Birth Prevention Behavior among Mothers of Children with Disabilities

Maryhelen D'Ottavi MacInnes
Department of Sociology
Michigan State University

Introduction

This study explores details of the fertility behavior of mothers whose children have disabilities, focusing upon their subsequent decisions about abortion, contraception and sterilization. Given the parenting challenges faced by mothers of children with disabilities, it should not be a surprise that these mothers often decide to forgo subsequent childbearing so as to dedicate their familial resources to meeting the needs of their child with a disability. Event history analyses indicate that these mothers are, in fact, at a lower hazard of having a subsequent birth than are otherwise similar mothers whose children do not have disabilities. Subsequent analyses further indicate that these mothers are also more likely to undergo a sterilization operation and to abort a subsequent pregnancy than are mothers whose children are healthy. Moreover, these mothers seem to be opting for permanent methods of birth control over temporary ones. However, there is no difference in the likelihood of vasectomy among the husbands / male partners of these mothers.

Background literature and theory

In the contemporary United States, between 12 and 18% of children live with a limiting or disabling physical, developmental, behavioral or emotional condition. (Newacheck et al., 1998; Hogan et al., 1997). Though the study of the family impact of child disability is still in its early days, we can see in the literature that caring for a child with disability can have profound consequences for the well-being on the family, and on the child's primary caregiver in particular. Raising a child with a disability can be costly in both economic and emotional terms, and these costs can give rise to a variety of stresses. Caregiving research suggests that the provision of care for individuals with disability causes increased distress (Marks 1998). Caring for a disabled family member may leave caregivers unable or limited to participate in the workforce (Porterfield 2002), can lead to increased rates of illness among caregivers (Marks 1996), and can lead to increased rates of marital dissolution among mothers of children with disability (Spearin, Park, D'Ottavi and Goldscheider 2003), to identify a few of such outcomes. Given these economic and emotional stresses, it is reasonable to expect that parents of a child with special health needs will decide not to have additional children, thus allowing them to dedicate family resources to meeting the needs of that child. In fact, this is exactly what we see. Mothers of children with disabilities are at a lower hazard of having another child than are other mothers (D'Ottavi 2006).

Study objectives and hypotheses

This study provides additional evidence of the ways in which the disability status of a child interacts with the social and demographic characteristics of their family to motivate or suppress further childbearing. Earlier research indicated that mothers of children with disabilities are at a lower hazard of having another child. This study explores what means are taken by these mothers to lower their hazard of a subsequent birth. Specifically, this study looks at the likelihood of abortion, of male and female sterilization, and of use of other forms of contraception among mothers. I hypothesize that mothers of children with disabilities will be more likely to abort a subsequent pregnancy than are otherwise similar mothers whose children do not have disabilities. Likewise, I hypothesize that they will be more likely to undergo sterilization themselves, and that they will be more likely to have a husband / male partner who receives a vasectomy than are mothers whose children do not have disabilities, all else equal. Finally, I hypothesize that non-permanent birth control use will be higher among these mothers.

Data and methods

To explore the ways in which mothers' fertility prevention behaviors are affected by the disability status of their children, I employ several quantitative methodologies. These analyses utilize a unique data source: matched data records from the 1993 National Health Interview Survey and the 1995 National Survey of Family Growth. The 1993 NHIS provided the sampling frame for the 1995 NSFG. As a result, records from women interviewed in the 1993 NHIS can be linked to records of the same women interviewed in the 1995 NSFG. We merged these files so that the unit of analysis is a birth. The 1993 NHIS is a continuing, nationwide interview survey designed and administered by the National Center for Health Statistics (NCHS). Information is obtained about the health, disability, and other characteristics of each member of the household.

The 1995 NSFG is a nationwide survey that examines marital, fertility, contraception and employment trajectories of women ages 15-44. Like the NHIS, the NSFG is designed and administered by NCHS. Detailed information regarding full childbearing histories, employment and marital history, as well as a variety of demographic and economic characteristics, were obtained through in-person surveys and short self-administered questionnaires for 10,847 civilian, non-institutionalized women.

