Journal of Applied Research on Children: Informing Policy for Children at Risk

Volume 4
Issue 1 *New Morbidities 2.0*

Article 6

2013

Family Matters: Links Between Family Structure and Early Child Health

Laura L. Freeman
Rice University, LLFreeman@rice.edu

Mackenzie Brewer
Rice University, mackenzie.b.brewer@rice.edu

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Acknowledgements
The authors would like to thank Dr. Rachel Tolbert Kimbro for providing many insightful comments on the previous versions of this manuscript.

Introduction

The changing structure of the American family and what it means for the nation's children has been the subject of extensive research in recent decades. The married, two-parent household is no longer the ubiquitous family form in the United States, and a larger percentage of the nation's children are being born outside of marriage than ever before.[1] Research demonstrates that family structure influences children's well-being and later success, but a growing body of literature focuses specifically on how family structure affects children's health at the very beginning of life, starting with pregnancy. The need to better understand this relationship is underscored by the well-documented impact of prenatal health behaviors on birth outcomes,[2] as well as research that indicates infant health may predict later child and adult success.[3-5] Thus, gaining an understanding of the ways in which family structure affects the healthy development of children—starting before they are born—is vital in this time of rapid changes to family life. Certainly, different family structures provide very different environments for children, but what impact does family structure have on early child health outcomes? And for which health outcomes are family structure differences most salient? Further, to what extent could selection be driving the relationship?

The objective of this paper is to address these questions by reviewing the research of the past two decades regarding the relationship between family structure and the earliest of child health outcomes including during pregnancy, birth, and infancy until age two. We focus on the indicators of early child health that have received the greatest attention in the family structure literature: women's prenatal health behaviors, infant birth outcomes, breastfeeding duration, and infant mortality. While these outcomes have received the most research attention, we acknowledge that some may be more salient indicators of child health than others. Further, most research in this area examines only static family structure and does not account for family instability or relationship transitions. As a result, though many children experience changes in family structure before age two, we are largely unable to assess the impact of these transitions on early child health. With this in mind, we review research that highlights the potential mechanisms underlying the relationship between family structure and early child health. Also, as the federal government continues to support programs meant to encourage healthy marriages and responsible fatherhood, we aim to identify key risk and protective factors for children from the prenatal period through infancy that may inform future policy interventions. Throughout the review, we first synthesize what is known about the differences in outcomes for children born to married

versus unmarried parents, and when possible, break down evidence of the differences in outcomes between children of cohabiting, dating, and single mothers.

We begin by summarizing the most pervasive changes to family structure in the US in recent history and discuss why the period from gestation to infancy is so critical for children. We then review what has been learned over the past two decades about the impact of family structure on specific child health outcomes. Because children's environment in utero affects their health outcomes at birth and beyond,[6] we first examine evidence of family structure's impact on child health before birth—in terms of prenatal care investments. We then examine what is known about the effects of family structure on birth outcomes and child health from birth to age two—as indicated by infant mortality and breastfeeding duration. Because structural factors (eg, poverty and socioeconomic status) may shape women's entry into different family structures, we also address the issue of selection and consider new research that sheds fresh light on this debate. Additionally, theoretical explanations for why family structure matters for children's general wellbeing lend insight into why family structure matters specifically for children's health. As such, we consider how family structure may influence early child health through specific pathways and mechanisms. Finally, we conclude with a critical assessment of current policy efforts to strengthen families, and make recommendations for how best to address this critical issue for America's families going forward.

American Family Structure Trends

Throughout our history, the majority of American children have been born to married parents, and while this is still true, today many more Americans are having children outside of marriage. Data from The National Vital Statistics Report reflect this trend; in 1980, 18.4% of all births in the United States were to unmarried couples, by 1990 this number had risen to 28%, and by the year 2000 this figure had reached 33.2%[1]. While the overall nonmarital birth rate has declined slightly in recent years, the data from 2010 indicate that 40.8% of babies were born to unmarried parents.[7]

