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The Couple Context of Pregnancy and its Effects on Prenatal Care and Birth Outcomes

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Abstract The couple context of pregnancy and newborn health is gaining importance with the increase in births to unmarried couples, a disproportionate number of which were not intended. This study investigates the association of early prenatal care, preterm birth, and low birth weight with the couple relationship context, including partners' joint intentions for the pregnancy, their marital status at conception, and the presence of relationship problems during pregnancy. Data are drawn from the first wave of the Early Childhood Longitudinal Study—Birth Cohort, a representative study of births in 2001. The sample is composed of parents residing together with their biological child at the time the child is 9 months old, where both the mother and father completed the self-report interview ($N = 5{,}788$). Couple-level multivariate logistic regression models, weighted to account for the complex sampling design, were used in the analysis. Risk of inadequate prenatal care and preterm birth was increased when partners did not share intentions or when neither partner intended the pregnancy. Couples were at additional risk of inadequate prenatal care when the pregnancy was conceived nonmaritally and when the mother did not tell the father about the pregnancy, particularly when neither partner intended the pregnancy. The risk of premature birth was particularly high when the partners were unmarried and either or both did not intend the pregnancy. The couple context of pregnancy is important for a healthy pregnancy and birth. When the partner is present, practitioners and programs should maintain a focus on the couple, and researchers should make every effort to include the father's own perspective.

Keywords Prenatal care · Preterm birth · Low birthweight · Pregnancy intentions · Nonmarital fertility

Inadequate prenatal care, preterm birth, and low birth weight can have long-term consequences for child health and wellbeing. To facilitate prevention of these health problems, their contributing factors need to be better understood. Maternal factors are clearly important, but the mother's relationship with the father has not received sufficient attention. A focus on couples is also relevant to current policies such as the Fatherhood Initiative, which emphasize the involvement of fathers.

Most research on the couple context of pregnancy health focuses on the couple's marital and residential status. Some research considers the mother's support system, including fathers, and a few studies have examined the couple's joint intentions for pregnancy. However, no research has yet considered these factors in the context of the quality of the couple's relationship, or has examined their potential interactions with one another.

These limitations can be overcome with a new dataset, the Early Childhood Longitudinal Study—Birth Cohort (ECLS-B), which includes interviews with both mothers and fathers detailing conception, pregnancy, and birth. This couple-level data allows the current study to focus on the relationship between the mother and father, including their joint intentions for the pregnancy, their marital status at the time the pregnancy was conceived, communication problems during pregnancy, and interactions between these factors. The analysis examines couples residing with their

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9-month-old children, applying dyadic analysis techniques within regression models to investigate the association between the parents' relationship and the chance of inadequate prenatal care, preterm birth, and low birth weight.

Parental Relationship

Fathers' support of mothers during pregnancy can contribute to a healthier pregnancy and birth. An analysis of couples in the ECLS-Birth Cohort study found that father involvement during pregnancy increased the woman's likelihood of receiving early prenatal care [1]. This corroborates an earlier finding, in a study of 101 mostly unmarried low-income women, that the mothers were more likely to obtain first-trimester prenatal care when they reported receiving support from their partners [2].

Social support for the mother has been found to be an important influence on low birthweight [3]. In particular, support from the baby's father may matter. An analysis using the Fragile Families and Child Wellbeing study, focusing on unmarried women with partners, found that the baby's chances of being low birthweight were reduced when the mother reported that the father had contributed financially during the pregnancy and when she reported living together with the father [4]. The social context also influences prematurity. Preterm birth has been found to be associated with maternal stress, including social stress from partners and relationships [5–7].

Thus, both early prenatal care and birthweight have been linked to the father's actions, indicating that it is important to consider the father as well as the mother. What remains to be investigated is the relationship of the mother and father with one another, and how this impacts health across pregnancy and birth. The parental relationship is profoundly affected by the transition to parenthood [8]. During this time, relationships are placed under stress, and partners whose relationships were strained prior to the pregnancy may be unable to be supportive of one another [8]. Conversely, couples in a higher-quality relationship may be able to cope more effectively with stressful transitions [9].

Pregnancy Intentions

The strain on couples may be exacerbated when the pregnancy was not intended, particularly if the parents disagree on the intentions for pregnancy. In 2001, approximately half of all pregnancies in the United States were unintended by the mother, with the unintended birthrate increasing between 1994 and 2001 [10]. This can have important consequences for the health and wellbeing of these children. Pregnancies unintended by the mother are more likely to lead to poorer health outcomes for children, both at birth and long-term [11, 12]. These health risks begin before birth, as mothers with unintended pregnancies are less likely to obtain timely prenatal care, and more likely to use tobacco and alcohol during the pregnancy [13]. Unintended pregnancies tend to occur disproportionately among women who are young, minority, low-income, and less-educated [10].

