Published in final edited form as:
Disabil Health J. 2014 April ; 7(2): 181–188. doi:10.1016/j.dhjo.2013.12.002.

General Health, Health Conditions, and Current Pregnancy Among U.S. Women with and without Chronic Physical Disabilities

Lisa I. Iezzoni, MD, MSc[a,c], **Jun Yu, MSc**[a], **Amy J. Wint, MSc**[a], **Suzanne C. Smeltzer, RN, EdD**[e], and **Jeffrey L. Ecker, MD**[b,d]

[a]Mongan Institute for Health Policy, Massachusetts General Hospital

[b]Department of Obstetrics and Gynecology, Massachusetts General Hospital

[c]Department of Medicine, Harvard Medical School

[d]Department of Obstetrics and Gynecology, Harvard Medical School

[e]Center for Nursing Research, Villanova University College of Nursing

Abstract

Background—Although increasing numbers of reproductive-age U.S. women with chronic physical disabilities (CPD) are becoming pregnant, little is known about their general health or comorbid health conditions.

Objectives—To explore general health and comorbid health conditions among women with and without CPD by current pregnancy status.

Methods—We analyzed responses of 47,629 civilian, noninstitutionalized women ages 18–49 from the 2006–2011 National Health Interview Surveys. The survey asks about: various movement difficulties; selected adult health conditions; self-reported general health; and current pregnancy. We identified women with CPD using responses from 8 movement difficulty questions.

Results—6,043 (12.7%) women report CPD. Among nondisabled women, 3.8% report current pregnancy, as do 2.0% of women with CPD. Among currently pregnant women with CPD, 29.1% report fair or poor health, compared with only 3.2% of nondisabled pregnant women. Currently pregnant women both with and without CPD are significantly less likely to report coexisting health conditions than nonpregnant women. Nonetheless, among currently pregnant women with CPD, only 24.5% report no coexisting conditions, while 28.7% report 1, 22.8% report 2, 13.2% report 3, and 10.8% report 4–6 health conditions. In a multivariable regression controlling for age category, health status, and health conditions, CPD is not statistically significantly associated with current pregnancy.

Conclusions—According to national survey data, it appears that pregnant women with CPD may have a complex mix of health problems and often experience fair or poor health. Better

Authors report no conflicts of interest.

understanding the obstetrical and subspecialty needs of these women with multimorbidities requires additional investigation.

Keywords

disability; pregnancy; mobility; comorbidities; National Health Interview Survey

Introduction

Increasing numbers of American women with chronic physical disabilities (CPD) are becoming pregnant.[1] Our recent analyses of National Health Interview Survey (NHIS) data found that approximately 163,700 U.S. women with CPD – defined here as mobility difficulties involving upper or lower extremities – become pregnant at some point each year.[2] With expanding populations of reproductive-age women with CPD,[3–6] the numbers of pregnancies will likely continue rising. Learning more about the health of women with CPD who become pregnant is critical to anticipating their prenatal care and obstetrical needs and the full range of services required to optimize maternal health during pregnancies, safely deliver healthy babies, and maximize post-partum outcomes.

Our previous analyses focused on comparing demographic characteristics and current pregnancy rates of women with and without CPD.[2] We have also identified the conditions underlying women's CPD and the associations of different causal conditions with current pregnancy.[7] Here, we compare women's self-reported general overall health status and common health conditions, again examining women by pregnancy status and CPD. Others have found that persons with disabilities have worse self-reported general health than do other individuals.[8–11] In particular, Chevarley and colleagues found that women who report at least one functional limitation are much more likely than other women to report fair or poor health.[12] However, no prior research has considered this issue in pregnancy. NHIS is one of few data sets containing nationally-representative information on current pregnancy and various health conditions. We took advantage of these data to explore the hypotheses that: differences in the burden of illness – nature and extent of health conditions – contribute to differences in self-perceived general overall health between women with and without CPD; and these factors (general health, health conditions) contribute to differences in pregnancy rates between women with and without CPD.

This study therefore has three goals: (1) To compare the self-reported general overall health status of women with and without CPD by whether the women are currently pregnant; (2) Regardless of pregnancy status, to examine how self-reported health conditions contribute to the general overall health differences observed between women with and without CPD; and (3) To examine the associations of general overall health status, health conditions, and CPD with current pregnancy. While NHIS data do not provide the in-depth clinical insights and the detailed data that will ultimately be required to determine the clinical services needed by pregnant women with CPD, these data provide useful preliminary evidence on this topic.