The rise in unmarried parenthood has not necessarily coincided with a similar rise in single-parenthood, as an increasing percentage of children are born to cohabiting couples (ie, unmarried couples who are living together). The National Survey of Family Growth indicates that between 1980 to 1984, only 29% of nonmarital births were to cohabiting couples.[8] By the 2006 to 2008 survey, however, the majority of nonmarital births, or 60%, were to unmarried couples living together.[9] Thus, although

the majority of births to unmarried parents are to those who live together and are romantically involved, recent research demonstrates these cohabiting relationships are more fragile, and this has important implications for child wellbeing.[10] For example, among a cohort of urban children born to unmarried parents in the late 1990s, by the time the children were five years old, fully two-thirds of mothers had ended the relationship with their child's father.[11] Moreover, the changes in family structure have not taken place uniformly among socioeconomic groups,[12] but rather the most disadvantaged subgroups of Americans have been disproportionately affected by the rise in births outside of marriage.[13,14] Although nonmarital births are now more common across the social strata, the concentration of nonmarital births in more disadvantaged groups means that children are experiencing 'diverging destinies,' and marriage is increasingly becoming a hallmark of advantage for couples and for children.[15]

A Healthy Start Matters

Many methodologically rigorous studies have employed techniques that allow for causal inferences to be drawn regarding the effect of infant health on later life outcomes. Indeed, such research shows that the beginning of life is important in determining future outcomes. Low birth weight (LBW), for example, predicts poorer health in later childhood and adulthood.[16] Echoing this trend, poor infant health predicts greater mortality up to age 17.[5] Low birth weight also predicts lower educational attainment as LBW infants have been shown to be less likely to graduate from high school.[4] Alternately, increasing birth weight has been linked to gains in educational attainment[3]. Further, research also links LBW to reduced income[3] and employment status in adulthood.[17] Clearly, there are compelling reasons to reduce the incidence of LBW, not only because it's important for infant health, but because infant health affects children's long-term life trajectories.

Similarly, the uterine environment affects children's health even before birth and can have lasting impacts.[6] As such, prenatal health behaviors are an important predictor of child health outcomes.[2] A breadth of research links poor infant health outcomes to unhealthy prenatal health behaviors such as smoking, substance abuse, and inadequate prenatal care. For instance, it has been estimated that maternal smoking is responsible for 20% to 30% of all low birth weight births. [18,19] In addition to LBW, fetal exposure to cigarette smoke is also associated with an increased risk of preterm delivery,[20] infant mortality,[21] and negative effects on cognition.[22] And while there has been a nationwide decrease in the rate

of pregnancy-smoking since 1989, still more than 10% of women smoke during pregnancy.[23] Similarly, the use of illicit substances during pregnancy is associated with a host of adverse effects on child health. The use of cocaine during pregnancy, for example, is associated with fetal distress, LBW, and poor neurobehavioral outcomes.[24,25] Additionally, receiving inadequate or no prenatal care is associated with an increased risk of LBW, as health care providers may miss the opportunity to prevent or address complicating medical conditions.[2] This matters because many American women are not getting the prenatal care they need. For example, based on the Prenatal Care Utilization Index, one in six women in the US receives inadequate prenatal care.[26] Clearly, prenatal health behaviors and investments have ramifications for children at birth and beyond. Thus, these impacts underscore the importance of prenatal care and of encouraging women to avoid unhealthy behaviors during pregnancy.

The Role of Family Structure in Prenatal Health

Increasingly research has begun to focus on how family structure influences women's prenatal health behaviors, and how this impacts future health disparities in early childhood and adult outcomes. As mentioned, women's health behaviors during pregnancy affect not only their children's uterine environment before birth, but subsequently the health of their children at birth. Significantly, these behaviors vary among women in different types of relationships. In general, marriage is positively correlated with women's prenatal health investments.[27-29] That is, married women are more likely to receive adequate prenatal care, to take prenatal vitamins, and are less likely to report smoking and drinking in the last trimester of pregnancy compared to unmarried women.[28] In sum, marriage is associated with more positive prenatal health behaviors than any other type of family structure.[27]