Partners do not necessarily share pregnancy intentions, making it important to consider the intentions of fathers as well as mothers. One of the few studies to consider men's intentions did so using the mother's report of her partner. Using the National Survey of Family Growth, one study found that 69% of women reported the pregnancy as wanted by both partners, 18% as wanted by neither partner, 5% as wanted by only the man, and 5% as wanted by only the woman, with a further 2% of women who did not know their partner's preference [14]. Partners are most likely to have a shared intended pregnancy if the mothers are married, White, and more-educated. A study of couples in the Philippines which used each partner's own report found that in 56% of couples both partners reported a wanted pregnancy, 11% both reported the pregnancy as unwanted, 8% were only wanted by the mother, and 27% were only wanted by the father [15].

The father's intentions may be particularly important when they contrast with the mother's intentions. A study using the ECLS-Birth Cohort to measure pregnancy wantedness found that when fathers wanted the pregnancy, even if mothers did not, then mothers were more likely to receive early prenatal care [1]. A smaller study of 300 Hispanic women also found that women with unwanted pregnancies were more likely to seek timely prenatal care if they reported that their partner wanted the pregnancy than if they reported that he did not [16]. These studies suggest that the extent to which intentions are shared provides a key indicator of the relational context of the pregnancy.

Marital Status

Parents' marital status is also an important indicator of their relationship. Rates of unintended pregnancies among unmarried women are increasing, as are the proportion of births to unmarried parents [10, 17]. Further, unmarried women are less likely than married women to report that both they and their partners wanted the pregnancy [14]. Unmarried parents face particular risk factors, including high rates of union dissolution in the first years after the baby's birth, as well as a greater likelihood than married couples of being lower-income, lower-educated and minority [18, 19]. Children born to unmarried parents are at

risk of low birthweight as well as more long-term consequences, although the characteristics of the couple's relationship may be more important than their marital status [20].

The Current Study

This study brings together multiple indicators of the couple context of pregnancy, including relationship quality, marital status, and joint pregnancy intentions, and investigates their impact across pregnancy and birth. To this end, the first aim is to describe the relationship of the couple, particularly the extent to which partners share intentions for the pregnancy. The second aim is to investigate the association between the couple context and negative pregnancy outcomes. It is expected that lack of early prenatal care, preterm birth, and low birthweight will be associated with unintended pregnancy, dissimilar pregnancy intentions, relationship problems, and nonmarital conception. As pregnancy intentions have been shown in prior studies to make a strong contribution to outcomes, the third aim will investigate the moderating effects of relationship status and problems on the association between unintended pregnancy and negative pregnancy outcomes. It is expected that this association will be stronger when partners are unmarried and have more relationship problems.

Method

Data

The Early Childhood Longitudinal Study—Birth Cohort (ECLS-B) is a nationally-representative survey of children born in the United States in 2001 [21]. This analysis relies on the first ECLS-B parent interview, conducted when the children were about 9 months old. In addition to the mother interview, fathers completed a self-administered questionnaire. Questions on the parental relationship during pregnancy were only asked of resident fathers, making it necessary to restrict the sample to parents residing with their biological child at the time the child was 9 months old. In ECLS-B there are 10,495 total families with at least a biological mother present, and of these, 8,282 (79%) also have a biological father present. Of these biological mother–father families, 2,120 (26%) fathers and 768 (9%) mothers did not complete the self-response questionnaire and thus could not be included in the analysis. The sample thus comprises 5,788 cases.

The ECLS-B data includes both mothers and fathers, making it ideal for dyadic analysis. By including both members of the couple, the analysis will have a greater level of reliability and validity in measuring couple processes [22]. However, as with all large-scale surveys, fewer men are interviewed than women, meaning that the inclusion of fathers in the study carries a potential for selection bias. Fathers with increased risk factors may be more likely to be excluded, making the current analysis a conservative test of the hypotheses. Other missing data are imputed using single imputation prior to the creation of couple-level variables, and all analyses use weights created explicitly for use with father and mother data. The couple is the unit of analysis, and independent variables are coded to take both partners into account.

Prenatal Health and Birth Outcomes

The mother's self-report is coded dichotomously to reflect receiving no prenatal care in the first trimester. Birth outcomes use birth certificate data and are also coded dichotomously to reflect preterm birth (prior to 37 weeks gestation) and low or very low birthweight (less than 2500 g).

