

FAMILY STRUCTURE AND FATHERS' WELL-BEING:
TRAJECTORIES OF MENTAL AND PHYSICAL HEALTH*

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Family Structure and Fathers' Well-Being: Trajectories of Mental and Physical Health

Abstract

A vast literature has assessed the relationship between marital status and health, but very little has tracked changes in health trajectories following family structure transitions, especially among unmarried fathers. Using data from the *Fragile Families and Child Well-Being Study* this paper examines trajectories of paternal mental and physical health, specifically focusing on transitions into and out of residential relationships with the child's biological mother during the first five years after a new birth (N = 4,331). Continuously married fathers are in better mental and physical health than unmarried fathers one year after birth, but the disparity does not increase over time, providing little support for the marital resource model during these years. Timing of family structure change likewise has little impact on the transition's association with health trajectory slopes. The implications of these findings for the marital resource model, as well as selection and causation arguments, are also discussed.

Decades of research have shown a positive association between marriage and health and a negative association between marital dissolution and health (see Waite 1995). Marriage promotes social integration, encourages reciprocal caretaking, and provides intimate, emotional support (Gove, Hughes, and Style 1983; House, Landis, and Umberson 1988) whereas divorce negates these benefits as well as increases levels of stress (Gove and Shin 1989; Lillard and Waite 1995). These associations have been cited in both cross-sectional and longitudinal studies (see Peters and Liefbroer 1997) and, even though the distinction between parents and non-parents is rarely an explicit focus, they appear to hold for parents as well as childless adults. While alternate relationship forms, such as cohabitation, have increased in prevalence in recent decades (Heuveline and Timberlake 2004), marriage is still recognized as the primary social institution responsible for family well-being and is thus the focus of most existing literature.

In conjunction with the increase in cohabiting relationships, the United States has seen a dramatic increase in nonmarital child bearing. In 1970 roughly eleven percent of all births in occurred to non-married couples (Ventura and Bachrach 2000). By 2003 that percentage had increased to 35 (Martin et al. 2005). While we know a good deal about the consequences of nonmarital childbearing for maternal and child wellbeing (Wu and Wolfe 2001), much less is known about how unmarried fathers fare after the birth of a child. Likewise, existing research has not yet fully explored the long-term connection between subsequent family structure changes and paternal health.

The association between family structure and paternal health is important for a number of reasons. First, unmarried fathers are disproportionately drawn from minority and less educated populations (Teachman, Tedrow, and Crowder 2000), making this issue relevant to sociologists concerned with health disparities. Second, unmarried fathers are likely to experience multiple

family structure changes, including cohabitation, over the course of their adult lives (Carlson, McLanahan, and England 2004; Meadows, McLanahan, and Brooks-Gunn 2007) making this issue relevant to sociologists interested in stress and mental health. And finally, understanding the impact of family structure change on paternal health may illuminate possible health benefits that may arise from the healthy marriage and fatherhood initiatives recently funded by Congress (see Future of Children 2005).

This paper uses data from the *Fragile Families and Child Wellbeing Study* (FFCWS) to examine the links between family structure changes and paternal mental and physical health among fathers who have recently had a child, with an emphasis on men who experience a nonmarital birth. The FFCWS is based on a stratified, multi-stage, probability sample of approximately 5,000 births in large cities and includes a large over-sample of nonmarital births. Parents and children are followed from birth until the child is age five. Over-sampling of nonmarital births enables differentiation between different types of unmarried fathers, including those who are cohabiting, as well as different types of union transitions, including transitions out of cohabiting relationships and transitions into marriages. The analyses use latent growth curve models to compare the health trajectories of different groups of unmarried fathers to those of married fathers and to test several hypotheses about the long-term costs and benefits associated with different types of unions and family structure transitions.

BACKGROUND

Marriage and Health

The health benefits associated with marriage including higher self-rated health (Williams and Umberson 2004), reduced mortality rates (Rogers 1995), lower rates of chronic illness and physical disability (Pienta, Hayward, and Jenkins 2000), and better mental health (Marks and

Lambert 1998). Classic sociological theory indicates that marriage is an important social institution with well understood norms and obligations (Durkheim 1897). More recent theoretical work has cited reciprocal caretaking promoted by the institution of marriage as the reason for its protective effects (Gove, Hughes, and Style 1983). Partners attend to one another's health and well-being by monitoring health behaviors (Umberson 1987; Laub, Nagin, and Sampson 1998) and providing intimate, emotional support (Peters and Liefbroer 1997), in part, because each partner expects to individually gain from a healthy union.

The extent to which the benefits of marriage extend to cohabiting unions is not entirely clear (Manning and Smock 2002). Insofar as cohabitation is an "incomplete institution" characterized by less commitment (Nock 1995; Rindfuss and VandenHeuvel 1990), any health benefits associated with this union type may be less protective. Further, because cohabiting unions are also characterized by higher rates of mental illness (DeKlyen et al. 2006) and drug and alcohol abuse and violence, health monitoring benefits may not hold (Kenney and McLanahan 2006). The few studies that have investigated whether similar benefits exist for cohabitation suggest that cohabiting couples fall somewhere between married couples and single individuals in terms of well-being, especially mental health (Ross 1995). Cohabiting individuals frequently report higher levels of depression (Brown 2000) as well as more alcohol problems (Horwitz and White 1998) than their married counterparts.

Related research suggests that transitions into marriage appear to be more protective of health than transitions into cohabitation (Willitts, Benzeval, and Stansfeld 2004; but see Wu, Penning, Pollard, and Hart 2003 for conflicting results). Horwitz and White (1998) find significant but smaller mental health benefits among couples who entered a cohabiting union (as compared with couples who married), whereas both Brown (2000), and Kim and McKenry

(2002) find no improvement in psychological well-being among couples once they began cohabiting. And at least one study has found that married men, but not women, have lower depressive symptom scores than their cohabiting counterparts (Brown, Bulanda, and Lee 2005; although see Willitts, Benzeval, and Stansfeld 2004 for contrary findings). Together these studies suggest that cohabitation, although similar in many ways, is not as salubrious as marriage, perhaps reflecting the instability typically characteristic of cohabiting relationships (Brown 2000).

