



SPECIAL ISSUE: Sexual and Reproductive Health of Women with Disability  
Research paper

## Live birth, miscarriage, and abortion among U.S. women with and without disabilities



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### ABSTRACT

**Background:** Prior studies have found that women with disabilities who give birth are more likely to have preterm deliveries and low birthweight infants. However, it is not known what proportion of pregnant women with disabilities experience live birth, versus miscarriage or abortion.

**Objective:** To compare proportions of live birth, miscarriage, and abortion among women with basic action difficulties, women with complex activity limitations, and women without disabilities in a nationally representative sample.

**Methods:** We analyzed pooled Medical Expenditure Panel Survey (MEPS) data from Panels 1–11 (covering years 1996–2007), which included a Pregnancy Detail module assessing outcomes for women who were pregnant during panel participation. We used chi-square tests and multivariable logistic regression to compare disability groups on pregnancy outcomes.

**Results:** Among women with a recorded pregnancy outcome, women with disabilities were less likely to have live births (80.8% of women with basic action difficulties and 75.3% of women with complex activity limitations versus 85.0% of women without disabilities), but differences related to disability were not significant when adjusting for covariates. Women with complex activity limitations were significantly more likely to report miscarriages, even when controlling for covariates. Disability was not significantly associated with abortion in the adjusted analysis.

**Conclusions:** Our findings add to the growing literature on pregnancy outcomes among women with disabilities, providing important information about outcomes that are not reflected in delivery records. We found few differences between women with and without disabilities, and good likelihood of live birth among women with disabilities experiencing pregnancy.

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Recent research has found that women with disabilities are as likely as women without disabilities to experience pregnancy, when controlling for other sociodemographic characteristics associated with pregnancy.<sup>1,2</sup> Multiple studies have reported that women with disabilities who give birth are more likely than their counterparts without disabilities to experience a range of adverse outcomes, including preterm birth, infants born at low birthweights, and cesarean deliveries.<sup>3–10</sup> However, most of the research

to date on pregnancy outcomes for women with disabilities has been based on data from deliveries. Much less is known about miscarriages and abortions among women with disabilities, or about the proportions of women with disabilities whose pregnancies end in live births.

Data from the general population indicate that approximately 15–17% of recognized pregnancies in the U.S. end in miscarriage.<sup>11,12</sup> An estimated 21–26% of pregnancies end in induced abortion, although that proportion has been decreasing over time.<sup>13</sup> While various sociodemographic and health characteristics have been associated with each of these outcomes,<sup>14,15</sup> little is known about the relationship between maternal disability and miscarriage

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or abortion. As interest in childbearing increases among women with disabilities<sup>16,17</sup> a better understanding is needed of the likelihood of live birth and the risk for miscarriage and abortion.

Disability can be a challenging construct to measure in research studies.<sup>18</sup> Medical care is often focused on specific diagnoses, and analysis of medical records may necessitate approximating disability based on diagnosis codes. However, disease and disability are conceptually distinct.<sup>19</sup> The International Classification of Functioning, Disability and Health (ICF) defines disability as an interaction of an individual's impairments with characteristics of the environment, resulting in restricted ability to carry out social roles or access needed services.<sup>20</sup> Secondary data sources rarely include information on environmental supports and barriers; therefore, disability is typically assessed through self-report of functional ability and participation restrictions when such data are available. e.g.<sup>2,21–27</sup> Research examining specific conditions associated with self-report of functional or participation limitations has found that common underlying conditions include arthritis, back problems, other musculoskeletal problems, pulmonary problems (e.g. COPD, asthma), neurologic conditions and injuries (e.g. spinal cord injury and other forms of paralysis, multiple sclerosis, cerebral palsy, spina bifida, muscular dystrophy), and heart disease.<sup>28,29</sup> Functional limitations are frequently grouped into broad categories reflecting difficulty performing basic actions such as movement, vision, hearing, or cognition.<sup>18,19</sup> Each of these categories of disability may also include difficulty with more complex tasks such as activities of daily living (ADLs, e.g. bathing or dressing), instrumental activities of daily living (IADLs, e.g. shopping or preparing meals), or participation in social roles such as work or recreation.<sup>18</sup>

The present study used nationally representative survey data to: 1) compare pregnancy outcomes (live birth, miscarriage, abortion) among women with basic action difficulties, women with complex activity limitations, and women without disabilities in the U.S.; and 2) examine factors associated with these pregnancy outcomes in each group of women.

