is associated with increased depression relative to women who are single and never married. Adjusting for union status does not strongly attenuate the negative relationship between intended birth and depression, so there is no support for the initial hypothesis that union status mediates the relationship between intentions and well-being.

To explore the effect of social support, I test whether attendance at religious services, social interaction, or help received from social networks can account for differences in depression among parents with intended and unintended births. Attendance at religious services is not statistically related to depression among women (model 2). Controlling for religion does not affect the estimated effect of intended pregnancy on depression or happiness. Thus, social support facilitated by religious attendance does not mediate the relationship. This finding is generally consistent with recent research that found no effect of religious attendance on marital satisfaction among parents (Dew & Wilcox, 2011).

Social interaction is associated with a decrease in depression among women, and including this measure in the model slightly attenuates the coefficient for intended birth and renders it statistically insignificant (model 3, Table 4). Further, intended pregnancy predicts increases in social interaction (see Appendix Table 1), which provides support for a meditational relationship. Although the magnitude of the attenuation is small, social interaction might be explaining a small part of the initial association we observe between depression and intended pregnancy relative to childless women.

Help received from social networks is associated with slightly higher levels of depression among women (model 4). This result is counter-intuitive. In this case, help might be associated with poorer well-being because depressed people seek and receive more help. It is also possible that mothers with an unintended birth need more help; once I adjust for help received, the coefficients on both intended and unintended pregnancy become larger and statistically significant.

Now turning to model 5, each one-unit increase in perceptions of self-efficacy, equivalent to about one standard deviation, is associated with a decline in depression. This relationship

holds when controlling for the wave 1 measure of self-efficacy. However, there is no support for a mediating relationship because the coefficients on intended and unintended pregnancy are not attenuated once self-efficacy is introduced into the model.

As expected, financial strain is associated with increases in depression (model 6). Once I adjust for financial strain, the coefficients for intended and unintended birth become negative and statistically significant relative to childless adults. Thus, once we account for financial strain mothers with both intended and unintended births have less depression relative to childless women. It seems that financial strain is positively linked to both unintended and intended fertility. When I control for financial strain, the transition to parenthood is associated with less depression (i.e., financial strain is a suppressor variable).

Results from the full model that includes all hypothesized mediators are shown in model 7. Once I include all mediators, both intended and intended pregnancies are associated with declines in depression. The adjusted R-squared suggests that including all of the mediators improves the fit of the model slightly, although most of the variance is explained by financial strain.

—Table 4 here—

Results for men are presented in Table 5. The association between unintended birth and increased depression persists across almost all models except the ones controlling for self-efficacy and financial strain. Coefficients for intended and unintended pregnancy are statistically different from women across all models predicting depression, but are not statistically distinguishable from women when predicting happiness (results not shown).

The estimated association between union status and depression is presented in model 1. Although marriage is associated with a decrease in depression relative to being single, this

association does not account for the relationship between intentions and depression. Conversely, union status does seem to account for the initial association between intended birth and increased happiness among men (model 8), although the union status coefficients are not themselves statistically significant. This is generally consistent with findings from Kohler et al. (2005); men seem to derive more well-being from partnerships than fertility. Because union status explains the relationship between intentions and happiness among men, I will not discuss the remaining mediating models for happiness among men in the text.

Turning to the effect of social support, religious attendance is associated with decreases in depression (model 2), but does not account for the relationship between depression and intentions. Social interaction does not have a significant effect on depression among men (model 3). Help received from social networks is associated with an increase in depression (model 4), but it does not influence the relationship between intentions and depression. Taken together, all measures of social support fail to explain increased depression among fathers with an unintended birth, relative to childless men.

Conversely, self-efficacy plays an important role in the relationship between unintended pregnancy and depression among men. Self-efficacy is associated with a decrease in depression (model 5). Further, unintended pregnancy predicts a decline in self-efficacy (see Appendix Table 1), and controlling for self-efficacy attenuates the relationship between unintended birth and depression. This suggests that self-efficacy mediates the effect of unintended birth on depression among men.