Just as marriage and, to a lesser degree, cohabitation appear to provide adults with a number of physical and mental health benefits, exiting such unions have negative consequences for health and well-being (Aseltine and Kessler 1993; Hemström 1996). Divorce has been linked to a higher risk of mortality (in men only, Zick and Smith 1991; Lillard and Waite 1995), poor health behaviors (Lee et al. 2005), increased mental health problems (Barrett 2000; Simon and Marcussen 1999), and increased poverty (especially among women, Holden and Smock 1991; but also among men, McManus and DiPrete 2001). Somewhat surprisingly, little research has investigated the health consequences of union dissolution among cohabiting couples. Some research suggests that exits from marriage and cohabitation result in similar decreases in functional and self-rated health but not in mental health (Wu and Hart 2002). However, exiting a cohabiting relationship may actually be *more* detrimental for health than divorce. Insofar as cohabiting couples have lower socioeconomic status, earnings, and levels of education than married couples (Manning and Lichter 1996), ending these relationships may have more severe consequences for financial well-being than ending a marriage (Avellar and Smock 2005). Similarly, because individuals in cohabiting relationships frequently have worse mental health

than their married counterparts (DeKlyen et al. 2006), the exit of a partner may signify the loss of a key piece of social support resulting in an even greater negative impact on mental health.

Men, Marriage, and Health

The health benefits associated with marriage and the consequences of union dissolution are today generally understood as gender-neutral.¹ That is, well-being among both men and women are equally affected by marital status and family structure change (Simon 2002; Waite and Gallagher 2000; Williams 2003). For men, the most implicated mechanism in this research is monitoring of health behaviors (Umberson 1987; 1992). Further, married men have also been found to have more proactive health *beliefs* than single men and these health beliefs are directly related to actual health behaviors and ultimately to health outcomes (Markey, Markey, Schneider, and Brownlee, 2005). Men are also likely to list a spouse as the main source of social support (Phillipson 1997), suggesting that men derive additional psychological benefits from marriage (Aneshensel et al. 1991; Kessler and McRae 1984; Menaghan 1989). In general, men receive more instrumental support from relationships, such as the aforementioned regulation of health behaviors (Umberson et al. 1996). Union dissolution, then, may result in declines in mental and physical health via the loss of social monitoring, promotion of health behaviors, and emotional support from intimate partners.

Family Structure Change and Trajectories of Well-Being

The marital resource model suggests that the benefits associated with marriage accumulate the longer an individual remains in that status (see Ross and Wu 1996). This approach focuses on the long-term, cumulative association between a particular marital *status* that results from a family structure change. Individuals who divorce face the risk of accumulating resource deficits over time. Role theory argues that certain roles are associated

with chronic strain, consistent with the accumulation argument (Pearlin 1999). Moreover, the strains associated with divorce may spill over into other life domains (i.e., financial, work, social relationships), exacerbating the negative effect of union dissolution on well-being (Pearlin et al. 1981). The result is a growing disparity between the continuously married and individuals who divorce with the greatest disparity in well-being occurring between the continuously married and the continuously single. It is not clear, however, if the same disparity will appear between the continuously cohabiting and the continuously single or individuals who exit cohabiting unions.

Given that previous research has pointed to social support and behavior monitoring as important mechanisms through which marriage may influence men's health one might expect the long-term impact of "being unmarried" to be particularly salient as duration in that status (or role) increases over the life course. In contrast, men who enter coresidential relationships may experience improved health given access to and accumulation of the resources provided by their relationship status. Thus we would expect men who enter coresidential unions to have positive health trajectories, just as their continuously married counterparts. Similarly, their health trajectories should improve relative to men who either remain continuously single or those who exit coresidential relationships.

In terms of the timing of family structure change, the marital resource model suggests that fathers who experience early transitions out of marriage and cohabitation should experience a steeper decline in health than fathers who experience transitions at subsequent times because these fathers have more exposure to singlehood status and thus have more time to accumulate resource deficits as the result of either divorce or separation. Conversely, fathers who enter coresidential relationships early should have better health trajectories than fathers who enter at

later points because these fathers have more exposure to coresidential relationships and thus, more time to accrue resources.

Selection

Underlying the literature on marriage and health is the assumption that marital status and changes in status are themselves causally related to health (Booth and Amato 1991; Johnson 1991). An alternate view posits that the association observed between health and marital status is the result of selection (Aseltine and Kessler 1993; Mastekaasa 1992, Wade and Pevalin 2004). According to this argument, healthier individuals are more likely to marry and less healthy individuals are more likely to divorce (Goldman 1993), leading to a spurious correlation between marital status and health. One typical means of minimizing potential selection bias is to include a number of controls for pre-existing health status and other individual traits that are likely correlated with union transitions as well as subsequent health status (see Horwitz, White, and Raskin-White 1996). However, this approach does not take account of selection on unmeasured variables. Currently there is no clear consensus on the role of selection in accounting for health disparities among marital status groups. A recent review of the literature by Wood and colleagues (2007) states that there is little evidence in support of the selection hypothesis with respect to marriage and health. Given that selection and causation are not mutually exclusive, however, it is likely that both are at work (Hope, Rodgers, and Power 1999; Waldron, Hughes, and Brooks 1996).

The Current Study

This paper attempts to address the validity of the marital resource model by focusing on three specific research questions. First, how are relationship stability and relationship transitions associated with health trajectories? Analyses compare fathers who remain continuously

married, cohabiting, or single to fathers who experience exits from or entrances into coresidential relationships as well as fathers who experience multiple union transitions over a five-year period. If the marital resource model is correct, increasing disparities in paternal health between continuously married fathers and continuously single fathers should be evident. A similar pattern should emerge between continuously married fathers and fathers who experience exits from coresidential relationships. Further, because cohabiting parents can marry, it is important to also look at the impact of moving from a cohabiting relationship to marriage compared to both continuously married and continuously single fathers. Finally, if the marital resource model is correct, the results should also yield growing disparities between continuously single and those fathers who enter coresidential relationships.

Second, the paper tests whether the marital resource model can be extended to cohabitation by examining health trajectories of continuously cohabiting fathers to continuously single fathers as well as fathers who exit coresidential relationships or experience multiple changes in family structure. If cohabiting relationships have similar characteristics as marriages we would expect the diverging health trajectories between these groups.