That said, relationships among unmarried women are widely heterogeneous, ranging from committed cohabiting couples to single mothers who are no longer involved with their child's father.[28] For this reason, new research regarding family structure's impact on women's prenatal health behaviors goes beyond marital and nonmarital classifications to incorporate a broader range of relationship taxonomies. For instance, Kiernen and Pickett[29] found that unmarried women who are romantically involved with the father of their child are less likely to continue smoking during pregnancy compared to women who are not involved in an intimate relationship. Similarly, Kimbro found that while married women exhibit the lowest levels of unhealthy behaviors during pregnancy, women

who are cohabiting or dating the father exhibit fewer unhealthy prenatal behaviors than women who are no longer in a relationship with the father of their child.[27] Though married and cohabiting women tend to exhibit healthier behaviors during pregnancy than single women, some evidence suggests this relationship may vary by women's level of education. For example, Jacknowitz & Schmidt[28] found that marital status had no significant impact on prenatal care investments for college-educated mothers. These findings point to an interesting pattern. That is, as relationship commitment increases, so does the level of positive prenatal health behaviors women tend to exhibit. It is possible, however, that unobserved characteristics could be driving the relationship between family structure and prenatal health behaviors. For example, it may not be marital status per se that impacts prenatal health behaviors, but instead other factors associated both with marital status during pregnancy and with poor prenatal health behaviors that drive the relationship. Indeed, Jacknowitz and Schmidt[28] find that addressing this possibility reduces, but does not eliminate, the marriage advantage for prenatal health behaviors. This finding indicates that part of the marriage benefit is likely due to other, unobserved characteristics that sort couples into different relationship categories. We might then infer that promoting responsible parenthood, rather than marriage per se, could be a better focus for policymakers interested in improving prenatal health behaviors.

The Role of Family Structure for Birth Outcomes

Mounting research linking family structure to birth outcomes tells a similar story. We start by outlining the differences between children born to married versus unmarried mothers. That is, studies have consistently shown that children born to unmarried mothers are more likely than those born to married mothers to experience a host of adverse birth outcomes—stillbirth, preterm delivery, LBW, and small for gestational age (SGA).[28,30-33] For instance, one large scale study using data of all US births from 1995 to 2004 found that unmarried women experienced a significantly greater risk of stillbirth than married women.[31] Similarly, numerous studies indicate unmarried mothers are more likely to have preterm deliveries than married mothers, which is particularly troublesome given the potential complications associated with preterm birth.[28,33-35] Low birth weight is one of the most widely used indicators of adverse birth outcomes. Research regarding the effects of family structure on the risk of LBW clearly suggests that unmarried mothers are more likely than their married counterparts to have a LBW infant.[28,33,34] Additionally, though SGA has been used to measure birth outcomes less often, the results are the same.

Married mothers are less likely than unmarried mothers to have an SGA infant.[34,36] Taken together, these findings seem to point to the same fact—that marriage provides some protection against adverse birth outcomes.

As we have pointed out, researchers increasingly recognize family structure is more than a binary classification—married versus unmarried. Newer research disaggregates nonmarital family structure categories and helps us understand what it is about marriage, more so than cohabiting or dating relationships, that benefits women in terms of birth outcomes. For instance, important differences in birth outcomes exist between married and cohabiting mothers, as well as between non-cohabiting mothers with romantic partners and single mothers. Specifically, mounting evidence suggests there is a graded relationship between family structure and birth outcomes, such that while married mothers are the least likely to experience adverse birth outcomes, cohabiting mothers are at less risk than single mothers.[28,33,34,36] For example, Luo, Wilkins, and Kramer[33] found evidence of this pattern for several birth outcome measures including preterm delivery, LBW, SGA, neonatal and postneonatal death. Their study compared married mothers to mothers in common-law unions, as well as to single mothers. They found significant, though modest, disparities in all birth outcomes measured between married mothers and mothers in common-law unions, such that children born to mothers in common-law unions fared slightly worse than those born to married mothers. Several studies since then have echoed these findings, though few have used the term common-law, opting instead to define nonmarital family structures as either cohabiting or single. Further, cohabiting mothers are slightly less likely than single mothers to have SGA, LBW, or preterm infants than single mothers, though their children are still at a greater risk of experiencing these outcomes than those of married mothers.[28,34,36] Young and Declerq[35] specified nonmarital family structures differently as well, making no distinction between mothers with cohabiting and non-cohabiting partners. Perhaps as a result, they found no significant differences in the risk of LBW or preterm birth between unmarried mothers with partners and married mothers, though they note that a risk gradient may exist. Serious questions remain, of course, as to the magnitude of the benefit for cohabiting mothers.