Financial strain is similarly associated with an increase in depression among men (model 6). Once we take financial strain into account, the relationship between unintended birth and depression is attenuated, which suggests that financial strain might be responsible for some of

this initial association. There is evidence of a mediation relationship, because pregnancy intentions also predict financial strain (see Appendix Table 1).

The full model with all mediators is presented in model 7. Pregnancy intentions are not related to depression in this model, although the initial association between unintended birth and increased depression is largely explained by self-efficacy. The model that accounts for self-efficacy (model 5) has an adjusted R^2 of .244, compared to the adjusted R^2 of .278 in the full model, which suggests that most of the variance is explained in model 5. Note that in the full model predicting happiness, (model 14), fathers with intended births experience increases in happiness compared to childless men. This is also likely caused by controlling for financial strain and efficacy.

—Table 4 here—

DISCUSSION

The results of this study suggest that pregnancy intentions are an important consideration in understanding the link between parenthood and depression. Naïve estimates of well-being among all parents obscure important differences in well-being by pregnancy intentions. Namely, intended births are associated with improved well being, in terms of decreased depression (among women) and increased happiness (among men). Unintended births are associated poorer well-being, with increases in depression among men. Thus, a consideration of pregnancy intentions might resolve some of the tension between research on the negative effect of parenthood and well-being and our normative expectations of parenthood. Births that occur within the "normative" context of planned childbearing are generally associated with positive well-being, while births that occur in a non-normative context are associated with poorer well-being.

This study also reveals notable gender differences in well-being among parents. Specifically, I find that mothers with an intended first pregnancy experience less depression than their childless peers. This finding is consistent with research findings that new mothers tend to be less vulnerable to depression than their childless counterparts (Kohler et al., 2005; Nomaguchi & Milkie, 2003). Although it may seem inconsistent with the bulk of research that finds poorer well-being among parents in general, this is likely explained by this study's focus on first births. Mothers with an unintended pregnancy do not experience any more depression than their childless peers, although they do not enjoy the same decrease in depression associated with intended pregnancy. This finding suggests that although mothers with unintended pregnancies are not as well-off as those with intended pregnancies, unintended pregnancy does not carry as large a penalty for well-being as we might have expected. It also adds an additional nuance to previous findings by Nomaguchi and Milkie (2003), because it points out that only a *select* group of new mothers are less susceptible to depression-- mothers with an unintended pregnancy do not enjoy this benefit.

Conversely, fathers with an unintended first birth do experience more depression relative to childless men. This comparison highlights an important gender difference. Although women do not appear to be harmed by an unintended birth, fathers do experience a decline in well-being. This finding is particularly concerning given studies that demonstrate a relationship between unintended births, depression, and parenting involvement among fathers (Bronte-Tinkew et al., 2007; Bronte-Tinkew et al., 2009).

This study also explored the pathways through which pregnancy intentions might be related to well-being. I argued that pregnancy intentions are associated with parental well-being because of the social context in which these births are likely to occur. Informed by extant

research, I hypothesized that parents with unintended births would experience worse well-being due to less partner support (Bronte-Tinkew et al., 2009; Cox et al., 1999), social support (Brown & Eisenberg, 1995; Elder & Shanahan, 2006; Schoen, Kim, Nathanson, Fields, & Astone, 1997), self-efficacy (Mirowsky & Ross, 1986), and financial strain (Abma & Mott, 1994). I found evidence that the relationship between intentions and well-being is partially mediated by social interaction among women. In other words, having an intended pregnancy is associated with an increase in social interaction, and social interaction accounts for at least part of the decrease in depression observed among women with intended pregnancies. Among men, union status, self-efficacy and financial strain mediate the relationship. Having an unintended birth is associated with lower self-efficacy and increased financial strain, each of which account for part of the increase in depression among men with unintended births.

Taken together, the social context of intended births seems to explain positive effects of parenthood among women, while relationship, psychological, and financial contexts explain the negative effects among men with unintended births. This finding has implications for policy and social programs aimed at facilitating the transition to parenthood because it suggests two different mechanisms through which men and women experience the positive and negative effects of parenting. Programs designed for women might focus on building community and social interaction, while programs for men might focus on relationship development, reducing feelings of powerlessness, or alleviating financial strain.