Findings

Abortion

Given that women are slowing or stopping subsequent childbearing in response to disability among their children, it is reasonable to think that abortion might play a role in this activity. That is, if women raising children with disability are trying to prevent subsequent births, we might see that these women are more likely to abort a subsequent pregnancy than are women whose children are healthy. To test for this relationship, I created a variable that indicates whether each child's mother terminated her next

pregnancy, and again as to whether each child's mother terminates any subsequent pregnancy.

Three hundred and fifty-five children in the sample, or 3.5%, have mothers who aborted the pregnancy that immediately followed their birth. 6.0% children have mothers who abort any subsequent pregnancy. At the bivariate level, disability is associated with the likelihood that the next pregnancy will be terminated. Six percent of children who have disability have mothers who terminate the next pregnancy, while 3.3% of children who do not have disability have mothers who terminate the next pregnancy. This association is statistically significant and has a chi square statistic of 0.004. There is also a significant relationship between the disability status of children and the likelihood that their mother will terminate any subsequent pregnancy. Nine point four percent of children who have disability have mothers who terminate a subsequent pregnancy, while 5.8% of children who do not have disability have mothers who terminate a subsequent pregnancy. This, also, is a significant relationship with a chi square of 0.002.

Table 1.1 presents the effect of children's disability status on the likelihood that their mothers will abort the following pregnancy, and on the likelihood that their mothers will abort any subsequent pregnancy. These models control for relevant covariates such as mothers' race, mothers' age at the child's birth, mothers' education, mothers' marital status at the child's birth, and the poverty status of the family at the child's birth. Race compares black, Hispanic or children whose mothers of another race to children whose mothers who are white. Age differentiates children whose mother was less than 20 or 30 or older when they were born to children whose mother was between 20 and 29. Mothers' educational attainment compares those who have less than a high school education and those with more than a high school education to those with a high school degree only. Marital status is assessed by whether mothers were married during the first year of their children's lives. Poverty status of the family indicates whether the child's birth was covered by Medicaid. These covariates are found to be significant predictors of women's abortion behavior (Jones et al. 2002). Abortions are most common among women in their early 20s, among the unmarried, the poor and near poor, among black and Hispanic women, and among women with some college education.

Children's disability status is significantly associated with the likelihood that their mothers will abort the following pregnancy. Children who have a disability are 73% more likely to have their mothers abort the next pregnancy than are otherwise similar children who do not have disabilities. Disability is also associated with the likelihood that a mother will abort any subsequent pregnancy. Here, children with disabilities are 56% more likely to have their mothers abort a later pregnancy than are children without disabilities.

Covariates in the model behave largely as would be expected from the model, with the exception of the poverty measure. Children whose mothers are of minority races are more likely to have their mother abort a later pregnancy than are children whose mothers are white. Children whose mothers were married when they were born are less likely to have mothers who abort, while children whose mother was younger are more likely, while

those whose mother was over 30 are less likely to have their mother abort a later pregnancy. Children whose mothers have less than a high school education or a high school degree are less likely to have mothers who abort a subsequent pregnancy than are those whose mother has more than a high school education, which is reasonable as women with some college abort at the highest rates, followed by women with less than a high school education. Our poverty indicator, though, is insignificant. The literature would suggest that poor or near poor mothers are considerably more likely to abort than are mothers who are not poor or near poor. In these models, we control for the poverty status of the family when the child was born by looking to whether the child's birth was covered by Medicaid. It is possible that this indicator is both a bit too crude and temporally inappropriate. That is, this measure is based upon their financial well-being at the time of the child's birth. Though poor and near poor women are more likely to abort, it is possible that some of the children whose births were covered by Medicaid were no longer in poverty by the time the outcome (aborting a subsequent pregnancy) occurred.

Sterilization

We might also anticipate that children with disabilities will be more likely to have mothers who elect to undergo surgical sterilization so as to prevent subsequent childbearing. Sterilization is the most popular method of birth control in the United States, likely due to its near 100% efficacy and the fact that it is covered by most health insurance plans (Park et al 2003). As noted, Park and colleagues (2003) found that mothers of children with disabilities are more likely to undergo sterilization than are mothers of healthy children. This model further explores this relationship by estimating the likelihood that the children in this sample will have a mother who has undergone a sterilization operation, as well as the likelihood that her husband or partner will have had a vasectomy.