Third, because family structure transitions are defined by when they occur the paper investigates whether the timing of the transition is important for trajectory parameters. According to the marital resource model, fathers who exit coresidential relationships early in the observation period should have worse health trajectories than fathers who exit at later points because these fathers have more exposure to singlehood status and thus have more time to accumulate resource deficits as the result of either divorce or separation. Conversely, fathers who enter coresidential relationships early should have better health trajectories than fathers who

enter at later points because these fathers have more exposure to coresidential relationships and thus, more time to accrue resources.

The current research extends existing literature on the impact of marital status and union transitions on men's health in a number of important ways. First, it maximizes the use of longitudinal data to examine the long-term association between family structure change and health by focusing on trajectories of self-rated health and mental health problems among fathers. Although longitudinal data have previously been used to examine this relationship, rarely has it been explicitly modeled as a trajectory (Lamb, Lee and Demaris 2003; Marcussen 2005). Second, the paper investigates whether the established benefits of being married and entering into marriage, as well as the costs associated with being unmarried and marital dissolution, apply to entrances and exits from other types of unions, most notably cohabitation. And third, it expands the definition of mental health to include behaviors indicative of poor mental health that are disproportionately reported by men such as drug and alcohol use (Dohrenwend and Dohrenwend 1976; Simon 2002).

METHOD

Data

The study uses data from the *Fragile Families and Child Wellbeing Study* (FFCWS), a national longitudinal survey designed to examine the characteristics of unmarried parents, the nature and dynamics of their relationships, and how their children fare (Reichman et al. 2001). The FFCWS is based on a stratified, multi-stage, probability sample of 4,898 children, including 3,712 children born to unmarried parents in large U.S. cities. Baseline interviews of both parents were conducted within 48-hours of the child's birth (September 1998 to September 2000). Although 4,898 mothers are interviewed at baseline, only 3,830 fathers have comparable

interviews. Subsequent interviews were conducted via telephone when the focal child was one-, three-, and five-years of age. Attrition is as follows: at one-year 3,124 fathers are interviewed, at three-year 2,638 fathers are interviewed, and at five-year 2,289 fathers are interviewed. Overall, 4,331 fathers were interviewed at least once across the five-year period.

Measures

Mental Health Problems. A composite score for mental health problems is created by summing three dichotomously coded items—heavy episodic drinking (i.e., binge drinking), illicit drug use, and diagnosis of a major depressive episode—all of which are available at the one-, three-, and five-year interviews. Heavy episodic drinking is defined as consumption of at least 5+ drinks in one sitting at least once in the previous month at the one-year interview and 4+ drinks in one sitting at least once in the previous month at the three- and five-year interviews. Roughly 20 percent of fathers at one-year, 22 percent at three-years, and 20 percent at five-years report a recent episode of binge drinking. Illicit drug use is defined as use of at least one illicit drug (sedatives, tranquilizers, amphetamines, analgesics, inhalants, marijuana, cocaine, LSD/hallucinogens, or heroin) without a prescription, in larger amounts than prescribed, or for longer than prescribed in the past month. Six percent of fathers at one-year, seven percent at three-years, and eight percent at five-years reported recent illicit drug use. Depression is measured using the Composite International Diagnostic Interview Short Form (CIDI-SF) Version 1.0 November 1998. Scoring followed procedures outlined by the developers of the CIDI-SF to yield 12-month DSM-IV diagnoses of Major Depressive Episode (MDE) (American Psychiatric Association 1994; Walters et al. 2002). Ten percent of fathers at one-year, 14 percent at three-years, and 11 percent at five-years meet the diagnostic criteria for MDE. The mean mental health problem score across all fathers is .45 at one-year, .53 at three-years, and .52 at five-years.

A 12-item version of the Center for Epidemiologic Studies Depression Scale (CES-D) is also available for fathers at baseline, reflecting the average number of days per week the father reported depressive symptoms. This variable is included as a control in all models (mean = 1.0; range 1 – 6).

Self-Rated Health. At the one-, three-, and five-year interviews fathers are asked to rate their physical health (“In general, how is your health? Would you say it is ...”).² Responses range from excellent to poor on a five-point scale where higher values indicate better health. Fathers report a mean self-rated health score of 3.90 at one-year, 3.99 at three-years, and 3.84 at five-years.

Relationship History and Family Structure Change Variables. Using paternal reports of a father’s relationship status, two types of relationship history variables are created: stability and transitions (see Table 1). *Stability* is a series of dummy variables that categorize a father’s relationship with the biological mother as either married across all waves, cohabiting across all waves, not in a relationship across all waves (i.e., single), and a residual category that includes all fathers who experience at least one transition over the five-year observation period. Similarly, *transitions* are a series of mutually exclusive dummy variables that categorize all the possible relationship changes a father can experience. These include exit from marriage, exit from cohabitation, move from cohabitation to marriage, movement into a marriage with either the biological mother or a new partner, movement into a cohabiting relationship with either the biological mother or a new partner, and a residual category for experiencing more than one transition (e.g., divorce and remarriage to a woman other than the biological mother). These transitions can occur between baseline (i.e., birth of the focal child) and the one-year interview, the one- and the three-year interviews, and the three- and five-years interviews. The important

thing to remember is that all of these variables are time-invariant and mutually exclusive. That is, they describe the father's partnership history over a five-year period and once a father experiences a transition he remains in the subsequent status (e.g., a divorced father remains single after his divorce and does not marry or cohabit with a new partner).

[Insert Table 1 about here.]

Controls. Because relationship status at baseline is not randomly assigned, relationship variables may serve as proxies for other characteristics that themselves may cause fathers' relationship statuses and more importantly, their health outcomes. Fortunately the FFCWS survey includes a rich set of measures that allow us to control for many of the characteristics that are expected to affect both family formation and health. Note that these variables control only for *observable* characteristics which may lead to selection into marital status, meaning that marital status is "conditioned" on the paternal characteristics included in the model. At the baseline interview fathers are asked to indicate if in the past year they have had a problem with drugs or alcohol which interfered with work or social relationships. Also at the baseline interview mothers are asked to indicate if the father has a mental or physical condition that limits the amount of work he can do. Mothers also rate fathers' impulsivity and antisocial behavior. Impulsivity is the mean of two questions: father often says and does things without considering the consequences and often gets into trouble because he does not think before he acts (mean = 1.16, range 0 - 3) (see Dickman 1990). Antisocial behavior is the mean of four questions: father does things that may cause trouble with the law, lies or cheats, frequently gets into fights, and does not seem to feel guilty when he misbehaves (mean = .39, range 0 - 2). Finally, a variable indicating whether or not the father has ever been incarcerated across all five years of observation is created using both maternal and paternal reports.