Pregnancy Intentions

Mothers and fathers were each asked about the wantedness and the timing of pregnancy at the time of conception. Respondents were asked "At the time [you/your partner] became pregnant with your baby, did you yourself actually want to have a(nother) baby at some time?" If they responded yes, they were further asked "Did [you/your partner] become pregnant sooner than you wanted, later than you wanted, or at about the right time?" The pregnancy was coded for each partner as being intended if they responded that it was wanted and on-time or late, and as unintended if they responded either that it was not wanted or that it was wanted but early.

Wanted but mistimed is an imprecise category, as women interpret it in a wide variety of ways [23]. Because of this, this study groups all pregnancies with more ambiguous beginnings (i.e. wanted but mistimed, unwanted) to distinguish them from pregnancies which were more clearly intended (i.e. wanted and on-time).

Joint intentions were coded by cross-classifying the mother's and father's codings, which created four (2×2) mutually exclusive categories: The pregnancy was for (1) both partners intended, (2) both unintended, (3) intended by the mother and unintended by the father, or (4) intended by the father and unintended by the mother.

Marital Status

Marital status was assessed at the time of conception by questions asking mothers to identify their marital status and

date of marriage. Date of conception was calculated by subtracting gestational age at birth from the date of birth. If the marriage date was at or prior to the date of conception, the couple was coded as married at the time of conception. If the marriage date was later or the mother reported being unmarried, the couple was coded as unmarried at the time of conception.

Relationship Problems

Problems in the couple's relationship during the pregnancy were assessed through characteristics of the relationship during the pregnancy. Each of the three measures is coded dichotomously to indicate a problematic relationship. First, mothers' reports of how soon she told the father that she was pregnant are coded as within one day of finding out herself versus more than one day later. Second, fathers were asked whether or not they discussed the pregnancy at any time with the mother. Third, the accuracy of the mother's report of the father's pregnancy intentions, an indicator of partner communication, was assessed by comparing the father's response (described above) with the mother's response to a set of questions asking her to report the father's wantedness and timing of the pregnancy.

Sociodemographic and Pregnancy Characteristics

Sociodemographic status variables focus on characteristics which apply to the time of the pregnancy, and use the mother's response as well as an additional variable indicating the difference between the mother's and father's responses. Variables for mother's age, age difference between partners, mother's race/ethnicity, whether partners' race/ethnicity differed, mother's education, difference between partners, socioeconomic status, and whether the pregnancy is the first for the mother and for the father are included in all models. Models predicting birth outcomes include additional controls for smoking any cigarettes in the first trimester and a pregnancy with twins/multiples.

Analysis

The first aim of describing the couple relationship will be tested by comparing couples by pregnancy intention. The second aim will use logistic regression models to assess the association of no early prenatal care, low birthweight, and preterm birth with couple and relationship characteristics. Logistic regression tests the likelihood of an event occurring and is ideal for use with dichotomous variables. Finally, the third aim will test for moderating effects of marital status and relationship quality on intentionality. Interaction terms between joint intentions and marital status and between joint intentions and each relationship problem indicator will be included in the models to test for these effects.

Results

Table 1 details the couple context and sociodemographic characteristics of the entire sample. The age of mothers ranged from 15 to 51, with an average of 30, and fathers ranged from 16 to 73, with an average of 32. A majority of both mothers and fathers reported White, non Hispanic race/ethnicity, with a further fifth reporting Hispanic ethnicity (any race), and 12% of couples reporting differing race/ethnicities. The average education of mothers and fathers was just over high school, at 14 years. One-quarter of households has an SES in the lowest quintile, and only 13% had an SES in the highest quintile. For 38% of mothers and 38% of fathers this was their first child, although when considered together (not shown in table), in 32% of the couples it was a first child for both parents. Only 6% of the mothers reported smoking in the first trimester. Three percent of the births were multiples. Only 6% of the mothers reported no prenatal care in the first trimester. Just over 10% of the babies were born preterm, and 6% were at low or very low birthweight.

Relationship Quality and Characteristics

The first aim is to describe the partners' relationship, including quality, intentions, and marital status at the beginning of the pregnancy. Most mothers reported telling the father about the pregnancy as soon as they found out themselves, but seven percent reported hesitating before telling the father. Likewise, most fathers reported talking to the mother about the pregnancy, but eight percent did not. Fully one-third of mothers had inaccurate perceptions of their partner's intentions. Of the parents in the sample, over one-quarter were not married at the time of conception. In just under half of the couples, both the mother and the father reported that the pregnancy was intended. In about one-quarter of the couples only the mother reported an intended pregnancy, and in just over one-quarter of the couples only the father reported an intended pregnancy.