Moreover, this benefit gradient is not necessarily consistent when broken down into race-ethnic or socioeconomic groups. That is, some scholars suggest marital status and family structure type may not benefit all groups of women equally.[28,32] Likewise, many scholars have pointed out that marriage rates differ drastically among race-ethnic and socioeconomic groups[37] and therefore selection remains a concern when

interpreting the results of most of these studies. While we address the issue of selection later in this review, we note here that the marriage benefit for birth outcomes persists after accounting for socioeconomic status and race/ethnicity.

The Role of Family Structure for Infant Mortality

Infant mortality, or a child dying before reaching age 12 months, is still a too-prevalent outcome in the U.S.. As with birth outcomes, disparities in infant mortality rates persist among family structure types—especially between the children of married and unmarried parents. To our knowledge, few studies have focused on the role that marital status plays in predicting this particular outcome, however, those that do demonstrate a consistent pattern. That is, infants born to unmarried mothers have significantly higher mortality rates than those born to married mothers.[38,39] The most current figures indicate that US infant mortality rates were 75% higher for infants of unmarried mothers than the rates for infants of married mothers.[39] Again, we note that selection remains a potential concern in these studies, and we engage in a more in-depth discussion of this later on.

Unfortunately, there is an absence of studies that have parsed nonmarital family categories. As a result, little is known about whether infant mortality rates among children in nonmarital family structures differ. For example, we do not know whether or to what extent differences in infant mortality rates exist between married and cohabiting mothers, or cohabiting and single mothers. One might suspect based on the patterns we see for birth outcomes and prenatal health behaviors that infants of cohabiting mothers face less of a mortality risk than infants of single mothers, but this outcome is distinct from the others discussed and altogether different mechanisms may be operating. Once more, this is an area where more research is needed to better understand if, how, and to what extent family structure impacts infant mortality in nonmarital contexts.

The Role of Family Structure for Breastfeeding

As infants progress through their first years of life, most infant health outcomes hinge upon the actions of their parents. The American Academy of Pediatrics (AAP) makes several recommendations for how to best care for infants during this critical period, one of which is that mothers breastfeed. The AAP recommends that women breastfeed their children for at least six, and preferably 12 months, as breast milk provides infants with the best possible nutrition.[40] Many factors influence women's decisions to breastfeed, including their relationship status.[41] Studies using

data from the Fragile Families and Child Well-Being Survey show that married mothers are more likely to initiate breastfeeding and to breastfeed for longer durations than are unmarried mothers.[41,42]

This rich new dataset also provides the opportunity for researchers to make comparisons across several relationship types that have been neglected in the past. The survey distinguishes not only between married and unmarried partners, but also between non-cohabiting romantic partners – termed visiting, cohabiting romantic partners, and mothers who are not romantically involved. These comparisons have proved insightful. For instance, Guzzo and Lee[42] found that mothers involved in non-cohabiting romantic partnerships are the least likely to initiate breastfeeding compared to women in all other types of relationships, including those who are single and not romantically involved. This finding suggests that relationship characteristics, beyond marital status, may influence mother's decisions to breastfeed. To further speculate, it seems possible that involvement in dating or visiting relationships may actually discourage mothers from breastfeeding.

Interestingly, Guzzo and Lee[42] also report that cohabiting mothers and mothers who are single and not romantically involved are equally likely to initiate breastfeeding. This contradicts earlier findings that suggest cohabiting mothers are far more likely to breastfeed than single mothers[29]. Kiernan and Pickett's findings are more consistent with the previously noted benefit gradient, which suggests married mothers are more likely to breastfeed, followed by cohabiting mothers, followed by mothers who are dating or single. Notably, mothers in Kiernan and Pickett's study who were not romantically involved were the least likely to breastfeed, which contrasts with Guzzo and Lee's findings.[42] Generally, married women are more likely to breastfeed, but it is not clear whether breastfeeding initiation differs among women in other types of relationships. Consequently, more research is needed to help parse out the mechanisms that influence women's decisions to breastfeed.

Poverty and Socioeconomic Status

Socioeconomic status (SES) is, of course, an important factor to consider within the context of this discussion, as it relates to both family structure and to children's health outcomes. Income and education level, in particular, have wide ranging consequences not only for women's prenatal health behaviors, birth outcomes and infant health,[28,43,44] but also for women's likelihood of marriage itself.[12] That is, unmarried mothers are far more likely to be socioeconomically disadvantaged.[13] For example, using data from the Fragile Families and Child Well-Being study, Osborne[14]

found that more than half of children born to cohabiting mothers and more than two-thirds of children born to single mothers had incomes below 150% of the poverty line. Similarly, nearly half of unmarried mothers did not complete high school compared to 20% of married mothers. Moreover, less than 2% of unmarried mothers had a college degree compared to 31% of married mothers.