## Methods

Data for this study came from the household interview component of the Medical Expenditure Panel Survey (MEPS). The Agency for Healthcare Research and Quality (AHRQ) has conducted the MEPS since 1996 as a way to provide nationally representative data on health and utilization of healthcare among non-institutionalized individuals. The MEPS uses an overlapping panel design with a new panel selected each year from the previous year's National Health Interview Survey sample.<sup>30,31</sup> Panel members participate for a 2-year period, during which they complete five in-person interviews.

The survey administered to the first 11 MEPS panels (covering the years 1996–2007) included a Pregnancy Detail module asking about complications and outcomes for women who reported being pregnant during their panel participation. We combined data across these 11 panels for our analyses. The primary question of interest from the Pregnancy Detail module was a question about live birth. If a woman was pregnant in a previous interview round but was not currently pregnant during a subsequent interview round, the following question was asked: "Did the pregnancy end in a live birth?" If the answer was no, the specific type of non-live birth outcome was coded as miscarriage, stillbirth, abortion, or unspecified. Interviewers were instructed not to probe if the answer to the question was no and the respondent did not elaborate. Specific types of non-live birth outcomes were only coded if the respondent volunteered that information, which 96% of respondents who said no to the live birth question did. Numbers of stillbirths and unspecified non-live births were very small, with

sample sizes insufficient for analyzing by disability status. We therefore focused our analyses on live birth, miscarriage, and abortion.

We created a dichotomous variable indicating whether or not a woman experienced a live birth. The live birth variable was coded as 1 if a woman delivered a live baby at least once during her panel participation and 0 if a woman had one or more birth outcomes recorded but none of them were live births. We also created dichotomous variables indicating whether a woman had a reported miscarriage or abortion. The miscarriage variable was coded as 1 if a woman reported at least one miscarriage during her panel participation and 0 if a woman had one or more birth outcomes recorded but none of them were miscarriages. A similar variable was created for abortion. Creating these non-mutually exclusive variables meant that, if a woman had more than one of these outcomes during her two years of panel participation, she was included in the count for each outcome type. For example, if a woman experienced both a miscarriage and a live birth, she was analyzed as having each of those outcomes. However, if she had more than one occurrence of the same type of outcome (e.g. multiple miscarriages), she was not counted multiple times. In other words, we analyzed the proportions of women experiencing each type of outcome, not the total number of each outcome.

We defined disability based on responses to MEPS questions about difficulty performing physical, cognitive, or sensory functions. These categories reflect broad functional categories described in the ICF.<sup>20</sup> Informed by the work of Altman and Bernstein,<sup>18</sup> we created a 3-level variable subdividing the disability group according to whether or not complex activity limitations were also present. The three categories were: 1) no disability (reference group); 2) basic action difficulties only; 3) complex activity limitations. Basic action difficulties were identified by affirmative responses to one or more MEPS survey questions about: 1) any degree of difficulty with physical functions such as walking, standing, bending, lifting, reaching, or grasping; 2) any difficulty seeing (while wearing glasses, if used); 3) any difficulty hearing (with a hearing aid, if used); and 4) any cognitive limitations such as confusion, memory loss, or difficulty making decisions. Women were coded as having a complex activity limitation if they had positive responses to one or more MEPS items about: 1) receipt of help or supervision with personal care such as bathing, dressing, or getting around the house; 2) receipt of help or supervision using the telephone, paying bills, taking medications, preparing light meals, doing laundry, or going shopping; 3) limitations in ability to work at a job, do housework, or go to school; and 4) limitations in participating in social, recreational, or family activities. While complex activity limitations can be present in people with any type of disability, prior analyses of MEPS data have noted they are rare among people with sensory disabilities, much more common for people with physical disabilities or cognitive limitations, and especially prevalent among people with more than one type of basic actions difficulty.<sup>32</sup>

Covariates included in our analyses were age, marital status, race/ethnicity, education, family income as a percentage of Federal Poverty Level (FPL), perceived physical health status, region, and panel. Age was grouped as follows: 18–24 years (reference group), 25–29 years, 30–34 years, and 35–44 years. Marital status was dichotomized into married (reference group) and not currently married. Race and ethnicity were grouped into the mutually exclusive categories of non-Hispanic White (reference group), non-Hispanic Black, non-Hispanic other or mixed race, and Hispanic of any race. Education was dichotomized into those with some education beyond high school (reference group) and those with a high school education or less. Family income was also dichotomized at an income equal to or above 200% FPL (reference) versus below

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