This analysis provides some key insights into gender differences in the effects of unintended births, but some questions remain unanswered. Why are men affected differently by unintended pregnancy? One reason men have a more negative experience with unintended births may be due to the fact that they feel they have less control over decisions about the resolution of

unintended pregnancies (i.e., abortion, adoption, or parenting) (Johnson & Williams, 2005). Thus, an unintended birth is more often the result of purposive decision-making by women. This rationale is supported by the finding that perceptions of self-efficacy, the feeling of having control over one's life, explain some of the association between unintended birth and depression among men. Further research is needed to fully disentangle the mechanisms behind these gender differences in well-being.

In sum, this study builds upon previous research by exploring the effects of pregnancy intentions on parental well-being. The findings suggest that pregnancy intentions are an important concept that can clarify the relationship between the transition to parenthood and well-being. The findings also point out that fathers are particularly vulnerable to deleterious effects of unintended childbearing. This is an important consideration given the high rate of unintended childbearing the United States and increasing rates of nonmarital childbearing. Findings from this study also have far-reaching implications for inequality given that unintended pregnancies are more concentrated among relatively disadvantaged groups (Guzman et al., 2010; Musick, 2002; Musick et al., 2009). Poor well-being might further limit the resources these parents, particularly fathers, can confer to their children, and contribute to increasingly inequality.

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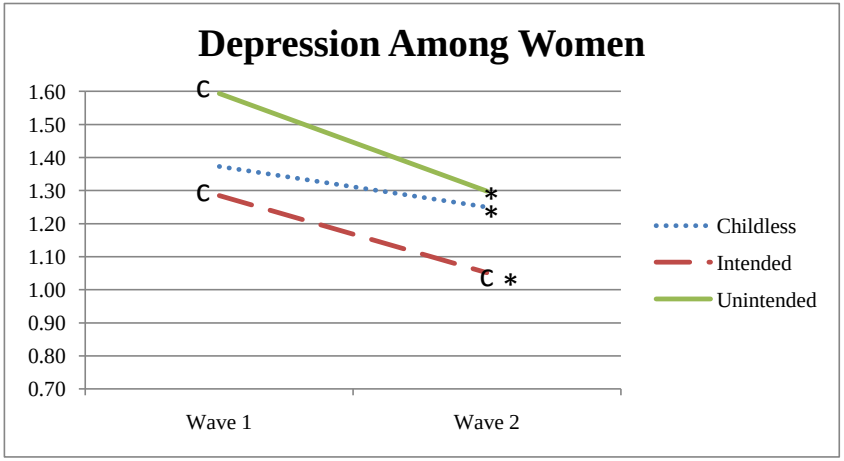
Table 1. Descriptive Statistics (Imputed) for Childless Men and Women Age 17-44 at NSFH 1