For these analyses, children's mothers are considered to have been sterilized if their mothers reported that they underwent a sterilization operation after the birth of the child. Children's mothers' husbands or partners are considered to have been sterilized if their mothers reported that their husbands / partners had a vasectomy after the date of birth of the child. These analyses also control for the covariates included in the abortion analysis.

Four thousand and eighty-two children have mothers who underwent a sterilization procedure after their births (41.4%). Forty-nine point six percent of children with disabilities have mothers who had such a procedure, compared to 40.8% of children who do not have disabilities. One thousand one hundred and sixty-three children have mothers whose partners have has vasectomies (11.5%). However, roughly equivalent percentages of children with and without disabilities have mothers whose partners had a vasectomy – 11.9% of children with disabilities, and 11.5% of children who do not have disabilities. The relationship between children's disability status and the occurrence of vasectomy is not significant.

Table 1.2 presents the results for these models. We see that there is a significant relationship between children's disability status and the likelihood that their mothers will become sterilized. Children with disabilities are 37% more likely to have mothers who have a sterilization operation than are otherwise similar children who do not have disabilities. Among the other covariates, we see that children with black and Hispanic mothers are more likely to have mothers who undergo sterilization, and that mothers with lesser education are more likely to become sterilized. We also see that sterilization is more common among poor mothers, and among mothers who were married at the time of the child's birth.

However, there is no relationship between the disability status of children and the likelihood that their mothers' partners will have had a vasectomy. Children with disability are no more or less likely to have mothers whose partners have had a vasectomy. We may see this pattern because mothers serve as primary caregivers, and as such may be willing to undergo surgery in order to ensure that they do not inadvertently become pregnant. Other covariates behave as would be expected from the literature. Men of minority racial groups, poor men, and men with less education are unlikely to have a vasectomy; most men who have vasectomies are married or cohabiting (Barone et al. 2004).

Current contraceptive use

Finally, we examine the contraceptive use of children's mothers. Theoretically, I would like to be able to examine whether the mothers of children with disabilities were more likely to make use of effective, modern methods of birth control two or three years after the birth of their children. However, the NSFG only contains full birth control use histories from 1991 through 1993. Thus, for these analyses, I look to assess the effect of children's disability status on the birth control use of their mothers at the time of the interview.

All respondents reported on their current contraceptive use by method type. The types of contraception included sterilization, hormonal methods (depo provera, birth control pills, norplant, morning-after pill), barrier methods (such as condoms, diaphragm, iud, or sponge), traditional methods (withdrawal, natural family planning), or categorized women as nonusers because they were pregnant, wanted to become pregnant, were in a state postpartum infecundability, or simply were not using any methods. I look at the likelihood that children's mothers will use an effective but temporary means of contraception – hormonal methods, or barrier methods, will use an effective but permanent means of contraception, specifically, sterilization (female or male), will not use any form of contraception, or will use a less effective method such as withdrawal or rhythm.

The vast majority of the children in this sample have mothers who were using some sort of contraceptive methods. One thousand three-hundred and forty children (13.3%) have mothers who are not using a birth control method. Three hundred and eight-four (3.8%)

are users of less effective contraceptive techniques such as withdrawal or the rhythm method. The remainder are primarily users of modern methods – either having undergone sterilization or using a hormonal or barrier method. Two thousand eight-hundred and thirty-two children (28%) have mothers who are using hormonal or barrier methods. Just under 40% of children have mothers who were sterilized, while an additional 12% have mothers whose partners or husbands were sterilized.

There is a significant relationship at the bivariate level between the disability status of children and their mothers' use of modern birth control methods. While 81% of children without disabilities have mothers who make use of an effective methods of birth control, 84.3% of children with disabilities have mothers who use such means. However, we know that children with disabilities are more likely to have mothers who undergo sterilization operations. Thus, this effect of disability on modern effective contraceptive use might be carried predominantly by sterilization. Thus we must also consider the relationship between children's disability status and the nonuse of contraception by their mothers.

