

Exploring U.S. Men's Birth Intentions

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Abstract While recently there have been renewed interest in women's childbearing intentions, the authors sought to bring needed research attention to understanding men's childbearing intentions. Nationally representative data from the 2006–2010 National Survey of Family Growth (NSFG) was used to examine pregnancy intentions and happiness for all births reported by men in the 5 years preceding the interview. We used bivariate statistical tests of associations between intention status, happiness about the pregnancy, and fathers' demographic characteristics, including joint race/ethnicity and union status subgroups. Multivariate logistic regressions were used to calculate adjusted odds ratios of a birth being intended, estimated separately by father's union status at birth. Using comparable data and measures from the male and female NSFG surveys, we tested for gender differences intentions and happiness, and examined the sensitivity of our results to potential underreporting of births by men. Nearly four out of ten of births to men were reported as unintended, with significant variation by men's demographic traits. Non-marital childbearing was more likely to be intended among Hispanic and black men. Sixty-two percent of births received a 10 on the happiness scale. Happiness about the pregnancy varied significantly by intention status. Men were significantly happier than women about the pregnancies, with no significant difference in intention status. Potential underreporting of births by men had little impact on these patterns. This study brings needed focus to men's childbearing intentions and improves our understanding of

the context of their role as fathers. Men need to be included in strategies to prevent unintended pregnancy.

Keywords Unintended pregnancy · Pregnancy intentions · Childbearing · Men · Fathering · NSFG

Introduction

The United States has a high rate of unintended pregnancy [1] and the U.S. Department of Health and Human Services has prioritized reductions in an effort to improve the nation's health [2]. Despite on-going efforts to improve the measurement and understanding of women's childbearing intentions [3, 4], men's childbearing intentions have received limited research attention, even with increased recognition of fathers' role in child health and well being [5, 6]. Prior research on men's childbearing intentions has faced severe limitations. Some studies only examine father's intentions as reported by the mother [7, 8]; others using men's own reports drawn from small or non-representative samples [9, 10]. Research utilizing nationally representative data from the 2001 Early Childhood Longitudinal Study Birth Cohort, which interviewed fathers directly, is limited to residential fathers [11, 12]. The little we know about childbearing intentions of all fathers, regardless of residence, comes from descriptive reports of the 2002 National Survey of Family Growth (NSFG). The NSFG has a long history of monitoring women's pregnancy intentions [13]; a cohort of men was added for the first time in 2002. Both genders are asked to retrospectively report their childbearing intentions at the time of the pregnancy. Men reported 65 % of their births in the last 5 years as intended, 25 % mistimed and nearly 9 % unwanted [14] Intentions appeared to vary by the father's

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age, education, race/ethnicity, union status, and poverty status, but tests of statistical significance were not reported. To our knowledge, men's childbearing intentions have not been examined in a multivariate framework or using the more recent 2006–2010 NSFG.

To better identify the complexity of pregnancy intentions and attitudes, in 1995, the NSFG added a measure of women's level of happiness when they found out about the pregnancy [3, 15]. Other studies have also incorporated this measure and an accumulating body of research finds happiness to be an important dimension of women's pregnancy desires [16–20]. However, men's happiness about a pregnancy and its interrelationship with intentions has not been investigated. Yet men's post-conception happiness towards a pregnancy provides information beyond their pre-pregnancy intention status that may be relevant to their later fathering behaviors.

Given these gaps in the existing research, we used new nationally representative data from the 2006–2010 NSFG to examine men's reports of pregnancy intentions and level of happiness about the pregnancy for births reported in the last 5 years. First, we estimated variations in intention status of these births by men's socio-demographics; with well-established differences in family formation patterns by race/ethnicity in the US [21, 22], we focused on variation by race/ethnicity and union status. Second, we explored the relationship between pregnancy intentions and fathers' reports of level of happiness when learning of the pregnancy. Next, we examined gender differences, by comparing men's and women's reports of the intention status of births and happiness across the male and female cohorts of the NSFG. Finally, we examined the sensitivity of our results to potential underreporting of births by men [23].

Methods

Data

The National Surveys of Family Growth (NSFG) is a periodic national probability survey of the non-institutionalized population of women and men (ages 15–44 years) in the United States [24]. The 2006–2010 NSFG interviewed 10,403 men and 12,279 women, with a response rate of 75 and 78 % respectively. The survey used a multi-stage, stratified, clustered sampling frame to collect interviews continuously from June 2006 to June 2010. Methods of data collection and dissemination of the public use dataset are reviewed by the Institutional Review Board at the National Center for Health Statistics. Further information about the design of the NSFG is available at <http://www.cdc.gov/nchs/nsfg.htm>. It is important to note that the sample of men

is obtained independently of the sample of women; in other words, the males interviewed have no relationship to the females.