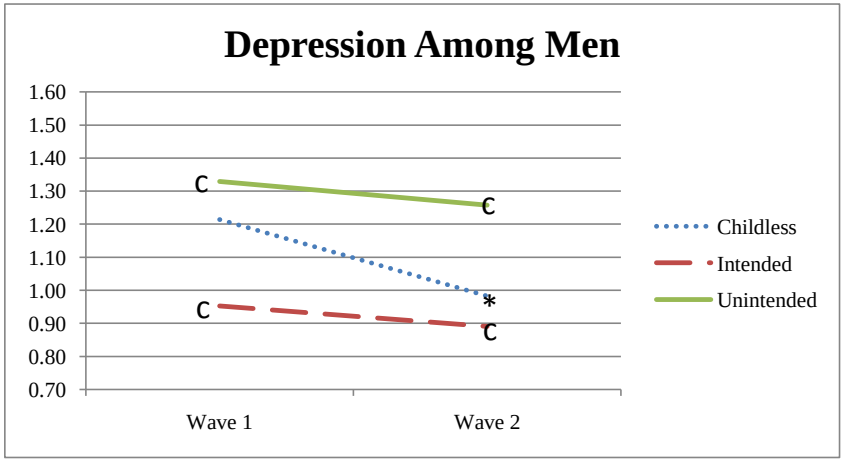
	Women (n=955)		Men (n=1082)		
	Proportion or Mean	Std. Dev.	Proportion or Mean	Std. Dev.	
Measured at Wave 1					
Non-white	0.21		0.21		
Less than high school	0.06		0.08		***
High school/GED	0.30		0.32		*
Some college	0.32		0.30		***
College or graduate degree	0.31		0.30		
Unemployed	0.17		0.13		***
Part time work	0.15		0.09		***
Full time work	0.68		0.77		***
Household income (in thousands)	26.35	31.00	26.23	43.98	
Depression (wave 1)	1.37	1.39	1.17	1.28	***
Happiness (wave 1)	5.46	1.26	5.36	1.20	***
Efficacy (wave 1)	3.61	0.98	3.60	0.97	
Measured at first birth among parents (between waves 1 and 2)					
Measured at Wave 1 among childless					
Single	0.37		0.47		***
Married	0.46		0.39		***
Separated, divorced, or widowed	0.08		0.05		***
Cohabiting	0.09		0.09		
Measured at Wave 2					
Childless	0.64		0.68		***
Intended birth	0.26		0.22		***
Unintended birth	0.11		0.10		
Respondent's age	33.02	6.25	33.26	6.20	**
Depression (wave 2)	1.20	1.24	0.99	1.12	***
Happiness (wave 2)	5.44	1.22	5.36	1.21	***
Religious attendance (per month)	2.02	3.21	1.55	2.89	***
Help received	3.07	2.13	2.61	2.09	***
Financial Strain	3.09	1.17	2.93	1.11	***
Social interaction	5.86	2.06	5.87	2.09	
Efficacy (wave 2)	3.67	0.99	3.70	0.94	*

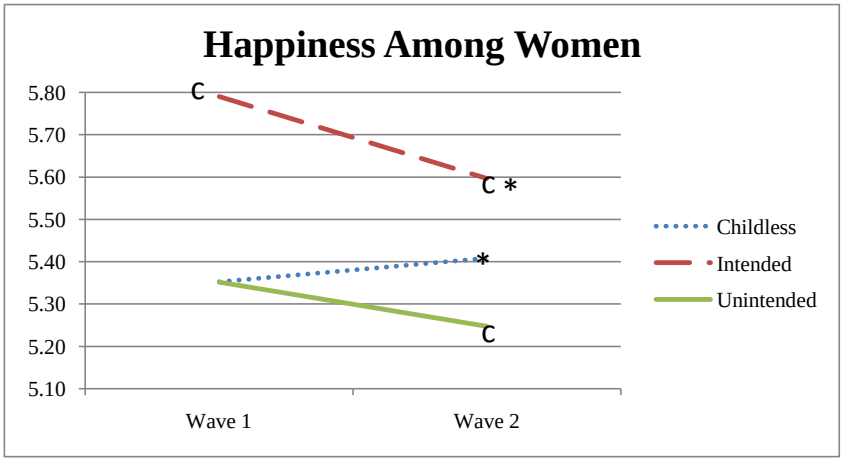
Asterisks indicate statistical difference between men and women

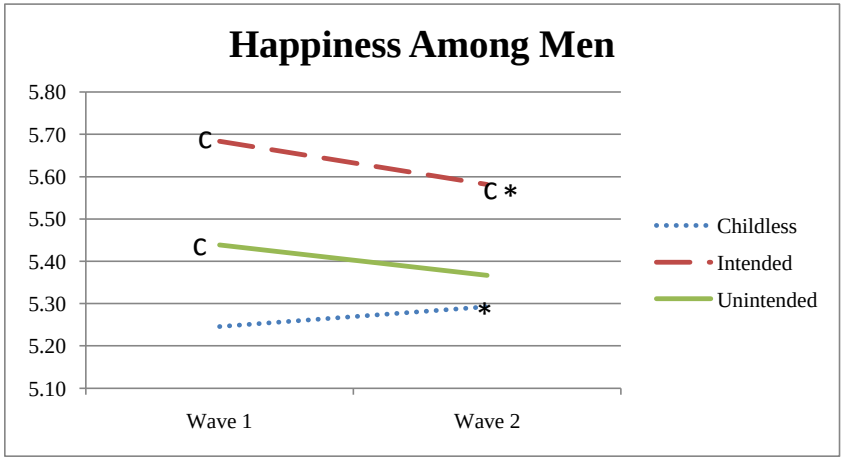
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Figure 1. Mean depression and happiness over time by parental status and pregnancy intention