A further indication of the partners' pregnancy intentions is the extent of their concordance. A measure of the proportion of concordance between mothers and fathers can be calculated by taking the n who responded similarly divided by the total n. The proportion of specific concordance was calculated separately for responses that the pregnancy was intended and responses that the pregnancy was unintended. This proportion of specific concordance is calculated by taking the n who respond similarly on the

Table 1 Means and percentages of all variables for the total sample

	Mean (SD)	Percentage
Couple intentions for pregnancy		
Both intended		46
Mother only		24
Father only		29
Neither		12
Relationship problems		
Did not tell father about pregnancy		7
Did not talk about pregnancy		8
Inaccurate perception		33
Marital status at conception		
Married		73
Unmarried		27
Age		
Mother	29.63 (5.97)	
Father[a]	32.23 (6.76)	
Difference	3.52 (3.06)	
Race		
Mother		
White (non-Hispanic)		64
Black (non-Hispanic)		8
Hispanic (any race)		22
Asian/Pacific Islander		4
Native American Indian		1
Mixed race (self-identified)		2
Father[a]		
White (non-Hispanic)		64
Black (non-Hispanic)		9
Hispanic (any race)		22
Asian/Pacific Islander		3
Native American Indian		1
Mixed race (self-identified)		1
Different races		12
Education in years		
Mother	13.84 (2.85)	
Father[a]	13.97 (2.95)	
Difference	1.69 (1.67)	
SES of household		
1st quintile		13
2nd quintile		18
3rd quintile		20
4th quintile		24
5th quintile		25
Pregnancy characteristics		
Mother's first child		38
Father's first child		38
Mother smoked in 1st trimester		6
Twin or multiple birth		3
Pregnancy outcomes		
No prenatal care in 1st trimester		6
Preterm birth		10
Low/very low birthweight		6

Data: Early Childhood Longitudinal Study—Birth Cohort (ECLS-B) 9-month wave, $N = 5{,}788$ coresident couples with 9-month-old children

Note: All percentages are weighted

[a] Father characteristics are not included in regression models

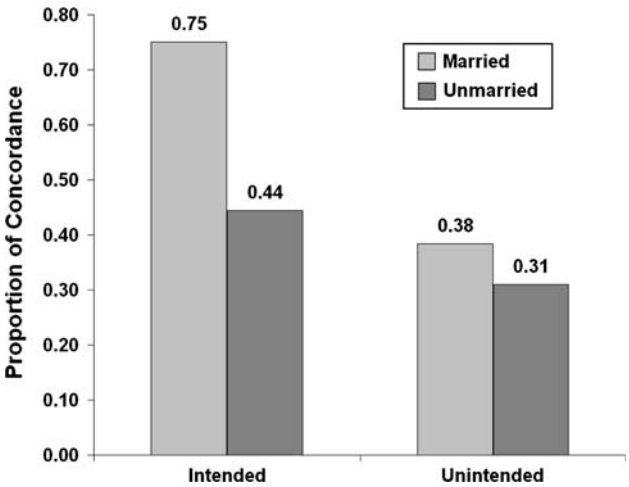

Fig. 1 Proportion of concordance for intended and unintended pregnancies, by marital status. *Data*: Early Childhood Longitudinal Study—Birth Cohort (ECLS-B) 9-month wave, $N = 5{,}788$ coresident couples with 9-month-old children

specific response divided by the total *n* where either partner gave the response. Further information about agreement and concordance indices can be found in Fleiss [24].

Concordance of pregnancy intentions is presented in Fig. 1. The clusters of bars show the proportion of couples who are in concordance that the pregnancy was intended and unintended, respectively. Comparing the concordance of married and unmarried couples, it is clear that married couples have a higher proportion of concordance than do unmarried couples. This is particularly notable for proportion of concordance on intended pregnancies, where three-quarters of married couples share a view but less than half of unmarried couples share their views.

Intentions differ markedly by couples' relationship quality and marital status, as detailed in Table 2. Couples where both partners intended the pregnancy had the fewest relationship problems and were the most likely to be married. Couples where only the mother intended the pregnancy were less often married. A particularly high

Table 2 Relationship characteristics by intention

	Intended pregnancy				
	Both	Neither	Mother	Father	
Relationship problems					
Did not tell father (%)	5	10	5	8	N, F > B N > M
Did not talk about pregnancy (%)	6	10	9	9	N, M, F > B
Inaccurate perception (%)	11	20	83	60	N, M, F > B M, F > N M > F
Unmarried at conception (%)	14	49	26	31	N, M, F > B N, F > M
N	2,580	670	1,420	1,120	

Data: Early Childhood Longitudinal Study—Birth Cohort (ECLS-B) 9-month wave, $N = 5{,}788$ coresident couples with 9-month-old children

Note: All percentages are weighted. Unweighted *N*'s are rounded to the nearest 10. Comparisons between groups represent significant chi-square tests

B Both; *N* Neither; *M* Mother; *F* Father

percentage of these mothers did not tell the father immediately, and these fathers were the least likely to talk about the pregnancy with the mothers. Mothers' perceptions of fathers' intentions were the least accurate when she intended the pregnancy but the father did not.