At the bivariate level, we see that 11.4% of children with disabilities have mothers who are not using contraception, compared to 13.4% of children without disabilities. This relationship, though, has a chi square of .15, which thus suggests that this difference is not statistically significant. We may also look to the relationship between children's disability and the use of less effective means of birth control, such as withdrawal and the rhythm method. Here, 1.9% of children with disabilities have mothers using such methods, compared to 3.9% of children without disabilities. The relationship between disability and mothers' use of these methods is significant at the bivariate level, with a chi square of .007. Finally, we can look to the bivariate relationship between children's disability and the use of modern methods aside from sterilization. There is a significant relationship between the two. Children with disabilities are less likely to have mothers who are using nonpermanent effective methods of birth control than are children who do not have disabilities. While 28.4% of children who do not have disabilities have mothers using hormonal or barrier methods, 23.1% of children who have disabilities have mothers using these methods.

At the bivariate level, it seems that children with disabilities are more likely to have mothers who attempt to prevent births, but that the means that they take are more likely to be both effective and permanent. To test this, we look to a multinomial categorical logistic regression. In this analysis, we predict the likelihood that children's mothers will be not using birth control (methods=1), using hormonal or barrier methods (methods=2), or using traditional methods (methods=3) compared to reporting sterilization as her means of birth control (methods=4). This analysis is run using the PROC CATMOD command in SAS, which predicts the likelihood of being in one of the three categories in turn compared to being in the category with the highest coding value, here, sterilization. I chose sterilization as the reference category because it is the most common approach to contraception among the sample mothers.

Table 1.3 presents the results of the multinomial categorical logistic regression predicting the likelihood of children's mothers using various types of contraception. The story is clear – mothers of children with disabilities are using effective contraceptives, but they are opting for permanent methods rather than temporary ones. Children with disabilities are less likely to have mothers who do not use birth control, or traditional methods, or temporary modern methods such as the pill or condoms. We can see this story as well when we look at these effects in a series of binomial logistic regression models.

Table 1.4 presents a series of binomial logistic regressions that further emphasize the relationship between the disability status of children and their mothers' use of contraceptives. If we consider sterilization, hormonal methods, and barrier methods to be reasonably effective methods, we can contrast the likelihood of their use compared to the use of either no method or less effective methods like the rhythm method. In this comparison, we see that children with disabilities are considerably more likely to have mothers who choose effective methods of birth control. Specifically, we see that children with disabilities are 27% more likely to have mothers who use effective means of birth control compared to otherwise similar children who do not have disabilities.

However, if we look at only those children whose mothers are using highly effective means of birth control, we can compare those who utilize sterilization (a permanent method) to those who utilize temporary methods like the pill or a diaphragm. Here, we see that children with disabilities are considerably less likely to have mothers who choose temporary methods over permanent methods. Essentially, we see that mothers whose children have disabilities are choosing to use contraception, but that they are choosing permanent methods over temporary ones.

Discussion

There is clear evidence, then, that the disability status of one's child has a profound impact on the subsequent fertility behavior of mothers. Consistently, we see evidence that these mothers are taking very deliberative action to prevent subsequent childbearing. They are more likely to abort a subsequent pregnancy, and are more likely to use very effective or permanent means of contraception. These mothers are highly likely to undergo a sterilization operation themselves, though interestingly they are no more likely to have husbands or male partners who undergo a vasectomy.

Table 1.1: Logit predicting abortion among mothers by the children's disability status

	Abort next pregnancy			Abort any subsequent pregnancy		
	β	S.E.	OR	β	S.E.	OR
Key Independent Variables						
Child with disability						
Child does not have a disability	--------	--------	--------	--------	--------	--------
Child has a disability	0.55	0.18	1.73 **	0.45	0.15	1.56 **
Control Variables						
Mother's age at child's birth						
Less than 20	0.38	0.15	1.46 **	0.50	0.11	1.66 **
20-29	--------	--------	--------	--------	--------	--------
30 and older	-0.48	0.19	0.62 ***	-0.52	0.15	0.59 ***
Mother's race						
White	--------	--------	--------	--------	--------	--------
Black	0.67	0.15	1.96 ***	0.81	0.11	2.25 ***
Hispanic	0.60	0.16	1.82 ***	0.59	0.13	1.80 ***
Other race	0.64	0.32	1.89 *	0.86	0.24	2.37 **
Mother's Education						
More than a HS degree	--------	--------	--------	--------	--------	--------
HS degree	-0.34	0.16	0.71 **	-0.28	0.10	0.76 **
Less than a HS degree	-0.35	0.13	0.70 *	-0.02	0.12	0.98 *
Mother's marital status at child's birth						
Not married	--------	--------	--------	--------	--------	--------
Married	-0.98	0.14	0.38 ***	-0.72	0.11	0.49 ***
Medicaid receipt at child's birth						
Birth not covered by medicaid	--------	--------	--------	--------	--------	--------
Birth covered by medicaid (impoverished)	-0.03	0.14	0.97	0.00	0.11	1.00