Methods

Data

Another publication describes our data and CPD measure in detail.[2] Briefly, we downloaded the 2006–2011 NHIS Public Release data from the National Center for Health Statistics (NCHS) Web site (http://www.cdc.gov/nchs/surveys.htm). NHIS surveys U.S. civilian, noninstitutionalized, community residents, oversampling black, Hispanic, and Asian populations; all survey instruments and details about the sampling approach are available on

the NCHS Web site. Sophisticated sampling methods yield sampling weights that allow calculation of nationally representative figures.

Since 1997, the Basic Module or Core NHIS questionnaire has contained three components: Family Core, Sample Adult Core, and Sample Child Core. The Family Core gathers information on all family members. The analysis reported here uses data from the Sample Adult Core, which asks detailed health and functional status questions of one randomly selected family member who is 18 years of age or older; women ages 18–49 are asked whether they are "currently pregnant." A knowledgeable adult family member provides proxy responses when sampled adults are physically or mentally unable to respond. The 2011 Sample Adult Core, for example, had 33,014 individual respondents (response rate = 81.6%), with 465 proxy responses.[13]

The 2006–2011 Sample Adult Core data contained 157,351 individuals. As detailed elsewhere,[2] we first selected the 47,886 women ages 18–49 from these 2006–2011 surveys and then eliminated women with: missing responses to the pregnancy question (0.2%); no responses to the 8 functional status questions for determining CPD (0.3%); and reported Alzheimer's disease (7 women). Our final sample of 47,629 women had 263 (0.6%) proxy respondents.

Chronic Physical Disability Indicator

To identify women with CPD, we started with the algorithm created by NCHS analysts using NHIS data to determine "movement difficulty severity" for *Disability and Health in the United States, 2001–2005*.[14] The NCHS algorithm uses responses from the "Adult Health Status and Limitations" section in the Sample Adult Core questionnaire, which inquires about various types of functional limitations using the following question stem:

> The next questions ask about difficulties you may have doing certain activities because of a HEALTH PROBLEM. By "health problem" we mean any physical, mental, or emotional problem or illness (not including pregnancy). By yourself, and without using any special equipment, how difficult is it for you to …

Response categories are: "not at all difficult" (score = 0); "only a little difficult" (score = 1); "somewhat difficult" (score = 2); "very difficult" (score = 3); "can't do at all" (score = 4); "do not do this activity" (score = 6); and "refused" and "don't know." The NCHS algorithm considers only movement difficulties with reported scores of 2, 3, or 4.

The movement difficulty severity algorithm uses responses to questions about health-related difficulties performing the following 8 actions:

- Walking a quarter mile (reported by 39.0% of our final sample of 6,043 women with CPD, see below);
- Walking up 10 steps without resting (27.9%);
- Standing for about 2 hours (52.3%);
- Sitting for about 2 hours (35.9%);
- Stooping, bending, or kneeling (62.1%);
- Reaching up over their head (19.7%);
- Using fingers to grasp or handle small objects (17.1%); and
- Lifting or carrying something as heavy at 10 pounds (28.4%).

Interviewees can report as many difficulties as they wish. In our final sample of women with CPD, 34.9% reported 4 or more types of difficulties.[2]

As described in detail elsewhere,[2] applying the NCHS "movement difficulty severity method" algorithm to the 47,629 women in our sample initially identified 6,766 women with movement difficulties. Given our research goals, we then refined our CPD indicator through three steps. First, although the functional limitations question stem explicitly asks respondents not to mention difficulties caused by pregnancy, a follow-up question about what caused the limitation(s) found that 138 (2.0% of the 6,766 women) reported that pregnancy had caused their difficulties. Given the goals of our study, we eliminated from the CPD group these 138 women. Second, we eliminated women (n = 280, 4.1%) who reported that conditions (e.g., intellectual disabilities, psychiatric or mental health problems, substance abuse) other than physical health problems caused their movement difficulties. Finally, we removed women (n = 305, 4.8%) who reported that the causes of their impairments were not "chronic." After modifying NCHS's algorithm with these three exclusions, the 47,629 women in our final sample split into 6,043 (12.7%) with CPD and 41,586 (40,863 + 138 pregnancy cause + 280 non-physical cause + 305 not chronic, 87.3%) without CPD.