Pregnancy and Birth

The second aim investigates the association between the couple relationship and pregnancy outcomes. Table 3 gives the results of logistic regressions predicting adverse outcomes: no early prenatal care, preterm birth, and low birthweight. To facilitate interpretation, odds ratios (the exponentiated coefficient) are presented, along with the significance level of the coefficient.

When pregnancy outcomes are examined in the context of the couple's relationship during pregnancy, the patterns of influence differ by outcome. Compared with couples where both partners intended the pregnancy, the odds of receiving no early prenatal care were one and one-half times higher when the mother did not intend the pregnancy, even if the father did, and almost two times higher if neither partner intended the pregnancy. Couples who were not married at the time of conception also had higher odds of receiving no early prenatal care. Odds were also higher for couples with problematic relationships, particularly when the mother did not tell the father about the pregnancy.

The birth was more likely to be preterm when one or both partners did not intend the pregnancy. When the mother only, the father only, or neither partner intended the pregnancy, odds of prematurity were 1.3–1.4 times higher than when both the mother and father intended the pregnancy. Risk of low birthweight, by contrast, was not associated with intentions but was associated with the father not having discussed the pregnancy with the mother.

Interactions

The third aim is focused on the interactions of pregnancy intention with relationship problems and marital status. These interactions were investigated in the models predicting no early prenatal care and preterm birth. Because pregnancy intentions were not associated with low birth weight, interactions for this model were not tested. Logistic regressions including interactions are given in Table 4.

For early prenatal care, Fig. 2 illustrates that the mother was particularly unlikely to receive early prenatal care when she did not tell the father of a pregnancy which neither wanted or which both wanted. For mothers who did tell the father, early prenatal care was unlikely when only the father or neither partner wanted the pregnancy. Figure 3 shows that the risk of premature birth increases sharply for unmarried parents when only the father or neither parent intended the pregnancy, as compared with couples where both partners intended the pregnancy. The risk of premature birth is also higher for married couples in these groups, but it represents a more modest increase.

Discussion

When considering multiple aspects of the couple context of pregnancy, intentions for the pregnancy emerged as having the strongest association with prenatal health and birth outcomes. The risk of no early prenatal care was increased when mothers did not intend the pregnancy, and this risk

Table 3 Odds ratios of the association of couple relationship with health behaviors and outcomes

	No early care	Preterm birth	Low birthweight
Intended pregnancy			
Both (reference)			
Mother only	0.86	1.43**	1.36
Father only	1.50*	1.45**	1.43
Neither	1.98***	1.36**	0.02
Nonmarital conception	1.54**	1.05	1.45
Relationship problems			
Did not tell father	1.43*	1.30	1.05
Did not discuss pregnancy	0.79	0.96	0.87*
Inaccurate perception	1.24	0.87	1.30
Age			
Mother	1.01	1.02**	0.92***
Difference	1.01	1.01	1.02
Education			
Mother	1.03	1.03	1.01
Difference	0.95	1.05	1.03
SES			
First quartile	5.38***	1.36	1.05
Second quartile	3.83***	1.55*	1.36**
Third quartile	2.09**	1.24	1.55*
Fourth quartile	1.64*	1.25	1.24
Fifth quartile (Reference)			
Race/ethnicity of mother			
White (reference)			
Black	1.41	1.33	1.25***
Hispanic	0.94	1.09	1.33
Asian	1.77*	1.05	1.09***
Native American	1.18	0.83	1.05***
Multiracial	0.60	1.29	0.83**
Different from father	1.03	1.21	1.29
Pregnancy characteristics			
First child (mother)	1.10	1.08	0.96***
First child (father)	0.91	0.92	1.08
Twin or multiple		13.75***	1.21***
Mother smoked		1.17	13.75***
Intercept coefficient	−4.72***	−3.92***	−3.15***
Likelihood ratio chi-square (df)	201.05 (23)***	251.93 (25)***	893.99 (25)***

Data: Early Childhood Longitudinal Study—Birth Cohort (ECLS-B) 9-month wave, $N = 5{,}788$ coresident couples with 9-month-old children

* $p < .05$; ** $p < .01$; *** $p < .001$

was further exacerbated when fathers also did not intend the pregnancy. Thus, fathers' intentions had a particularly strong influence when mothers did not intend the pregnancy. Confirming the findings of Martin et al. [1] and Schafer and Lia-Hoagberg [2], mothers who did not intend the pregnancy and were at risk of not getting first-trimester prenatal care were nevertheless more likely to do so when the father intended the pregnancy than when the father also did not intend the pregnancy. It is possible that fathers with an intended pregnancy provided more support and encouragement to the mother to obtain care than did fathers who did not intend the pregnancy.