Similarly, the relationship between SES and birth and infant health outcomes, is well documented. Research clearly demonstrates that disparities persist between the most and least fortunate infants and mothers.[43] For example, in a recent review of socioeconomic disadvantage and birth outcomes, Blumeshine et al[43] reported that 93 of 106 studies analyzed found a significant association between SES and birth outcomes. Additionally, of the studies that reported positive associations between SES and birth outcomes, adverse outcomes were most prevalent among the least advantaged groups.

Thus, although SES influences both the likelihood of marriage and early child health outcomes, we emphasize that virtually all of the studies reviewed here control for socioeconomic status. That is, the relationship between family structure and child health we describe above remain *after* accounting for differences among families in education and household income. This means that SES cannot explain a significant portion of the relationship between family structure and early childhood health outcomes. That said, because structural factors like SES shape the relationship trajectories of men and women, issues of selection must be addressed in studies that examine the effects of family structure on child health.

Selection

Selection remains a significant concern for researchers in this area, as most studies have struggled to establish a definitive causal link between family structure and early child health. The selection perspective holds that the relationship between family structure and early child health may in fact be driven by differences in individual characteristics of married versus unmarried parents. In other words, it is not family structure per se, that influences early child health, but that children whose parents are married fare better because adults who choose to marry are healthier, more stable, and resource-rich.[45] For example, one common concern is that because married women tend to be healthier, they are likely to have healthier babies.

Although several studies have used family-fixed-effects techniques to account for issues regarding genetics and the heritability of poor infant

health,[3-5] these studies have not evaluated whether selection into marriage results in a spurious relationship between family structure and early child health. New research by economists, Buckles and Price,[44] attempts to address the marriage selection argument head-on using sophisticated analytical techniques. Using a matched sample of children born to the same mother, they analyze individual-level variation in marital status at birth and apply fixed-effects and first-differences techniques to account for unobserved maternal characteristics. They find that demographic differences between married and unmarried women, such as age, race, and education level, account for about 63% of the marriage premium in infant mortality. They find maternal health, on the other hand, accounts for less than 6% of the marriage premium for infant mortality. Additionally, when they control for maternal demographic characteristics the marriage premium for birth weight drops by 52%. In fact, for all the infant health outcomes measured (birth weight, prematurity, Apgar scores, and infant mortality) most of the reduction in the marriage premium is explained by maternal demographic characteristics. These findings suggest women may be selected into marriage along demographic lines (age, education, and race) more so than by health status, and these demographic differences may account for a significant portion of marriage premium for infant health. That said, for less extreme infant health outcomes, selection based on characteristics that are harder to capture (eg, personality or cognitive skills) may be more salient. Buckles and Price also find evidence, however, that marriage still exhibits a significant protective effect for early child health, though it may be smaller than researchers and policy makers once believed. In fact, they estimate the marriage premium may account for roughly half of the differences in birth weight, prematurity, and infant mortality between children born to married versus unmarried parents.

Also important to note is that Buckles and Price were not able to determine whether single women were cohabiting at the time of birth because they were limited by their data—the US birth certificate Natality Detail Files. They predict, however, that if cohabiting relationships confer some of the same health benefits to children as marriage, the marriage premium for infant health should decline as cohabitation rates increase. While we readily acknowledge the selection issue remains a legitimate concern for family researchers, we argue the Buckles and Price findings indicate there is good reason to believe that family structure has a causal impact on early child health outcomes. That said, moving forward, researchers must continue to address selection concerns, as the size and scope of the influence of family structure on children's health outcomes

cannot be determined definitively without additional research that pays special attention to this issue.