+p<0.1 *p<0.05 **p<.01 ***p<.001

Table 1.2: Logit predicting sterilixation among mothers by the children's disability status

	Mother sterilized			Mother's partner sterilized		
	β	S.E.	OR	β	S.E.	OR
Key Independent Variables						
Child with disability						
Child does not have a disability	--------	--------	--------	--------	--------	--------
Child has a disability	0.32	0.08	1.37 **	0.12	0.13	1.13
Control Variables						
Mother's age at child's birth						
Less than 20	-0.48	0.08	0.62 **	-0.75	0.22	0.47 ***
20-29	--------	--------	--------	--------	--------	--------
30 and older	-0.11	0.06	0.89 *	-0.26	0.08	0.77 **
Mother's race						
White	--------	--------	--------	--------	--------	--------
Black	0.75	0.06	2.11 ***	-1.76	0.16	0.17 ***
Hispanic	0.14	0.06	1.15 *	-0.98	0.12	0.38 ***
Other race	0.06	0.13	1.06	-0.75	0.22	0.47 ***
Mother's Education						
More than a HS degree	--------	--------	--------	--------	--------	--------
HS degree	0.62	0.05	1.85 ***	-0.05	0.07	0.95
Less than a HS degree	0.84	0.07	2.32 ***	-0.75	0.15	0.47 ***
Mother's marital status at child's birth						
Not married	--------	--------	--------	--------	--------	--------
Married	0.40	0.06	1.50 ***	1.19	0.17	3.27 ***
Medicaid receipt at child's birth						
Birth not covered by medicaid	--------	--------	--------	--------	--------	--------
Birth covered by medicaid (impoverished)	0.23	0.06	1.26 ***	-1.11	0.15	0.33 ***
Intercept	-1.31	0.07		-2.40	0.18	

+p<0.1 *p<0.05 **p<.01 ***p<.001

Table 1.3: Logit predicting contraceptive use among mothers by the children's disability status

	No birth control use compared to sterilizatoin				Hormonal or barrier methods compared to sterilization				Traditional methods compared to sterilization			
	β	S.E.	OR		β	S.E.	OR		β	S.E.	OR	
Key Independent Variables												
Child with disability												
Child does not have a disability	--------	--------	--------		--------	--------	--------		--------	--------	--------	
Child has a disability	-0.34	0.13	0.71	*	-0.81	0.30	0.44	***	-0.81	0.30	0.44	**
Control Variables												
Mother's age at child's birth												
Less than 20	-0.22	0.05	0.80	***	-0.33	0.04	0.72	***	0.24	0.15	1.27	
20-29	--------	--------	--------		--------	--------	--------		--------	--------	--------	
30 and older	-0.10	0.04	0.91	*	-0.04	0.03	0.96		-0.15	0.06	0.86	*
Mother's race												
White	--------	--------	--------		--------	--------	--------		--------	--------	--------	
Black	-0.02	0.09	0.98		-0.31	0.07	0.73	***	-1.03	0.19	0.36	***
Hispanic	0.33	0.09	1.39	***	0.22	0.07	1.25	**	-0.16	0.16	0.86	
Other race	0.78	0.16	2.17	***	0.02	0.15	1.02		0.44	0.25	1.56	+
Mother's Education												
More than a HS degree	--------	--------	--------		--------	--------	--------		--------	--------	--------	
HS degree	-0.49	0.07	0.61	***	-0.61	0.05	0.54	***	-0.41	0.12	0.67	***
Less than a HS degree	-0.38	0.09	0.68	***	-0.91	0.08	0.40	***	-0.56	0.19	0.57	**
Mother's marital status at child's birth												
Not married	--------	--------	--------		--------	--------	--------		--------	--------	--------	
Married	-0.71	0.08	0.49	***	-0.47	0.07	0.63	***	-0.24	0.18	0.79	
Medicaid receipt at child's birth												
Birth not covered by medicaid	--------	--------	--------		--------	--------	--------		--------	--------	--------	
Birth covered by medicaid (impoverished)	0.16	0.08	1.17	+	-0.02	0.07	0.98		-0.33	0.18	0.72	+
Intercept	-0.52	0.11			0.04	0.09			-2.06	0.24		