This study also found that pregnancy intentions were associated with preterm birth. In this case, a pregnancy unintended by either the mother or the father was associated with a greater risk of preterm birth. Maternal stress is a contributing factor to preterm birth [5–7], and an unintended pregnancy appears to be an important source of stress. This study indicates that a mother may experience stress not only when she herself does not intend the pregnancy, but also when her intentions for the pregnancy conflict with her partner's intentions.

Of the couples who did not share intentions, couples where only the mother intended the pregnancy appear to

Table 4 Logistic regressions with interactions between pregnancy intention and relationship characteristics

	No early care	Preterm birth
Intended pregnancy		
Both (reference)		
Mother only	2.19***	1.75***
Father only	0.92	1.36
Neither	1.87**	1.48*
Unmarried at conception	1.50**	1.35
Relationship problems		
Did not tell father	3.02***	1.28
Inaccurate perception	1.22	0.87
Did not discuss pregnancy	0.78	0.96
Interactions		
Did not tell × Mother only	0.42*	
Did not tell × Father only	0.59	
Did not tell × Neither	0.02*	
Unmarried × Mother only		0.48**
Unmarried × Father only		1.12
Unmarried × Neither		0.84
Intercept coefficient	−4.88***	−3.93***
Likelihood ratio chi-square (df)	207.47 (26)***	263.53 (28)***

Data: Early Childhood Longitudinal Study—Birth Cohort (ECLS-B) 9-month wave, $N = 5{,}788$ coresident couples with 9-month-old children

Note: Models control for age, education, race/ethnicity, SES, parity, and (for preterm birth) twin status and maternal smoking

* $p < .05$ ** $p < .01$ *** $p < .001$

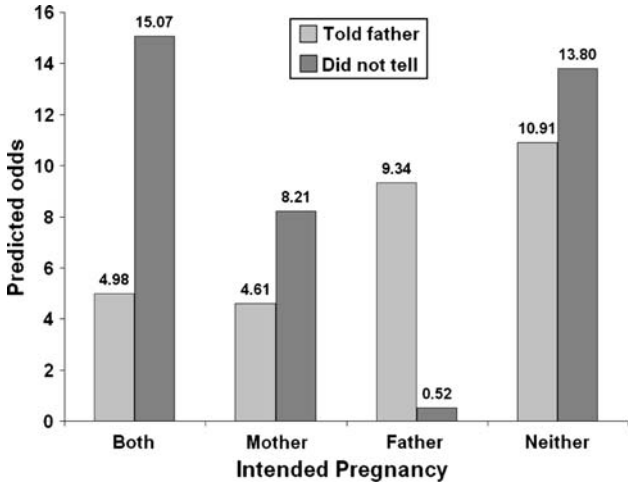

Fig. 2 Predicted odds of no early care by relationship problems and pregnancy intention. *Data*: Early Childhood Longitudinal Study—Birth Cohort (ECLS-B) 9-month wave, $N = 5{,}788$ coresident couples with 9-month-old children

have particularly problematic relationships. These mothers more often waited to inform the father of the pregnancy, and the fathers more often reported not talking about the

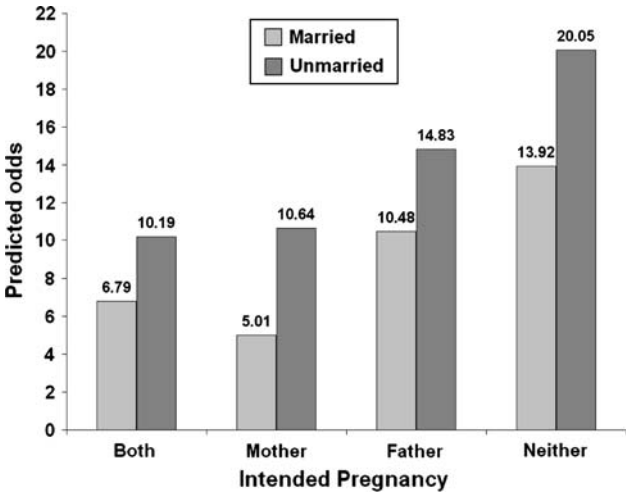

Fig. 3 Predicted odds of preterm birth by marital status and pregnancy intention. *Data*: Early Childhood Longitudinal Study—Birth Cohort (ECLS-B) 9-month wave, $N = 5{,}788$ coresident couples with 9-month-old children

pregnancy. Discordant intentions were also observed more frequently among couples who were not married at the time of conception.