Hypothesized Mechanisms Connecting Family Structure to Children's Outcomes

Theoretical mechanisms that mediate the relationship between family structure and child outcomes are numerous, multifaceted, and complex.[46] Thus far, it is unclear which mechanisms mediate the relationship between family structure and early child health specifically. Nonetheless, understanding the mechanisms by which family structure affects child health outcomes is necessary and important for policy. Here we consider how family structure influences maternal mental health, father involvement, relationship quality and parenting practices, and how these factors, in turn, might affect the child health outcomes discussed in this review. While we highlight these mechanisms in particular, this list is neither mutually exclusive nor exhaustive, as family structure is likely to influence child health through many interrelated pathways. The literature to date has focused somewhat narrowly on just a few ways in which family structure is linked to child health, namely through father involvement and relationship quality. We discuss the potential for maternal mental health and parenting practices to mediate the relationship between family structure and child health as well, because while less studied, there is some evidence to suggest they also represent potential pathways. Further, although most of the existing research on the mechanisms linking family structure and child health has focused on adolescent health outcomes, we expect that these mechanisms apply to infant health outcomes as well.

Research suggests that family structure can influence maternal mental health (eg, stress and depression), and maternal mental health has, in turn, been linked to infant health outcomes. That is, being unmarried is considered a risk factor for maternal depression.[47] Moreover, research suggests that maintaining a positive relationship with the child's biological father, rather than marital status per se, predicts less maternal parenting stress.[48] Maternal stress and depression are also linked to a host of negative infant health outcomes. For example, maternal depression and maternal stress during pregnancy have been associated with adverse birth outcomes, such as preterm birth and LBW,[47] though there is less consensus regarding this association for maternal depression.[49,50] Based on the existing body of research, we speculate that maternal mental health may mediate the relationship between family structure and child health outcomes. Still, there is a need for more

research that directly tests this pathway and pays particular attention to measurement and selection issues.[51]

Some research suggests father involvement plays a role in linking family structure to child health outcomes. Married and cohabiting fathers are more likely to be involved with their children by virtue of proximity, while men who are not married to or living with their child's mother experience more difficultly being involved, and hence participate less.[52,53] Further, nonmarital unions tend to be less stable[54] and when these relationships dissolve, father involvement drastically declines,[55] especially when the relationship is terminated when children are very young. This is significant because father involvement appears to be beneficial for birth and infant health outcomes.[56] That said, we acknowledge the potential problems with assessing the magnitude of this benefit because of important differences in how father involvement has been measured. In general, however, research suggests that fathers may have the greatest impact on infant health by encouraging or discouraging women to seek prenatal care and refrain from unhealthy behaviors, such as smoking and consuming alcohol while pregnant.[57] However, when father involvement is indicated by relationship status, merely being romantically involved with the child's father is not associated with better prenatal health behaviors for women.[57]

Similarly, the relationship between father involvement and birth outcomes is somewhat unclear, as some studies using similar measures of father involvement have produced contradictory results. Some studies report a positive relationship between father involvement and reduced risk of LBW while others find no evidence of a relationship at all.[57,58] Still, much research finds that when fathers are not involved, as indicated by partial or completely missing information on children's birth certificates, infants are more likely to be born preterm or LBW, and have higher rates of fetal, neonatal, and post-neonatal mortality.[59,60] Though inconclusive, these trends seem to suggest that father involvement is protective for birth outcomes and infant health, but in what manner and to what extent remains to be determined.

As we have previously noted, the mechanisms underlying the relationship between family structure and child health may be interrelated. For example, Misra et al[61] have suggested father involvement may improve birth and infant health outcomes by reducing maternal stress. Additionally, relationship transitions, which are more common in nonmarital unions,[54] have significant implications for children in terms of father involvement. Thus, we expect that some of the relationships between family structure and prenatal, birth, and infancy outcomes that we

have discussed here can be at least partially explained by differences in father involvement, either directly or indirectly.

The benefit of a father's involvement during pregnancy and in a child's first years of life may be tempered by poor relationship quality. While we recognize that relationship quality, as traditionally measured, pertains only to romantically partnered women, we believe this mechanism is still relevant for unpartnered mothers to the extent that a quality relationship with the child's father could infer a host of health benefits. Whether marital, nonmarital, or non-romantic, relationships that are abusive, stressful, or unstable may have negative consequences for both maternal and infant health. Indeed, poor relationship quality is negatively associated with worse outcomes for mothers' emotional health, prenatal health behaviors and child's birth weight in a graded fashion, such that as relationship quality worsens so do health outcomes.[62] Alternately, women in good relationships, compared to women in poor relationships, are less likely to experience stress or depressive symptoms, use illicit substances, or smoke during pregnancy.[62] These findings are consistent with earlier studies. For example, Kimbro[27] reported that women in poor quality relationships across family structure types exhibit poorer health behaviors during pregnancy such as smoking and drug use. Though much research has focused on the link between relationship quality and prenatal health behaviors, there is also tenuous evidence to suggest that poor relationship quality may also result in an increased risk of LBW.[62] Future research could expand upon these findings by exploring how relationship quality affects infant health outcomes beyond influencing women's prenatal health behaviors.