+p<0.1 *p<0.05 **p<.01 ***p<.001

Table 1.4: Logit predicting types of contraceptive use among mothers

	Use of effective method compared to traditional or none				Use of barrier or hormonal compared to sterilization			
	β	S.E.	OR		β	S.E.	OR	
Key Independent Variables								
Child with disability								
Child does not have a disability	--------	--------	--------		--------	--------	--------	
Child has a disability	0.24	0.11	1.27	*	-0.35	0.10	0.71	***
Control Variables								
Mother's age at child's birth								
Less than 20	-0.19	0.09	0.83	*	0.73	0.08	2.06	***
20-29	--------	--------	--------		--------	--------	--------	
30 and older	-0.21	0.07	0.81	**	0.07	0.01	1.07	
Mother's race								
White	--------	--------	--------		--------	--------	--------	
Black	0.08	0.07	1.09		-0.31	0.07	0.73	***
Hispanic	-0.17	0.07	0.85	*	0.25	0.07	1.28	***
Other race	-0.66	0.13	0.52	***	0.02	0.15	1.02	
Mother's Education								
More than a HS degree	--------	--------	--------		--------	--------	--------	
HS degree	0.22	0.06	1.24	***	-0.62	0.05	0.54	***
Less than a HS degree	-0.01	0.08	0.99		-0.89	0.08	0.41	***
Mother's marital status at child's birth								
Not married	--------	--------	--------		--------	--------	--------	
Married	0.44	0.07	1.55	***	-0.49	0.07	0.61	***
Medicaid receipt at child's birth								
Birth not covered by medicaid	--------	--------	--------		--------	--------	--------	
Birth covered by medicaid (impoverished)	-0.05	0.07	0.95		-0.02	0.07	0.98	
Intercept	1.17	0.08			0.12	0.08		

+p<0.1 *p<0.05 **p<.01 ***p<.001

Barone, M., C. Johnson, M. Luick, D. Teutonico, and R. Magnani (2004) Characteristics of Men Receiving Vasectomies in the United States, 1998-1999. *Perspectives on Sexual and Reproductive Health*. 36(1): 27-33.

D'Ottavi, M. (2006) So Long as the Baby is Healthy: The Effect of Disability in Children on Mothers' Subsequent Childbearing. Unpublished Dissertation Manuscript.

Hogan, D., Msall, M., Rogers, M., & Avery, R. (1997). Improved disability population estimates of functional limitation among American children Age 5-17. *Maternal and Child Health Journal*, 1, 203-216.

Jones, R,, J. Darroch and S. Henshaw (2002) Patterns in the Socioeconomic Characteristics of Women Obtaining Abortions in 2000-2001. *Perspectives on Sexual and Reproductive Health*. 34(5): 226-235.

Marks, N. (1998). Does it hurt to care? Caregiving, work-family conflict and midlife well-being. *Journal of Marriage and the Family,* 60 (4), 951-966

Newacheck, P. et al. (1998) An epidemiologic profile of children with special health care needs. *Pediatrics* 102(1): 117-124.

Park, J., D. Hogan and F. Goldscheider (2003) Child Disability and Mother's Tubal Sterilization. *Perspectives on Sexual and Reproductive Health*. 35(3): 138-143.

Porterfield, S. (2002). Work choices of mothers in families with children with disabilities. *Journal of Marriage and the Family,* 64, 972-981.

Spearin, C., J. Park, M. D'Ottavi, and F. Goldscheider (2003). Child disability and marital stability: Evidence using matched records from the 1993 NHIS and the 1995 NSFG. Poster presented at the PAA Annual Meeting.