Measures

Men were asked to report information about each biological child; men were not asked to report pregnancies ending in abortion or miscarriage, presumably due to concerns about underreporting [25].

Pregnancy Intention

For births occurring in the 5 years preceding the interview, men were asked a series of questions to assess their feelings right before their partner became pregnant; these questions are used to classify each birth as *intended* (wanted and on time or later than wanted), *mistimed* (wanted but occurring sooner than desired), or *unwanted*.

Level of Happiness About Pregnancy

For each birth, the father was asked his level of happiness when he found out that his partner was pregnant. Responses were on a ten-point scale, ranging from 1 (very unhappy about that pregnancy) to 10 (very happy about that pregnancy).

Among men not married or not living with the baby's mother at the time of the birth, both pregnancy intentions and level of happiness were only measured among men reporting that they found out about the pregnancy before the child was born.¹ When possible, we treated men unaware of the pregnancy until after the birth as a distinct category.

Sociodemographic Variables

Measures examined include father's age at the child's birth (15–19, 20–24, 25–29, 30–44), race/ethnicity (non-Hispanic white, non-Hispanic black, Hispanic, non-Hispanic other), union status at birth (married, cohabitating, single), completed education (less than high school, high school diploma, any college) and number of prior births (0, 1–2, 3 or more). Union status at conception and household income around the time of conception or birth were not available.

Analysis

Our analytic focus was on births in the 5 years preceding the survey. We created a birth-level file for men, similar to

¹ These men were asked "When did you find out that (partner) was pregnant? Was it during the pregnancy or after the child was born?"

that provided in the NSFG for women's pregnancies. Each birth record had information specific to that child, and information about the father; men could provide more than one birth to the birth-level file. The 10,403 men interviewed in the 2006–2010 NSFG reported 2,953 singleton live births in the 5 years preceding the survey. We excluded 9 births with missing data on intention status, resulting in an analytical sample of 2,944 births. Of these births, 54 % were the only birth in the last 5 years to that father, 37 % were one of two births to that father, and the rest were one of three or more births per father in the sample.

First, we estimated variations in intention status of these births by men's socio-demographics, in bivariate analyses using paired-t tests and multivariate logistic regression models to examine factors associated with pregnancy intention, scored dichotomously [1 = intended, 0 = unintended (mistimed, unwanted, unaware)]. These multivariate models were estimated separately by father's union status at birth, given evidence of significant effect modification. To address any potential of recall bias in reporting of pregnancy intentions, we included a measure of the child's age in months in the regressions. In the second part of the analysis, we examined bivariate associations between high levels of happiness (a value of 10 on the happiness scale), pregnancy intentions, fathers' race/ethnicity, and union status. Finally, we contrasted pregnancy intentions and level of happiness for births to male respondents and female respondents, using comparable data and measures from the male and female NSFG surveys. Information about the mother's level of happiness for births was only collected for births occurring in the 3 years prior to the interview, so we limited the data on births to males accordingly. This approach resulted in a pooled sample of 3,116 births to women and 1,964 births to males within the 3 years preceding the survey. Further information about pregnancy intentions among women in the NSFG is available from other sources [1, 26]; our focus was limited to testing for gender differences.

Finally, we considered the sensitivity of our findings of gender differences to the potential underreporting of births by men. In analysis of the quality of the fertility data in young men's reports in the 2002 NSFG, Joyner et al. [23] estimated that 30 % of births among men ages 15–19 and 17 % among men ages 20–24 were not reported; Martinez et al. [14] found similar results. We conducted a sensitivity analysis in which we assumed this same level of underreporting in the current data. We added these imputed births back into the overall distributions of intention status, assuming that all of these "missing" births were not intended.

Weighted data were used to account for the complex, stratified sampling survey design. We computed standard errors and tests of significance using the *svy* command prefix in Stata 12.1 [27].