"c" indicates statistically different from childless at p<.05
* indicates wave 1 statistically different from wave 2 at p<.05

Table 2. Regression Coefficients Predicting Depression and Happiness among Men and Women (bivariate results)

	Women						Men					
	Depression			Happiness			Depression			Happiness		
	Parent (1)	Intentions (2)	Time 1 control (3)	Parent (4)	Intentions (5)	Time 1 control (6)	Parent (7)	Intentions (8)	Time 1 control (9)	Parent (10)	Intentions (11)	Time 1 control (12)
Parent	-0.124			0.080			0.024			0.220***		
	(0.081)			(0.085)			(0.072)			(0.082)		
Intended birth		-0.197**[a]	-0.169**		0.184*[a]	0.067		-0.094[a]	-0.016[a]		0.288***	0.200**
		(0.088)	(0.082)		(0.094)	(0.093)		(0.078)	(0.075)		(0.091)	(0.090)
Unintended birth		0.049	-0.020		-0.169	-0.167		0.272**	0.237**		0.076	0.038
		(0.129)	(0.121)		(0.137)	(0.134)		(0.124)	(0.116)		(0.123)	(0.124)
Wave 1 state			0.318***			0.275***			0.301***			0.203***
			(0.034)			(0.036)			(0.038)			(0.040)
Constant	1.250***	1.250***	0.813***	5.410***	5.410***	3.939***	0.984***	0.984***	0.619***	5.292***	5.292***	4.226***
	(0.053)	(0.053)	(0.058)	(0.053)	(0.053)	(0.207)	(0.042)	(0.042)	(0.049)	(0.048)	(0.048)	(0.218)
Observations	955	955	955	955	955	955	1,082	1,082	1,082	1,082	1,082	1,082
Adjusted R-Squared	0.001	0.003	0.130	0.000	0.005	0.083	-0.001	0.006	0.124	0.006	0.008	0.047

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

[a] Intended and unintended coefficients significantly different at p<.05

Table 3. Regression Coefficients Predicting Depression and Happiness among Men and Women (basic controls)

	Women		Men	
	Depression	Happiness	Depression	Happiness
	(1)	(2)	(3)	(4)
Intended birth	-0.190**	0.050	0.005	0.219**
	(0.087)	(0.101)	(0.077)	(0.093)
Unintended birth	-0.133	-0.185	0.207*	0.035
	(0.127)	(0.135)	(0.116)	(0.128)
Respondent's age	-0.005	-0.004	0.007	-0.002
	(0.007)	(0.007)	(0.006)	(0.007)
Non-white	0.218**	-0.171	0.167*	-0.033
	(0.108)	(0.113)	(0.085)	(0.101)
Less than high school	0.255	-0.040	0.239	0.025
	(0.184)	(0.217)	(0.149)	(0.175)
High school/GED	0.193*	0.121	0.207**	-0.003
	(0.099)	(0.106)	(0.090)	(0.105)
Some college	0.092	0.011	-0.037	0.205**
	(0.096)	(0.101)	(0.081)	(0.097)
Household income (,000)	0.000	-0.002	-0.001	-0.000
	(0.001)	(0.001)	(0.001)	(0.001)
Part time work	-0.267*	0.051	-0.275*	0.285*
	(0.144)	(0.145)	(0.151)	(0.173)
Full time work	-0.189	0.133	-0.144	0.184
	(0.121)	(0.117)	(0.110)	(0.130)
Wave 1 state	0.296***	0.278***	0.291***	0.200***
	(0.034)	(0.037)	(0.038)	(0.039)
Constant	1.037***	4.017***	0.433*	4.096***
	(0.263)	(0.339)	(0.234)	(0.371)
Observations	955	955	1,082	1,082
Adjusted R-Squared	0.141	0.087	0.139	0.051