Analyses also include an indicator of whether or not the father's parents suffered from a variety of mental health problems including alcohol or drug abuse, depression, and anxiety³ and whether or not the *father lived with both biological parents at the age of 15*. Teachman (2002) finds that, in and of itself, time spent away from both biological parents, regardless of reason, is related to an increased risk of divorce. This variable may also capture a father's commitment to marriage and to establishing a long-term, stable intimate-partner relationship. Adults raised in families with a history of instability have been found to hold more negative views of marriage (Amato and DeBoer 2001), have more difficulties with interpersonal relationships (Ross and Mirowsky 1999), as well as have higher odds of experiencing divorce and relationship dissolution themselves (Amato and Cheadle 2005; Wolfinger 1999). Finally, paternal reports of the number of prior relationships are used to control for mothers previous relationship experiences and stability. This variable is especially useful in dealing with potential selection bias insofar as it should control for fathers' propensity to form unstable unions.

In addition, all models control for basic socio-demographic factors. These include father's age at baseline (in years), education (less than high school, some college, and college degree and above with high school the omitted category), race (Black, Hispanic, and other with white being the omitted category), and an indicator for immigrant status. Means, standard deviations, and the percent missing for all variables can be found in Table 1.

Selection Control. All models are adjusted for nonrandom selection into non-coresidential birth at the baseline interview by using a hazard rate instrument based on the inverse Mills ratio (Heckman, 1979). Known as lambda (λ), the instrument represents the likelihood of experiencing a birth while not married or cohabiting with the biological mother. A probit model first estimates the likelihood of non-marriage at baseline. From the likelihood, a

lambda is constructed for each father such that higher values indicate a greater likelihood of being non-coresidential at birth.⁴

Analytic Strategy

This paper uses latent growth curve modeling to capture the dynamic aspect of family structure on changes in mental and self-rated health. Assuming a linear pattern over time, each individual's trajectory is characterized by a unique intercept (α), linear, time-dependent slope (β), and some measurement error (ε). Thus, the level one equation is as follows:

$$y_{it} = \alpha_i + \beta_{it} + \varepsilon_{it} \quad (\text{Equation 1})$$

Each y_{it} is an observed measure of health. This equation represents within-individual (i) change over time (t).

The second level of the growth model allows the random intercepts (α_i) and slopes (β_i) to be a function of variables that change across individuals (i) but do not change across time (t). This represents between-individual change over time. The level two equations are as follows:

$$\alpha_i = \alpha_0 + \alpha_1 x_{i1} + \alpha_2 x_{i2} + \dots + \alpha_k x_{ik} + u_i \quad (\text{Equation 3})$$

$$\beta_i = \beta_0 + \beta_1 x_{i1} + \beta_2 x_{i2} + \dots + \beta_k x_{ik} + v_i \quad (\text{Equation 4})$$

For the purposes of this paper, the x 's are the controls, lambda, and the time-invariant relationship history variables. The intercept and slope for each health outcome are directly regressed on these characteristics to assess for potential group differences in the means of the growth factors.

All models are estimated using Mplus, Version 4.1 (Muthén and Muthén 2006) using full information maximum likelihood (FIML) which incorporates respondents with missing data. Specifically, fathers with incomplete data contribute only to those portions of the model where data are available. Mplus accounts for both within- and between-imputed sample variance

among the five imputed data sets. Model fit is evaluated using the maximum likelihood ratio test statistic (χ^2), which if significant, indicates poor fit. However, models with sample sizes over 200 are frequently significant and thus we use three supplemental measures of model fit—the root mean square error of approximation (RMSEA), the Tucker Lewis Index (TLI), and the Comparative Fit Index (CFI). Convention dictates that an RMSEA below .05 and a TLI and CFI close to 1.0 indicate good model fit (Bollen and Curran 2006).

RESULTS

Self-Rated Health.

The primary research question asks how stability and change in family structure after birth are associated with fathers' health trajectories and whether the patterns are consistent with the marital resource model. The model predicts that fathers who are continuously married, and possibly fathers who are continuously cohabiting, will have better health trajectories than fathers who are continuously single or fathers who experience unstable relationships. The first test, then, of the marital resource model contrasts trajectory parameters among the continuously married and the continuously single and those fathers who exit coresidential unions. The results are presented in Table 2.

Continuously married fathers, the reference group, start their self-rated health trajectories at 2.96 and experience an increase in self-rated health ($\beta = .09$, ns) (see intercept row in Table 2), although recall that these means apply to a hypothetical individual with a mean on all other covariates in the model. Columns one and two suggest that fathers who remain continuously cohabiting or continuously single with no coresidential partner have significantly lower initial levels of self-reported health than fathers who are continuously married to the biological mother ($\alpha = -.23$; $p < .05$ and $\alpha = -.47$; $p < .10$, respectively). A similar pattern of lower initial levels of

self-rated health than continuously married fathers is found for fathers who exit marriages or cohabiting relationships, who move from cohabitation to marriage, who enter marriages or cohabiting relationships, and who experience multiple transitions. However intercept coefficients for these groups do not reach statistical significance. Interestingly, the only group that experiences a (marginally) significantly different slope as compared to continuously married fathers is the continuously single group ($\beta = .06, p < .10$). So while all fathers experience roughly the same rate of change in self-rated health over time, continuously single fathers experience a significantly steeper (or more positive) slope. This could be the result of regression to the mean given a much lower starting point for these fathers' health trajectories.

[Insert Table 2 about here.]

Continuously Cohabiting and Continuously Cohabiting. The second test of the resource model examines whether the same disparity predicted between continuously married fathers and continuously single fathers, as well as those fathers who exit coresidential relationships, also holds for continuously cohabiting fathers. Wald chi-square tests are used to indicate whether or not these differences exist and the results are indicated with superscripts in Table 2.