Results

Bivariate Findings

Overall, 63 % of births were intended by the father, 26 % were mistimed, and 10 % were unwanted (Table 1). Intention status was not measured for 1 % of births for which the father was unaware of the pregnancy until after the birth. Intention status varied significantly by union status at time of birth and race/ethnicity. Births to married men were significantly more likely than births to cohabitating or single men to be reported as intended, and significantly less likely to be reported as mistimed or unwanted. Births to single men were the least likely to be intended, and the most likely to be mistimed or unwanted; additionally 11 % of single men were unaware of the pregnancy prior to the birth. The distribution of intention status to cohabiting men fell in between the two other union status categories. Births to non-Hispanic white fathers were significantly more likely to be intended (66 %) than births to non-Hispanic black fathers (49 %). More than one in three births to non-Hispanic black fathers were mistimed, as compared to about one in four among non-Hispanic white or Hispanic births. The share unwanted did not differ significantly between births to Hispanic and black men, but was significantly lower among whites.

Examining union status and race/ethnicity jointly, we found that among children born to married men, whites were more likely than Hispanics to be intended (for blacks, $p = 0.087$). Conversely, a significantly greater proportion of black and Hispanic births among married fathers were unwanted than were births among married white fathers. Among births to cohabiting men, white births were significantly less likely than Hispanic ones to be intended and more likely to be mistimed. Nearly half (49 %) of all births born to single Non-Hispanic black fathers were mistimed, compared to roughly one-third among white or Hispanic single fathers. And, among births to single fathers, more than one out of four births were born to white fathers unaware of the pregnancy until after the birth (22 %), as compared to only about 5 % of births among black or Hispanic fathers.

Intention status varied significantly by the other socio-demographic traits examined. The share of births reported as intended was positively associated with both fathers' age and education. Only 7 % of births to men with no prior births were reported as unwanted, compared with 23 % of men with three or more prior births.

Multivariate Findings

Table 2 presents the results of multivariate logistic regressions estimating the likelihood of a birth being intended versus unintended, stratified by union status at

Table 1 Distribution of birth intentions by fathers' demographics, all births in last 5 years to males ages 15–44, 2006–2010 NSFG

	Unweighted N	Pregnancy intentions			
		Intended	Mistimed	Unwanted	Unaware
Total	2,944	62.9	25.7	10.3	1.2
Union status					
<i>Married</i>	1,746	74.1	19.2	6.8	n/a
Cohabiting	815	48.5***	37.3***	14.2**	n/a
Single	383	25.2***	40.8***	23.1***	10.8
Race/ethnicity					
<i>Non-Hispanic white</i>	1,295	66.3	24.4	7.7	1.6
Non-Hispanic black	532	48.6***	35.3**	14.9**	1.3
Hispanic	938	61.7	23.6	14.2**	0.5
Other	179	67.7	24.9	6.8	0.5
Union status and race/ethnicity					
Married					
<i>Non-Hispanic white</i>	952	77.1	19.0	3.9	n/a
Non-Hispanic black	188	67.7	20.5	11.8*	n/a
Hispanic	481	67.7*	18.8	13.4**	n/a
Cohabiting					
<i>Non-Hispanic white</i>	246	35.7	46.6	17.7	n/a
Non-Hispanic black	169	43.8	40.0	16.2	n/a
Hispanic	358	61.4***	27.5**	11.1	n/a
Single					
<i>Non-Hispanic white</i>	97	19.2	33.0	26.2	21.6
Non-Hispanic black	175	30.2	48.*	17.3	3.8**
Hispanic	99	26.6	37.1	30.7	5.6**
Age at birth					
<20	167	26.8***	56.1	14.2	3.0
20–24	601	43.8***	40.9***	12.5	2.8
25–29	881	63.2**	25.9**	9.9	1.0
30–44	1,295	73.2	17.0	9.3	0.6
Education					
No HS diploma	900	58.6	24.9	15.0	1.5
<i>HS diploma</i>	1,485	57.1	30.3	11.1	1.5
Bachelor's or higher	559	78.7***	17.3***	3.8***	0.2
Prior births					
<i>None</i>	1,232	59.5	32.2	6.9	1.4
1–2	1,403	67.7**	21.2***	10.6**	0.5
3+	309	52.0	21.0**	23.0***	4.0

These data reflect weighted point estimates

*** *t* test of difference from reference category (shown in italics), within intention status, $p < 0.001$

** *t* test of difference from reference category (shown in italics), within intention status, $p < 0.01$

* *t* test of difference from reference category (shown in italics), within intention status, $p < 0.05$

time of birth. Among births to married fathers, Hispanic and black men had significantly decreased odds of reporting the birth as intended than white fathers. Among births to cohabiting fathers, Hispanics and “others” had odds more than twice as large as whites of being intended; births to Hispanics were also more likely than blacks to be intended (OR = 1.9, $p = 0.028$; not shown). Among births to single fathers, blacks were 2.8 times as likely as whites to be intended.