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

[a] Intended and unintended coefficients significantly different at p<.05

Table 4. Regression Coefficients Predicting Depression and Happiness among Women (Mediation Models)

	Depression						
	Union Status	Religion	Social Interaction	Help Received	Efficacy	Financial Strain	Full model
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Intended birth	-0.183*	-0.182*	-0.169	-0.236**	-0.177*	-0.295***	-0.318***
	(0.108)	(0.108)	(0.108)	(0.109)	(0.106)	(0.102)	(0.101)
Unintended birth	-0.186	-0.185	-0.170	-0.236*	-0.202	-0.347***	-0.380***
	(0.136)	(0.136)	(0.136)	(0.139)	(0.135)	(0.131)	(0.131)
Married	0.063	0.065	0.047	0.083	0.066	0.086	0.090
	(0.109)	(0.109)	(0.109)	(0.109)	(0.105)	(0.104)	(0.103)
Separated, divor	0.030	0.029	0.036	0.000	0.033	0.045	0.022
	(0.163)	(0.163)	(0.164)	(0.161)	(0.161)	(0.151)	(0.149)
Cohabiting	0.571***	0.568***	0.546***	0.579***	0.480***	0.505***	0.428***
	(0.172)	(0.173)	(0.172)	(0.172)	(0.172)	(0.161)	(0.162)
Religious attendance (per mor		-0.002					0.002
		(0.009)					(0.009)
Social interaction			-0.043**				-0.042**
			(0.019)				(0.018)
Help received				0.053***			0.050***
				(0.018)			(0.019)
Efficacy (wave 2)					-0.176***		-0.123***
					(0.047)		(0.046)
Efficacy (wave 1)					-0.106**		-0.108**
					(0.049)		(0.048)
Financial Strain						0.295***	0.267***
						(0.033)	(0.033)
Wave 1 state	0.291***	0.291***	0.292***	0.287***	0.261***	0.236***	0.214***
	(0.034)	(0.034)	(0.034)	(0.034)	(0.033)	(0.032)	(0.031)
Constant	0.929***	0.932***	1.225***	0.683**	2.086***	0.284	1.354***
	(0.264)	(0.265)	(0.296)	(0.281)	(0.350)	(0.266)	(0.375)
Observations	955	955	955	955	955	955	955
Adjusted R-Squa	0.155	0.154	0.159	0.162	0.187	0.223	0.252

Models control for respondent's age, race, education, income, employment, and time 1 measure of dependent variable.
Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
[a] Intended and unintended coefficients significantly different at p<.05

Table 5. Regression Coefficients Predicting Depression and Happiness among Men (Mediation Models)