Although pregnancy intentions were strongly associated with outcomes, relationship problems and marital status were also an important relational context to pregnancy health and outcomes. When the couple was not married at the time of conception, and when the mother hesitated to tell the father about the pregnancy, the mother was less likely to obtain early prenatal care. In addition, couples where the father did not talk to the mother about the pregnancy were more likely to have a low-birthweight baby. This result extends prior research showing that social support plays a role in birthweight by specifically indicating the importance of the quality of the relationship between the mother and father [3, 4]. The measures of relationship problems in this study focused on communication between the partners, and their association with health outcomes emphasizes the importance of effective communication within relationships.

This analysis is unique in considering multiple aspects of the relational context of pregnancy as well as multiple aspects of pregnancy outcomes. Considering multiple aspects of the relational context is advantageous, as intentions and relationship quality are closely intertwined. For example, a pregnancy may be considered mistimed because the individual wants children, but not necessarily with this partner. Likewise, the indicators of relationship problems used here, such as when the mother tells the father of the pregnancy, and whether the father talks with the mother about the pregnancy, are influenced by whether the pregnancy was a welcome event or a point of contention. The inclusion of both intentions and quality together

in the model enables an observation of their effects net of each other.

Considering outcomes across both pregnancy and birth helps to identify the differential processes leading up to these outcomes. Whereas no early prenatal care is associated both with intentions for the pregnancy as well as with relationship problems during pregnancy, preterm birth is more closely associated with intentions and low birthweight more closely associated with relationship problems. The comparison of these processes can be helpful to programs and policies aimed at preventing problematic birth outcomes.

It is clear that the father's intentions play an important part in the health of the pregnancy and the wellbeing of his child. This analysis heeds calls for the inclusion of the father's perspective [25, 26], and confirms that the best source of the father's view is the father himself. It is revealing that one-third of all mothers did not accurately report the father's view. Not surprisingly, inaccuracy was particularly high when the partners did not share expectations. This underscores the importance of obtaining this critical information directly from the father, rather than relying on the mother's proxy report.

This study focuses on those couples who are in an ongoing relationship with one another. This focus allowed for the inclusion of the father's perspective, but does mean that couples whose relationships ended either before the baby's birth or shortly after were not considered. At the time of the survey, 20% of the mothers reported the presence of a nonresident biological father. As these relationships most likely were more at-risk than those of the couples in the study, the effects of relationship context may be even stronger than found by the current analysis. An additional limitation of the current study is that the questions about pregnancy intention were asked retrospectively. Recall of intentions is colored by the experience of pregnancy and the relationship with the new infant. To the extent that those with more positive experiences have more positively-biased recall of intentions, this analysis may be underestimating the extent to which positive relationship quality mediates between unintended pregnancy and problematic birth outcomes.

By examining the couple context of pregnancy, this analysis found that joint intentions for pregnancy, marital status at conception, and the quality of the parental relationship during pregnancy each contribute to pregnancy and newborn health. These results underscore the importance of including men in family planning, as couples where both the man and the woman intended the pregnancy had healthier outcomes. Policy, practitioners and researchers working to achieve healthy pregnancies and healthy newborns need to ensure that, when a partner is present, a couple perspective of pregnancy is maintained. An important goal should be to help the father be supportive of the mother, encouraging her healthy behaviors and minimizing relational stress. Learning to support one another and to communicate effectively can have benefits which extend beyond pregnancy, creating a supportive family environment for the new child.