Continuously single fathers do start their trajectories with significantly lower levels of self-rated health than continuously cohabiting fathers ($\chi^2 = 5.70, df = 1, p < .05$); however, continuously single fathers' self-rated health improves at a faster rate than that of continuously cohabiting fathers ($\chi^2 = 6.17, df = 1, p < .05$). In contrast to the predictions of the resource model, no other differences were found between trajectory parameters of continuously cohabiting fathers and other fathers. When comparing trajectory parameters to those of stably single fathers, one significant contrast emerged: fathers who experienced multiple transitions during the five-year span had more steeply declining self-rated health trajectories than continuously single fathers (χ^2

= 7.41, $df = 1$, $p < .01$). It should also be noted that a marginally significant difference emerged between the continuously single and fathers who entered marriage between baseline and one-year with fathers entering marriage experiencing better self-rated health trajectories over time, consistent with the marital resource model ($\chi^2 = 2.96$, $df = 1$, $p < .09$).

Timing. The final research question addresses how the timing of family structure change may be associated with father's health trajectories. Earlier exit transitions should be associated with steeper declines in self-rated health than later exits whereas earlier entrance transitions should be associated with steeper increases in self-rated health than later entrance transitions. A marginally significant difference emerged between exiting a marriage between baseline and one-year and exiting between one- and three-years ($\chi^2 = 3.01$, $df = 1$, $p < .10$), with earlier exiters experiencing a steeper decline in their self-rated health over time than fathers who divorced later. No differences emerged in the association between exiting a cohabiting relationship, movement from cohabitation to marriage, and entrances into either marriage or cohabitation and the slope of self-rated health trajectories based on timing of the transition. Thus, it appears that timing has some impact on the association between family structure change and the slope of father's self-rated health trajectories.

Mental Health Problems.

Table 2 presents identical models for mental health problems, except here, higher values are indicative of worse health. Looking again at the intercept row, continuously married fathers (the reference group) start their mental health problem trajectories with .58 problems and experience an increase in problems over time ($\beta = .07$, $p < .10$). Fathers who remain continuously cohabiting, who exit a cohabiting relationship, who enter a cohabiting relationship by the one-year interview, and who experience multiple transitions start their trajectories with

significantly more problems than continuously married fathers. Although not statistically significant, the pattern of results is similar for all other groups of fathers. However, none of the slope parameters are significant indicating that all fathers experience roughly the same rate of change in mental health problems over time.

Continuously Cohabiting and. Continuously Single. Chi-square tests revealed no differences between continuously cohabiting and continuously single fathers at the start their mental health problem trajectories, nor were any differences found with respect to their trajectory slopes. One significant intercept difference emerged between continuously cohabiting fathers and fathers who entered a marriage between the three- and five-year interview, with cohabiting fathers starting their trajectories with more mental health problems ($\chi^2 = 5.42$, $df = 1$, $p < .02$). Similarly, one marginally significant intercept difference emerged between continuously single fathers and fathers who entered a marriage between the three- and five-year interview, except in this case single fathers started their trajectories with more mental health problems ($\chi^2 = 3.58$, $df = 1$, $p < .06$).

Timing. Recall that the marital resource model suggests that earlier exit transitions should be associated with steeper increases in mental health problems than later exits whereas earlier entrance transitions should be associated with steeper declines in mental health problems than later entrance transitions. No differences in the association between family structure change and the slopes of mental health problem trajectories were found based on the timing of the transition.

Illustration of Trajectories.

The results do suggest that men in different relationship stability and transition groups begin their trajectories at different places and that this disparity is perpetuated across the

subsequent five-year period. Figures 1 and 2 plot health trajectories based on growth models where time-specific family structure change groups (i.e., exits and entrances into marriages and cohabiting relationships) are collapsed. The trajectories belong to a hypothetical white, non-immigrant, high school educated father with mean age, number of previous relationships, baseline CES-D and self-rated health who did not live with both parents at age 15 and did not have a parent with a mental health problem. The top panel of both figures shows that continuously married fathers are the healthiest followed by the continuously cohabiting, the exit cohabitation group, and finally, the exit marriage group. The bottom panel of the figures shows that continuously single fathers fall somewhere between fathers who enter a marriage or a cohabiting relationship, with fathers who enter a marriage reporting the best health and fathers who enter a cohabiting relationship reporting the worst health.

[Insert Figures 1 and 2 about here.]

DISCUSSION AND CONCLUSION

The marital resource model posits that the disparity in well-being between married and unmarried parents will grow as a function of the time spent in each status. This paper has attempted to test this and related hypotheses by following mental and physical health trajectories of fathers in different family structures, focusing on transitions into and out of marriages and cohabiting unions with both biological mothers and new partners. For both self-rated health and mental health problems, continuously married fathers were healthier than all other groups of fathers, both in terms of where they began their trajectories as well as the course of those trajectories. What was not evident was a *growing* disparity in health between continuously married, or continuously cohabiting, and continuously single fathers over the five-year span following the birth of a child. Nor did the results provide evidence of a growing disparity

between continuously married fathers and fathers who experienced family structure transitions. Again, the picture is one of parallel trajectories with different starting points and it is these differences in starting points that is perpetuated over time.

Analyses also tested whether the timing of a family structure transition was relevant for the association between family structure change and health trajectories. Only one marginally significant difference emerged. Fathers who exited marriages early in the five-year span experienced worse self-rated health trajectories than fathers who divorced at a later time. The pattern of results was also similar for mental health problems but differences across time did not reach statistical significance. These findings provide limited support for the resource model: early exiters spent more time in the role of divorced parent and thus had more time to accrue resources deficits associated with not having a coresidential partner.

Why did the results find little support for the resource model? First, fathers in the FFCWS are, overall, young and healthy resulting in little change in health over time. Second, although the paper expands the “traditional” operationalization of mental health problems by including drug and alcohol use, these problems are severe and relatively rare in the sample and in the general population. It is possible that if a symptom count of depressive symptoms had been available for all waves a stronger association may have emerged between family structure change and mental health trajectories. Third, because fathers were only observed for five years, rather than ten or twenty years, long-term, cumulative trends in health that may be observed well into the future may not yet have been evident. A lifetime without an intimate partner who provides emotional stability and monitoring of health behavior is likely to have more of an influence on mental and physical health than five years during early- to-mid adulthood. This may be especially true for physical health problems such as chronic disease and disability that

have complex etiologies and take years to manifest. Lorenz and colleagues (2005) report that in the years immediately following a family structure change divorced, middle-aged women looked no different than their stably married peers; however, a decade later these same women reported significantly worse physical health. Finally, perhaps mental and physical health are too distal outcomes with which to gauge the mid-range effect of family structure change on well-being. Financial capital, diet, exercise, and social support have all been implicated as possible mechanisms for marriage's salubrious association with health and all of these factors are likely to themselves respond to changes in family structure, both in the short and long term.