The odds of a birth being intended increased with age among married and single fathers, but did not vary by age

among births to cohabiting fathers. Among married men, births to men with three or more prior children had significantly lower odds of being intended than to fathers with no prior children. In none of the models was length of time since birth statistically significant, indicating that length of recall does not bias the reporting of pregnancy intentions.

To test the sensitivity of these results to the inclusion of more than one birth in the sample from any individual father, we reestimated the models limited to a random birth from each father. Results were similar to the estimates shown here for all births.

Pregnancy Intentions and Happiness

Overall, we found high levels of happiness in response to the pregnancy. Sixty-two percent of births received a 10 on the happiness scale, indicating the father had been highly happy upon learning about the pregnancy, and another 18 % received a value of 7–9 (Table 3). Four percent of births are at the lowest end of the happiness scale [1–3], and 15 % have middle values. (One percent of births have no reported value, because the father was not aware of the pregnancy until after the birth.)

When examining the cross-tabulation of intention status by the happiness scale, we found that for about half of all births (52 %), fathers reported the pregnancy as intended and their response as highly happy. The remaining half of births were spread across each of the remaining combinations of intentions and happiness levels, although only about 4 % received the lowest happiness scores [1–3].

Table 4 shows proportion of births whose fathers reported the highest level of happiness (a 10 on the happiness scale), by intention status, union status and race/ethnicity. All births of which the father was unaware were assumed to be less than a 10 on the happiness scale. Level of happiness about the pregnancy varied significantly by intention status, with 82 % of intended births highly happy, compared to significantly lower proportions of mistimed (31 %) and unwanted births (18 %). Births to married men were more likely to be reported as highly happy overall,

and within each intention status group. Births to Hispanic men were significantly more likely than births to white men to be reported as highly happy, overall and within each intention status group. Overall, black fathers had the lowest share of births with high happiness levels (50 %), although they did not differ significantly from whites within any intention status.

Differences by Gender in Pregnancy Intentions and Happiness

Next, we examined differences by gender in the intention status and level of happiness of births in the last 3 years to men and women. (These results differ slightly to results reported in Tables 1, 2, 3 and 4, which included children born to men up to 5 years prior to the interview). The distribution of the pregnancy intentions of births was remarkably similar by gender. Nearly two-thirds of births to both men and women were reported as intended, and about one-quarter were mistimed (Fig. 1). The share unwanted was slightly lower for fathers (10 vs. 13 %). Yet level of happiness about the pregnancy differed significantly by gender. Overall, 75 % of births to men versus 85 % to women received a value of 7–10 on the happiness scale. In contrast, 11 % of births to women and only 5 % of births to men received values of 1–3.

Finally, we considered the sensitivity of these gender differences to an underreporting of births by young men.

Table 2 Adjusted odds ratios from logistic regression predicting birth intention, by union status at time of birth

Fathers' characteristics	Married Intended versus unintended ^a	Cohabiting Intended versus unintended ^a	Single Intended versus unintended ^a
Race/ethnicity			
<i>Non-Hispanic White</i>	1.00	1.00	1.00
Non-Hispanic Black	0.59 (0.38–0.92)*	1.39 (0.79–2.47)	2.75 (1.18–6.42)*
Hispanic	0.59 (0.35–0.98)*	2.52 (1.36–4.68)**	1.33 (0.44–4.04)
Other	0.66 (0.38–1.15)	2.28 (1.20–4.35)*	2.09 (0.39–11.19)
Age			
<20	0.06 (0.01–0.35)**	0.61 (0.27–1.37)	0.07 (0.02–0.25)***
20–24	0.26 (0.15–0.47)***	0.64 (0.37–1.11)	0.24 (0.08–0.73)*
25–29	0.56 (0.38–0.81)**	0.76 (0.42–1.37)	1.11 (0.39–3.15)
30–44	1.00	1.00	1.00
Education			
No HS diploma	1.71 (1.06–2.73)*	1.57 (0.91–2.69)	0.9 (0.39–2.05)
<i>HS diploma</i>	1.00	1.00	1.00
Any college	0.95 (0.64–1.41)	1.05 (0.57–1.93)	0.68 (0.31–1.51)
Prior births			
<i>None</i>	1.00	1.00	1.00
1–2	0.76 (0.54–1.06)	1.1 (0.73–1.66)	0.48 (0.23–1.03)
3+	0.24 (0.14–0.43)***	1.1 (0.52–2.35)	0.5 (0.17–1.47)
Age of child	1.03 (0.90–1.18)	0.98 (0.80–1.19)	1 (0.72–1.38)