Parenting practices also have important consequences for child well-being.[46] That is, parenting practices may mediate the relationship between family structure and infant health by altering a child's home environment, especially in terms of parental time constraints. Simply spending time with and monitoring children is easier in two-parent homes where parents can share responsibilities. Single parents (usually mothers), on the other hand, typically have less time to spend with their children and exhibit less control over the household because, as primary care providers, they juggle more competing demands for their time.[46,63] Children thrive in environments where parents frequently spend time with them, respond to their needs, and provide emotional and physical security,[45,64] while family relations characterized by conflict, inadequate nurturing and neglect threaten child health.[64] While parenting practices clearly have no bearing on infant birth outcomes, it is possible that parenting practices could influence infant health. One study, for example,

observed that toddlers from single-parent or divorced families experienced worse health outcomes and received less medical attention than toddlers in two-parent families.[65] Because parents play a prominent role in overseeing the healthy development of their children, we speculate that parenting practices may mediate the relationship between family structure and early child health outcomes. To better understand how parenting practices might mediate this relationship, future research should explore this mechanism among more diverse family types.

Conclusion

In this article, we've reviewed numerous factors that we believe are distinctly related to family structure and early child health outcomes. We believe even after accounting for SES and selection there is a fundamental connection between family structure and health outcomes for children—beginning with pregnancy and extending into the first years of life. Understanding this connection is crucial as more American children are born outside of marriage than ever before in our nation's history,[7] and the consequences for such drastic changes to family life are both immediate and far-reaching. As we, among many others, have tried to illustrate, family structure not only plays an important role in shaping children's health early in life,[28] but in doing so creates the base conditions for adult personal, educational, and economic success.[3-5] Whereas we do not, however, suggest that marriage is innately beneficial for children's health, and it is important to note that we have only focused here on literature regarding heterosexual couples with children, we have tried to point to some of the ways in which marriage may foster a protective environment for expectant mothers and infants. By highlighting the mechanisms by which marriage serves to shelter children from adverse health outcomes, we hope to direct attention to how we can encourage similar conditions among different family structure types.

Promoting Healthy Marriages through Policy

Given the documented relationship between family structure and prenatal and early child health outcomes, it is important to assess what the role of policy might be for promoting healthy families. Marriage promotion policy has been a relatively recent response to the growing number of nonmarital births and changing family structure in the US. Federally funded marriage promotion took a turning point in 1996 when former president Bill Clinton signed the Personal Responsibility and Work Opportunity Act (PRWORA) into law, which reformed welfare requirements, created Temporary Assistance to Needy Families (TANF) as a block grant to states, and

advocated for marriage as a combatant against the increasing poverty rate and rise of single-parenthood.[66] Further emphasizing marriage promotion policy, former president George Bush signed the Deficit Reduction Act of 2005, which reauthorized the TANF program through 2010 and allocated $500 million over a 5-year period to the Healthy Marriage and Responsible Fatherhood Act.[45] In addition to the programs offered through the Healthy Marriage Initiative, the $500 million provides funding for pro-marriage media campaigns, fatherhood involvement initiatives, and marriage education classes that aim to teach couples communication and relationship skills for a successful marriage.[45,66] Despite a lack of evidence that marriage promotion programs are a solution to poverty, Congress approved a reallocation of $75 million to the Obama administration's proposed Fatherhood, Marriage, and Family Innovation Fund. Perhaps because of the inconclusive benefits of marriage promotion programs, the latest policy promotes responsible fatherhood and healthy marriages through social and economic opportunities to low-income couples.[66]