	Depression							Happiness						
	Union Status	Religion	Social Interaction	Help Received	Efficacy	Financial Strain	Full Model	Union Status	Religion	Social Interaction	Help Received	Efficacy	Financial Strain	Full Model
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Intended birth	0.140	0.158	0.137	0.103	0.085	0.057	0.017	0.099	0.078	0.104	0.113	0.176	0.201	0.228*
	(0.096)	(0.096)	(0.097)	(0.096)	(0.092)	(0.091)	(0.088)	(0.124)	(0.124)	(0.124)	(0.125)	(0.119)	(0.122)	(0.120)
Unintended birth	0.299**	0.300**	0.299**	0.268**	0.183	0.187	0.090	-0.064	-0.066	-0.063	-0.052	0.087	0.075	0.175
	(0.128)	(0.128)	(0.128)	(0.129)	(0.121)	(0.126)	(0.120)	(0.147)	(0.147)	(0.147)	(0.149)	(0.141)	(0.152)	(0.146)
Married	-0.191**	-0.182**	-0.190**	-0.185**	-0.098	-0.181**	-0.084	0.191	0.182	0.189	0.189	0.085	0.176	0.068
	(0.091)	(0.091)	(0.091)	(0.090)	(0.087)	(0.086)	(0.083)	(0.118)	(0.117)	(0.118)	(0.118)	(0.112)	(0.113)	(0.109)
Separated, divorced, or widow	-0.006	0.018	-0.003	0.002	0.047	-0.096	0.012	0.316	0.285	0.312	0.313	0.254	0.428*	0.305
	(0.190)	(0.191)	(0.190)	(0.189)	(0.182)	(0.195)	(0.186)	(0.211)	(0.212)	(0.211)	(0.211)	(0.197)	(0.219)	(0.205)
Cohabiting	0.030	0.011	0.035	0.037	0.065	0.003	0.037	0.078	0.102	0.070	0.076	0.016	0.095	0.042
	(0.126)	(0.125)	(0.126)	(0.126)	(0.119)	(0.119)	(0.113)	(0.153)	(0.154)	(0.153)	(0.153)	(0.144)	(0.148)	(0.139)
Religious attendance (per month)		-0.028***					-0.028***		0.035**					0.035***
		(0.010)					(0.009)		(0.014)					(0.013)
Social interaction			0.008				0.016			-0.014				-0.026
			(0.018)				(0.017)			(0.019)				(0.018)
Help received				0.039***			0.023*				-0.014			0.009
				(0.015)			(0.014)				(0.017)			(0.016)
Efficacy (wave 2)					-0.380***		-0.351***					0.441***		0.408***
					(0.048)		(0.049)					(0.045)		(0.046)
Efficacy (wave 1)					-0.036		-0.028					0.069		0.063
					(0.047)		(0.045)					(0.044)		(0.043)
Financial Strain						0.231***	0.174***						-0.269***	-0.207***
						(0.034)	(0.033)						(0.039)	(0.038)
Wave 1 state	0.287***	0.287***	0.287***	0.285***	0.241***	0.253***	0.219***	0.199***	0.194***	0.200***	0.199***	0.122***	0.171***	0.105***
	(0.038)	(0.038)	(0.038)	(0.038)	(0.036)	(0.039)	(0.036)	(0.039)	(0.040)	(0.039)	(0.039)	(0.037)	(0.039)	(0.038)
Constant	0.401*	0.475**	0.346	0.201	2.274***	-0.135	1.544***	4.185***	4.123***	4.268***	4.258***	2.414***	5.025***	3.252***
	(0.235)	(0.237)	(0.261)	(0.249)	(0.337)	(0.242)	(0.379)	(0.365)	(0.367)	(0.386)	(0.381)	(0.380)	(0.388)	(0.447)
Observations	1,082	1,082	1,082	1,082	1,082	1,082	1,082	1,082	1,082	1,082	1,082	1,082	1,082	1,082
Adjusted R-Squared	0.141	0.145	0.140	0.145	0.244	0.189	0.278	0.053	0.059	0.053	0.053	0.175	0.109	0.214

Models control for respondent's age, race, education, income, employment, and time 1 measure of dependent variable.

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

[a] Intended and unintended coefficients significantly different at p<.05

Appendix Table 1. Regression Coefficients Predicting Mediating Variables Among Men and Women

	Women					Men				
	Religious attendance	Social Interaction	Help received	Self-Efficacy	Financial Strain	Religious attendance	Social Interaction	Help received	Self-Efficacy	Financial Strain
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Intended birth	0.288	0.324*	0.993***	0.052	0.393***	0.628**	0.347*	0.966***	-0.123	0.368***
	(0.308)	(0.195)	(0.189)	(0.087)	(0.109)	(0.287)	(0.200)	(0.211)	(0.085)	(0.103)
Unintended birth	0.478	0.373	0.949***	0.038	0.567***	0.038	0.042	0.820***	-0.261**	0.524***
	(0.443)	(0.287)	(0.257)	(0.120)	(0.127)	(0.355)	(0.246)	(0.241)	(0.109)	(0.127)
Constant	1.311**	6.906***	4.760***	2.361***	2.551***	2.618***	6.915***	5.233***	2.980***	2.529***
	(0.665)	(0.469)	(0.457)	(0.263)	(0.262)	(0.573)	(0.451)	(0.415)	(0.253)	(0.247)
Observations	955	955	955	955	955	1,082	1,082	1,082	1,082	1,082
Adjusted R-Squared	0.037	0.029	0.057	0.129	0.068	0.029	0.034	0.079	0.116	0.056

Models control for respondent's age, race, education, income, and employment

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

[a] Intended and unintended coefficients significantly different at p<.05