^a Unintended includes mistimed and unwanted births, and births of which the father was unaware

*** $p < 0.001$

** $p < 0.01$

* $p < 0.05$

Table 3 Distribution of happiness scale, overall and by intention status, all births in last 5 years to males ages 15–44, 2006–2010 NSFG

	Total(%)	Happiness in response to pregnancy (1 = low, 10 = high)				
		1–3	4–6	7–9	10	Unaware
Overall	100	4.1	14.8	18.2	61.7	1.2
Intention status	100					
Intended		0.2	2.1	9.0	51.6	
Mistimed		2.1	7.3	8.3	8.0	
Unwanted		1.9	5.4	1.0	2.1	
Unaware						1.2

These data reflect weighted point estimates

Because births to younger fathers made up a relatively small share of all births (5 % of births were to men ages 15–19 at time of birth, and 18 % were to men ages 20–24 at time of birth), imputing the missing births to men in these age groups shifted the overall proportion intended only slightly, from 62.9 to 61.4. % Similarly, the overall proportion among births to all fathers with a value of 10 on the happiness scale declined from 61.6 to 60.2 %, if we assume that all of the missing births had a value of less than 10 on the happiness scale. Thus, the observed gender differences in level of happiness would still remain.

Discussion

In this recent national data, nearly four out of ten of births to men were reported as unintended. Intention varied

Table 4 Proportion of births for which fathers report highest happiness level about pregnancy (score = 10), by intention status, union status at birth, and race/ethnicity

	Total	Intended	Mistimed	Unwanted
Intention status				
<i>Intended</i>	82.1			
Mistimed	31.3***			
Unwanted	17.9***			
Union status				
Married	72.3	84.6	39.1	30.8
Cohabiting	49.8***	77.3	28.2*	12.8*
Single	22.8***	56.9***	15.1***	10.0**
Race/ethnicity				
Non-Hispanic White	60.7	80.6	27.3	8.0
Non-Hispanic Black	49.9**	80.4	26.0	11.4
Hispanic	68.9 *	88.0*	40.4*	35.6**

These data reflect weighted point estimates

*** *t* test of difference from reference category (shown in italics), within intention status, $p < 0.001$

** *t* test of difference from reference category (shown in italics), within intention status, $p < 0.01$

* *t* test of difference from reference category (shown in italics), within intention status, $p < 0.05$

significantly by men's life course context; unmarried fathers and younger fathers were more likely to have unintended births than married or older fathers. Unintended births also occurred differentially by race and ethnicity, with the majority of births to black men being unintended.

Even within union status categories, men's pregnancy intentions varied significantly by race and ethnicity. Among married men, white births were the most likely to have been intended. Among births born when the father was cohabiting, Hispanics were most likely to be intended. And among births born to single fathers, blacks were almost three times as likely to be intended as white births. These patterns have implications for understanding non-marital childbearing, and the delinking of marriage and fertility that has been noted by others [28, 29]. Other work suggests that a substantial share of non-marital childbearing among women is intended [30]; our findings suggest that this is also true of Hispanic and black men. Paralleling other studies, our findings suggest that among Hispanics, cohabitation appears to have greater perceived acceptability for fertility and fathering [31]. Furthermore, we found no relationship between the father's age and pregnancy intentions among cohabiting men, while among both married and single men, younger ages were associated with a lower likelihood of intended pregnancy. This finding is further evidence that men's experiences of fatherhood differ between cohabitation and marriage in significant ways.

In general, men reported very high levels of happiness about the births. However, married men were happier about their births than cohabiting or single men, and this differential was true for every intention status. Marriage still seems to provide a sense of security or acceptance that fosters more positive feelings about a pregnancy for men, even when unintended. In our analysis, Hispanic fathers were the happiest about their births, paralleling recent findings on happiness surrounding births among Hispanic mothers [20]. Reasons however, are still unknown. Are Hispanic parents more pro-natalist in their overall views of childbearing than others? In contrast, the lower levels of happiness among black men suggest that they may see fewer rewards or benefits to childbearing than white or Hispanic men.