Research clearly shows that children who are raised with married parents are generally less exposed to poverty, have more economic and social resources, and experience more positive developmental outcomes than children living with one parent.[67,68] Yet perhaps for several reasons, research does not confer that marriage promotion policy – as a means of fighting poverty or reducing nonmarital childbirths – has been successful. The success of marriage education curriculum has mainly focused on white, middle-class families, who face different barriers than low-income couples in reaching and sustaining marriage.[69] This raises the issue of marriage selection, where non-marriage among low-income couples can be the result of poverty and economic uncertainty, which would confound the benefits of marriage classes that largely emphasize relationship and communication skills.[68] In order to address the specific needs of low-income families, the Administration for Children and Families launched the Building Strong Families (BSF) program, which began as a promising marriage education program directed at unmarried low-income heterosexual couples with a newborn child.[45,66] Yet there is no significant evidence that BSF helped couples stay together, get married, or improve the quality of their relationship, with the exception of some positive results for black couples in one state, Oklahoma.[66,70] Within Oklahoma, Heath[66] notes that the state uses some TANF funds to provide marriage education classes to the general public, which are often middle-class couples rather than at-risk families who are the intended audience.

Marriage promotion policies on their own do not necessarily facilitate the development of healthier family environments for child well-

being. For example, remarriage among low-income couples often creates blended or step-families rather than the two-parent biological family that children thrive in.[68] In addition, not all marriages would be beneficial to children or couples. As Cherlin[71] acknowledges, it is difficult to "support healthy marriages without concurrently supporting unhealthy marriages." While there is merit in relationship education classes, more research is needed to fully assess the long-term costs and benefits of these programs. Current research does not seem to show significant benefits of federally funded marriage initiatives, especially if the aim is to reduce poverty and single-parent households among low-income families.

Moving Forward

We suggest a critical evaluation of federal programs that specifically promote marriage and suggest exploring preventative solutions for unplanned childbearing, as well as interventions that target some of the mechanisms which connect family structure and child health. In this way, policy can seek to encourage healthy family environments for children in a comprehensive way, without encouraging marriage for marriage's sake. It is important to note that nonmarital births are not necessarily unplanned,[72] so policies addressing unplanned pregnancies do not necessarily link to those attempting to temper nonmarital births. Taking a preventative approach to nonmarital childbearing, Sawhill and colleagues suggest that expanding eligibility for family planning services through Medicaid in order to increase women's access to contraceptives, especially long-acting reversible contraceptive methods, can be a cost-effective means for preventing unintended pregnancy.[73] Making this an especially relevant suggestion, the Affordable Care Act currently gives states the option to expand Medicaid eligibility with federal support before the mandatory expansion deadline for all states on January 1,' 2014. Opting-in to early coverage could provide states the opportunity to encourage family planning by expanding contraceptive access to a greater number of women. Research also suggests that improving the education opportunities for young women can help reduce unintended childbearing.[73] Focusing attention on education is a promising avenue for addressing the fundamental causes of unintended childbearing, while improving the overall economic stability of families. By working to build the human capital of low-income young people, we can help set the stage for stable unions and planned childbearing.

In addition, policies to support strong families might work to intervene in the areas which likely connect family structure to children's outcomes, including maternal mental health, father involvement,

relationship quality, and parenting practices. First, a key component of child health is positive maternal mental health. There are several successful interventions, at least in the short-term, that improve the quality of social support networks among young mothers,[74,75] which in turn improves mental health outcomes. Although the long-term efficacy of such programs is not yet established, these interventions have the added benefit of helping mothers share information about local resources that may assist with parenting, which could also help to improve parenting knowledge and practices. In addition, social support networks are particularly important for promoting breastfeeding among low-income women.[76] Thus, an improvement in the resources and support available to mothers should improve mental health and children's outcomes, while addressing two important mechanisms connecting family structure and children's outcomes. Researchers have also assessed programs aimed at increasing father involvement. These interventions typically focus on all fathers, including those who live with their children, and find that improving the parenting skills of fathers increases the time they spend with their children.[77,78] We believe these types of programs are another way to address a factor that links family structure and children's outcomes.

Current and future policies that do promote marriage should avoid using funds that potentially take resources away from poverty policies, such as cash incentives for marriage among low-income couples.[71] It is critical to provide the resources necessary to create a strong foundation for healthy relationships and planned childbearing. In addition, the re-allocated funds under the Fatherhood, Marriage and Family Innovation Fund should focus on programs to improve maternal social support networks, particularly during pregnancy, and father involvement rather than on programs to promote marriage. All of these proposed programs also need rigorous evaluations to be sure that we are spending our federal dollars where they will have the most effective impact on children and families.

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