References

1. Martin, L. T., McNamara, M. J., Milot, A. S., Halle, T., & Hair, E. C. (2007). The effects of father involvement during pregnancy on receipt of prenatal care and maternal smoking. *Maternal and Child Health Journal, 11*, 595–602. doi:10.1007/s10995-007-0209-0.
2. Schafer, M. A., & Lia-Hoagberg, B. (1997). Effects of social support on prenatal care and health behaviors of low-income women. *Journal of Obstetric, Gynecologic, and Neonatal Nursing, 26*, 433–440. doi:10.1111/j.1552-6909.1997.tb02725.x.
3. Feldman, P. J., Dunkel-Schetter, C., Sandman, C. A., & Wadhwa, P. D. (2000). Maternal social support predicts birth weight and fetal growth in human pregnancy. *Psychosomatic Medicine, 62*, 715–725.
4. Padilla, Y., & Reichman, N. (2001). Low birthweight: Do unwed fathers help? *Children and Youth Services Review, 23*, 505–530. doi:10.1016/S0190-7409(01)00136-0.
5. Messer, L. C., Dole, N., Kaufman, J. S., & Savitzl, D. A. (2005). Pregnancy intendedness, maternal psychosocial factors and preterm birth. *Maternal and Child Health Journal, 9*, 403–412. doi:10.1007/s10995-005-0021-7.
6. Hobel, C. J. (2004). Stress and preterm birth. *Clinical Obstetrics and Gynecology, 47*, 856–880. doi:10.1097/01.grf.0000142512.38733.8c.
7. Dole, N., Savitz, D. A., Hertz-Picciotto, I., Siega-Riz, A. M., McMahon, M. J., & Buekens, P. (2003). Maternal stress and preterm birth. *American Journal of Epidemiology, 157*, 14–24. doi:10.1093/aje/kwf176.
8. Cowan, C. P., & Cowan, P. A. (1992). *When partners become parents: The big life change for couples*. New York: Basic Books.
9. Bradbury, T. N., Fincham, F. D., & Beach, S. R. H. (2000). Research on the nature and determinants of marital satisfaction: A decade in review. *Journal of Marriage and the Family, 62*, 964–980. doi:10.1111/j.1741-3737.2000.00964.x.
10. Finer, L. B., & Henshaw, S. K. (2006). Disparities in rates of unintended pregnancy in the United States, 1994 and 2001. *Perspectives on Sexual and Reproductive Health, 38*, 90–96. doi:10.1363/3809006.
11. Brown, S. S., & Eisenberg, L. (Eds.). (1995). *The best intentions: Unwanted pregnancy and the well-being of children and families*. Washington, D.C.: National Academy Press.
12. Axinn, W. G., Barber, J. S., & Thornton, A. (1998). The long-term impact of parents' childbearing decisions on children's self-esteem. *Demography, 35*, 435–443. doi:10.2307/3004012.
13. Altfield, S., Handler, A., Burton, D., & Berman, L. (1998). Wantedness of pregnancy and prenatal health behaviors. *Women and Health, 26*, 29–43. doi:10.1300/J013v26n04_03.
14. Williams, L. B. (1994). Determinants of couple agreement in U.S. fertility decisions. *Family Planning Perspectives, 26*, 169–173. doi:10.2307/2136242.
15. Williams, L., & Sobieszczyk, T. (2003). Couple attitudes and agreement regarding pregnancy wantedness in the Philippines. *Journal of Marriage and the Family, 65*, 1019–1030. doi:10.1111/j.1741-3737.2003.01019.x.

16. Sangi-Haghpeykar, H., Mehta, M., Posner, S., Poindexter, A. N., & II, I. (2005). Paternal influences on the timing of prenatal care among Hispanics. *Maternal and Child Health Journal, 9*, 159–163. doi:10.1007/s10995-005-3012-9.
17. Hamilton, B. E., Martin, J. A., & Ventura, S. J. (November 21, 2006). *Births: Preliminary data for 2005*. National Center for Health Statistics. http://www.cdc.gov/nchs/products/pubs/pubd/hestats/prelimbirths05/prelimbirths05.htm).
18. Carlson, M., McLanahan, S., & England, P. (2004). Union formation in fragile families. *Demography, 41*, 237–261. doi:10.1353/dem.2004.0012.
19. Smock, P. J. (2000). Cohabitation in the United States: An appraisal of research themes, findings, and implications. *Annual Review of Sociology, 26*, 1–20. doi:10.1146/annurev.soc.26.1.1.
20. Bird, S. T., Chandra, A., Bennett, T., & Harvey, S. M. (2000). Beyond marital status: Relationship type and duration and the risk of low birth weight. *Family Planning Perspectives, 32*, 281–287. doi:10.2307/2648196.
21. National Center for Education Statistics. (2004). *User's manual for the ECLS-B nine-month restricted-use data file and electronic code book*. Washington, DC.
22. Thompson, L., & Walker, A. J. (1982). The dyad as the unit of analysis: Conceptual and methodological issues. *Journal of Marriage and the Family, 44*, 889–900. doi:10.2307/351453.
23. Stanford, J. B., Hobbs, R., Jameson, P., DeWitt, M. J., & Fischer, R. C. (2000). Defining dimensions of pregnancy intendedness. *Maternal and Child Health Journal, 4*, 183–189. doi:10.1023/A:1009575514205.
24. Fleiss, J. L. (1981). *Statistical methods for rates and proportions* (2nd ed.). New York: John Wiley.
25. Becker, S. (1994). Couples and reproductive health: A review of couple studies. *Studies in Family Planning, 27*, 291–306. doi:10.2307/2138025.
26. Greene, M. E., & Biddlecom, A. E. (2000). Absent and problematic men: Demographic accounts of male reproductive roles. *Population and Development Review, 26*, 81–115. doi:10.1111/j.1728-4457.2000.00081.x.