Limitations. The analyses presented here attempted to address possible selection effects by including a coefficient representing the hazard of experiencing a nonmarital birth. Nonetheless, selection may have affected the results in two ways. First, because we do not observe fathers before their relationships formed we do not know how much of the difference in trajectory intercepts, that is health one year after birth, is due to differential selection on unobservable factors. The fact that fathers who eventually exit a coresidential relationship (i.e., marriage or cohabitation) have lower initial levels of health than continuously married fathers suggests that union dissolution is selective of less healthy people. Second, the selection hypothesis also suggests that any factors involved in selection into relationship statuses and/or transitions may also persistently affect health as well, thus qualifying the statement that changes in family structure *cause* changes in the slopes of health trajectories. If selection is at work, we would expect family structure changes to be associated with persistent negative effects on health because the same factors influencing union status would also affect health over time (see Lucas, Clark, Georgellis, and Diener 2003). Yet the results yielded few significant slope differences, suggesting parallel trajectories across all groups of fathers based on family structure change.

Inability to randomly assign fathers to relationship status and family structure transition groups is not the only limitation of the current study. As a result of over-sampling unmarried parents, the Fragile Families Study sample is predominantly comprised of disadvantaged fathers residing in large cities which may limit the generalizability of the results. In addition, factors other than family structure transitions may be driving the observed results, namely social support and health behaviors. Although the FFCWS contains a number of previously unavailable measures which help to get at possible selection effects, it does not contain detailed emotional support information nor does it capture fathers' health behaviors. If unmarried fathers were able to elicit social support from sources other than a spouse or cohabiting partner any negative effects associated with family structure changes may have been masked. Future work should examine trajectories of these potential mediators in the years following family structure change.

Conclusion. Given recent policy interest in promoting marriage among low-income, unmarried parents, and in helping those couples sustain healthy marriages, studies which examine the benefits associated with marriage, as well as the costs associated with union dissolution, have renewed importance in social science inquiry. Consistent with previous studies, the results presented here suggest that marriage, particularly stable, long-term marriage, is associated with higher levels of well-being than are found among the non-married as well as individuals who experience disruption of a coresidential relationship. In contrast, entering a marriage after a nonmarital birth is not as salubrious as remaining continuously married; however, entering marriage in the year following the birth does appear to result in better self-rated health trajectories than remaining continuously single. And while differences between continuously married families and single-parent families do not appear to increase over time these disparities also do not diminish with time. Yet this is far from the goal of policy, namely,

closing the gap. Nonetheless, it is still too early to tell whether marriage after a nonmarital birth will lead to long-term health benefits among the fathers from these fragile families ten or twenty years from now. In an era when social welfare policies are aimed at promoting and sustaining stable families attempts to help members of non-traditional families achieve the same degree of well-being as their traditional counterparts will ultimately improve the overall quality of life for all members of the family unit.

NOTES

¹ This has not always been the case with earlier theoretical perspectives positing gender differences with respect to the positive effects of marriage and negative effects of marital dissolution (see Bernard 1972 and Gove and Tudor 1973). This theoretical framework and related empirical studies have been critiqued as relying too heavily on gendered psychological outcomes (i.e., depression and anxiety) (Simon 2002).

² Because a comparable depression measure is not available at the birth of the child, we have opted to keep the analyses parallel by not utilizing the self-rated health measure at baseline interview. Baseline self-rated health is included in all models as a control variable (mean = 3.98; SD = .94).

³ Although these variables are not medical diagnoses, and are subject to recall error, they do give some indication of a family history of mental health problems as well as exposure to such illnesses. A limitation of these measures is that a mother's own mental health status may affect her assessment of her parents' mental health, a phenomenon known as "shared method variance." Shared method variance refers to the possible inflation of the association between two self-reported variables (i.e., the variables share the same method of derivation) (see Bank, Bishion, Skinner, and Patterson, 1990). In this case, if shared variance exists, controlling for maternal reports of parents' mental health problems should lead us to underestimate the effect of the relationship history and family structure variables on health trajectories.

⁴ A similar procedure has been utilized by Ferraro and Kelley-Moore (2003) and Kelley-Moore and Ferraro (2004). More information on the construction of the probit model is available upon request.

⁵ In an alternate model, self-rated health was treated as a categorical variable. Unlike the continuous model, FIML estimation is not available for the categorical growth model resulting in a reduced sample size of 1,280. Nonetheless, results were similar to those presented here with the exception of a significant negative intercept coefficient for the exit cohabitation three- to five-years group and a non-significant negative intercept coefficient for the continuously single group. The slope coefficients for the exit marriage baseline to one-year and the exit cohabitation one- to three-years group also reached marginal significance.

⁶ In an alternate model, mental health problems were treated as a count variable. Unlike the continuous model, FIML estimation is not available for the poisson growth model resulting in a reduced sample size of 1,280. Nonetheless, results were similar to those presented here with the exception of a marginally significant positive intercept coefficient for the continuously single, exit cohabitation between three- and five-years, and cohabitation to marriage between baseline and one-year and three-year and five-years groups and a significant negative slope coefficient for the enter cohabitation between one- and three- and three- and five-years groups and a significant positive slope for the enter marriage between one- and three-years group.

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Table 1. Descriptive Statistics (Means or Percentages, with Standard Deviations in Parentheses, n = 4,331).

	Mean/Percent	Percent Missing
Health Outcomes		
<i>Self-Rated Health:</i> One-Year (Range: 1 – 5)	3.90 (1.02)	22.28
Three-Years	3.99 (.97)	24.06
Five-Years	3.84 (.99)	27.50
<i>Mental Health Problems:</i> One-Year (Range: 0 – 3)	.45 (.65)	22.30
Three-Year	.53 (.71)	23.83
Five-Year	.52 (.72)	27.18
Relationship History Variables		
<i>Baseline Relationship with Bio Mother</i>		11.59
Married	24.84	
Cohabiting	38.72	
Romantic, Nonresident	18.68	
No Relationship	6.16	
<i>Relationship Stability</i>		47.31
Continuously Married	15.29	
Continuously Cohabiting	5.77	
Continuously Single	2.77	
Unstable	28.86	
<i>Relationship Transitions^a</i>		47.31
Exit Marriage		
Baseline and One-Year	.23	
One-Year and Three-Years	.44	
Three-Years and Five-Years	1.06	
Exit Cohabitation		
Baseline and One-Year	1.45	
One-Year and Three-Years	1.71	
Three-Years and Five-Years	2.40	
Cohabitation to Marriage		
Baseline and One-Year	2.72	
One-Year and Three-Years	2.31	
Three-Years and Five-Years	1.59	
Enter Marriage		
Baseline and One-Year	.81	
One-Year and Three-Years	.62	
Three-Years and Five-Years	.88	
Enter Cohabitation		
Baseline and One-Year	1.94	
One-Year and Three-Years	.90	
Three-Years and Five-Years	.76	
Multiple Transitions	9.03	

Table 1. Cont.