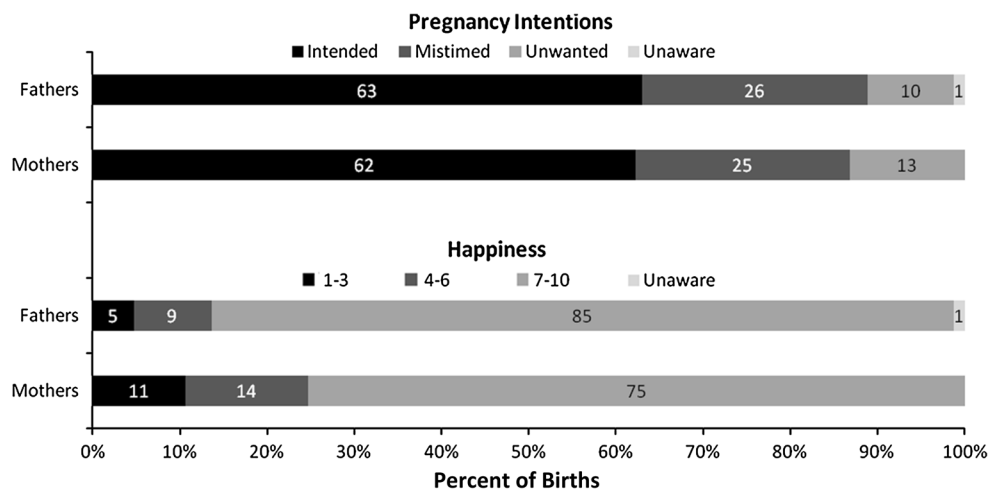


Fig. 1 Distribution of births by intention status and happiness, according to gender of parent. *Note:* These data reflect weighted point estimates

We found that intention status and happiness do not vary in a linear pattern, and unintended births co-occur with happiness. These two measures appear to tap into different, but related constructs. More research needs to consider which dimensions have the greatest implications for child health and well-being. For example, even if a pregnancy was unintended, can a happy response translate into positive parenting behaviors? Although men and women reported similar patterns of intendedness, men were happier than women when learning about a pregnancy. Men’s greater happiness may reflect gender in expectations of how a pregnancy would impact their life. In the short-term, the physical demands of pregnancy are solely on the women. And, in the longer-term, men’s demands for paternal engagement may be less, given lower rates of co-residence and other childrearing responsibilities among fathers more generally as compared to mothers.

While much of the prior research on men’s fertility intentions focuses on men as part of a couple, this study speaks to the need to understand men as individual actors, especially true for single men, whose childbearing is occurring outside of a strong partnership. Indeed, we found that the share of men unaware about the pregnancy until after the child was born, while small overall, reached substantial levels among key subgroups of men. Little is known about the implications of this issue for later father involvement, but with more than one out of ten single fathers in this situation, it seems worthy of more attention.

Further research is needed to consider how the constructs underlying the core survey items in this analysis—pregnancy intention and happiness in response to a pregnancy—vary across race/ethnicity, class and culture. More attention is need in developing items for large-scale surveys that are appropriate and meaningful for culturally diverse populations [32]. Differences in reported values

across race/ethnicity or other socio-demographic traits may represent conceptual nonequivalence, either through culturally mediated differences in meanings of the constructs, or because the construct itself lacks key dimensions for some groups [33]. For example, the structural challenges lower income men face in engaging in fatherhood may influence their response to the survey items on intention and happiness.

Limitations of this study include potential issues with retrospective reporting of pregnancy intention and happiness, although we did not identify any significant relationships to length of time since the birth. However, because intention status was measured retrospectively, certain potentially important covariates, such as income, were not measured relative to the time of the pregnancy. A second limitation is the lack of information about the mother of the child, which might be a cofounder of some of the observed relationships. Finally, since intention status was only measured in relationship to births, we could not explore men’s full range of pregnancy experiences. Interpretation and use of the findings of this study must be careful to accurately describe the data and conclusions as men’s intentions around births, not pregnancies overall.

This study raises questions about the implications for men of women’s greater control over pregnancy and reproductive decisions. The challenge is to identify ways of strengthening men’s ability to control their own reproduction without undermining women’s ability to control their lives [34]. Our understanding of how to provide reproductive health services to meet men’s needs is still in its formative stages [35, 36]. Recognizing men’s needs in this arena, and the value of helping men to plan when and how many children they have, is an important first step. We need to continue to recognize and value the role of fathers; our understanding of fatherhood as a social role is

incomplete without recognizing and accounting for men's involvement in fertility itself and the circumstances of biological fatherhood.

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