	Mean/Percent	Percent Missing
Control Variables		
<i>Paternal Report</i>		
Drug/Alcohol Problem ^b	5.17	11.84
Depressive Symptoms (CES-D; Range: 0 – 6) ^b	1.10 (1.19)	14.71
Self-Rated Health (Range: 1 – 5) ^b	3.98 (.94)	11.73
<i>Maternal Report</i>		
Mental/Physical Health Problem ^b	5.73	2.19
Impulsivity (Range: 0 – 3)	1.16 (1.01)	17.25
Antisocial Behavior (Range: 0 – 2)	.39 (.57)	17.02
Ever Incarcerated ^c	30.34	7.39
Age (Range: 15 – 80)	27.95 (7.27)	11.57
<i>Education:</i> Less than High School	29.55	11.75
High School	28.61	
Some College	20.32	
College Degree and Above	9.77	
<i>Race:</i> Black	41.58	0
White	17.87	
Hispanic	24.52	
Other	4.13	
Immigrant Status	16.12	11.75

Notes: ^a Mutually exclusive categories created from the “Unstable” group. ^b Baseline reports. ^c Maternal and paternal report.

Table 2. Results of Growth Model of Paternal Health and Time-Invariant Relationship History Variables: Relationship Stability and Transitions.

	Self-Rated Health		Mental Health Problems	
	Intercept (α)	Slope (β)	Intercept (α)	Slope (β)
Level 2				
Intercept (Continuously Married)	2.96***	.09	.58***	.07†
<i>Relationship History</i> ^b				
Continuously Cohabiting	.01 ^e	-.03 ^e	.14**	-.01
Continuously Single	-.23* ^d	.06† ^d	.11	-.01
Exit Marriage				
Baseline and One-Year	-.47†	.14	.36†	.05
One-Year and Three-Years	-.22	-.05	.11	.03
Three-Years and Five-Years	-.04	-.01	.15	.02
Exit Cohabitation				
Baseline and One-Year	-.06	-.05	.17*	.04
One-Year and Three-Years	-.04	.02	.15*	.01
Three-Years and Five-Years	-.07	-.02	.19**	-.001
Cohabitation to Marriage				
Baseline and One-Year	-.10	-.002	.04	.004
One-Year and Three-Years	-.13	.01	.13†	.01
Three-Years and Five-Years	-.13	.03	.12	-.01
Enter Marriage ^c				
Baseline and One-Year	-.16	-.03	-.06	-.003
One-Year and Three-Years	.08	-.05	.01	-.03
Three-Years and Five-Years	-.10	.05	-.10 ^{de}	.03
Enter Cohabitation ^c				
Baseline and One-Year	-.18	.000	.17**	-.01
One-Year and Three-Years	-.27†	.05	.11	-.03
Three-Years and Five-Years	-.17	.04	.20†	-.05
Multiple Transitions	-.04	-.02 ^e	.15***	.01
Model Fit				
χ^2 (df)	94.978*** (34)		90.483*** (34)	
RMSEA	.020		.020	
TLI	.928		.906	
CFI	.976		.969	

Notes: α is the intercept of health at one-year. β is the growth (or slope) in health. All models control for age at baseline education, race, immigrant status, baseline self-rated health, baseline CES-D, lived with biological parents at age 15, number of previous relationships, parents' mental health history, and lambda.

^a White is referent category. ^b Continuously married is the referent category. ^c With both biological mothers and new partners. ^d Different from continuously cohabiting at $p < .05$. ^e Different from continuously single at $p < .05$.

† $p < .10$ * $p < .05$ ** $p < .01$ *** $p < .01$

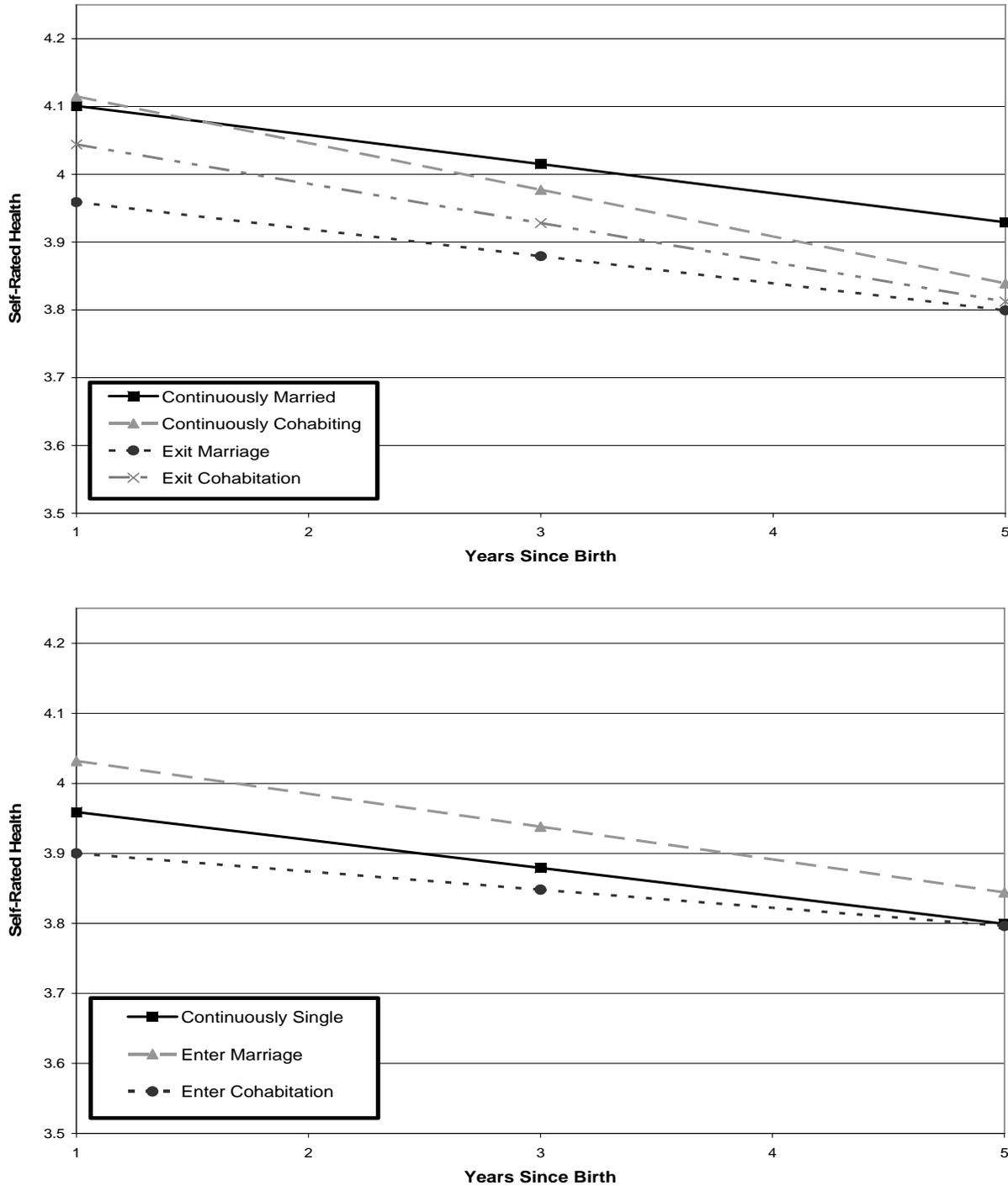


Figure 1. Paternal Trajectories of Self-Rated Health. The analytic model collapsed time-specific transition groups (i.e., exit and enter marriage or cohabitation). All figures present a hypothetical white, non-immigrant, high school educated father with mean age, number of previous relationships, baseline CES-D and self-rated health who did not live with both parents at age 15 and did not have a parent with a mental health problem.

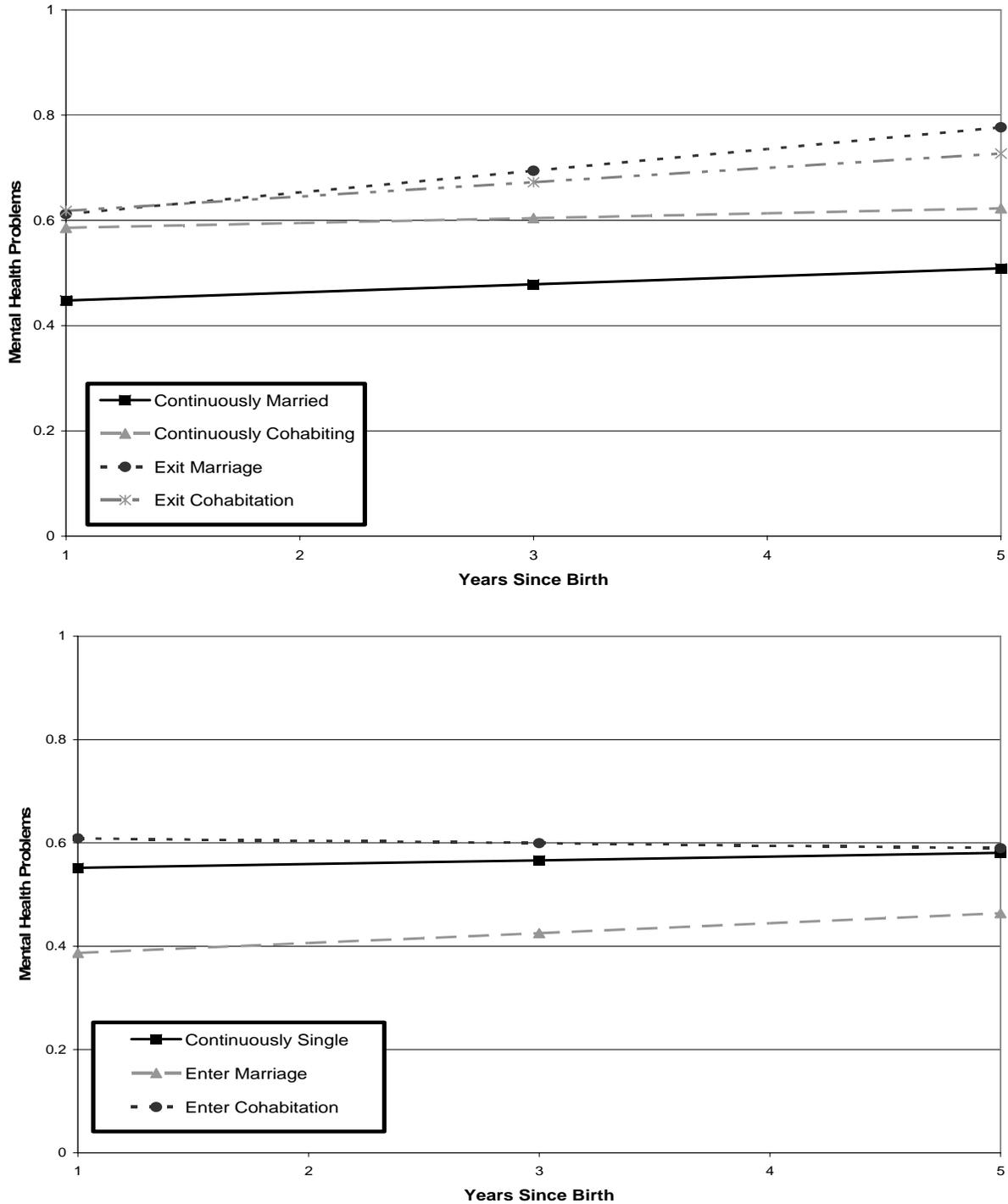


Figure 2. Paternal Trajectories of Mental Health Problems. The analytic model collapsed time-specific transition groups (i.e., exit and enter marriage or cohabitation). All figures present a hypothetical white, non-immigrant, high school educated father with mean age, number of previous relationships, baseline CES-D and self-rated health who did not live with both parents at age 15 and did not have a parent with a mental health problem.