Self-Reported Health and Health Conditions

The Sample Adult Core asks respondents about their "health in general." Response categories are "excellent," "very good," "good," "fair," and "poor." In its "Adult Conditions" section, the questionnaire asks whether respondents have "ever been told by a doctor or other health professional that [they] had" various health conditions. These Adult Condition questions are separate from queries about health problems that caused self-reported functional impairments. Questions about diabetes specifically exclude gestational diabetes. Certain Adult Conditions are time-limited and unlikely to have significant consequences on pregnancies (e.g., "hay fever," sinusitis, "head cold or chest cold in last two weeks"); we did not consider these generally short-term conditions. We included only those Adult Conditions that might affect obstetrical risks because of their underlying pathophysiology (e.g., asthma limiting gas exchange), complications of treating those conditions (e.g., fetal effects of medications for rheumatoid arthritis), or other medical issues.[15–21]

Analysis

All analyses used SAS Version 9.2 (Cary, NC). We employed NHIS sampling weights, including for calculating percentages. Our descriptive analyses use χ^2 tests to assess bivariable associations. We produced adjusted odds ratios (AOR) and 95% confidence intervals (CI) for having each of 13 health conditions and 2 or more of these health conditions using age category and CPD as predictor variables in 14 multivariable logistic regression analyses. In addition, we conducted two series of multivariable logistic regression analyses, in each series producing one to four models by stepping in additional predictor variables. First, we predicted self-reported fair or poor health with three models: (1) age category; (2) age category + dummy variables for each health condition; and (3) age category + health conditions + CPD. Second, we predicted current pregnancy with four models: (1) age category; (2) age category + general health level; (3) age category + general health + dummy variables for each health condition; and (4) age category + general health + health conditions + CPD. Because of strong relationships between age and disability level and between age and pregnancy,[2] we use age as our key sociodemographic control variable. The small number of pregnancies complicates the inclusion of other demographic predictor variables. Details about the sociodemographic characteristics of the population are available elsewhere.[2]

Results

Across all women, regardless of pregnancy, women with CPD are significantly more likely to report fair or poor general health than are other women: 35.0% versus 4.6%. After adjusting for age category, the AOR (95% CI) of reporting fair or poor health for women with CPD compared to women without CPD is 10.3 (9.5, 11.3).

As shown in Table 1, these global patterns persist when looking separately at women by pregnancy status. Among all women regardless of CPD, those who are pregnant report significantly better general health than do nonpregnant women. However, even among pregnant women, women with CPD have much higher self-reported fair or poor health (28.1%) compared with women without CPD (3.2%).

Health Conditions and Fair or Poor General Health Regardless of Pregnancy

To examine our hypothesis about the contribution of health problems to differences in self-reported fair or poor health between women with and without CPD, we first conducted analyses disregarding pregnancy status (i.e., combining all women regardless of pregnancy). Table 2 shows the percentages of women with and without CPD who report various health conditions and the AOR (95% CI) of reporting the health condition for women with CPD. Women with CPD are substantially more likely to report each health condition than women without CPD: while 59.8% of nondisabled women report no health conditions, only 13.4% of women with CPD report no health conditions. Women with CPD also are substantially more likely to report more than one health problem (AOR = 9.0).

We then performed three multivariable logistics regressions to predict fair or poor health across all women, regardless of pregnancy. As shown on Table 3, increasing age is significantly associated with the likelihood (AOR, 95% CI) of reporting fair or poor health. Not surprisingly, each health condition is also significantly associated with reporting fair or poor health, with especially high AORs for kidney and liver conditions (AOR = 3.8), diabetes (3.7), stroke (3.2), and coronary heart disease (2.7). The third model stepped in CPD: even controlling for age category and health conditions, CPD is significantly associated with reporting fair or poor health, with a larger AOR (5.1) than for any other predictor variable.

Pregnancy and Health Conditions

For all women, those who report current pregnancy are significantly ($p \leq 0.0001$) less likely to report health conditions (Table 4). For women without CPD, currently pregnant women report on average (mean [standard deviation]) only 0.4 (0.02) of the 13 health conditions, while nonpregnant women report 0.6 (0.01, $p \leq 0.0001$) conditions. In contrast, for women with CPD, currently pregnant women report 1.6 (0.15) of the 13 health conditions, compared with 2.4 (0.03, $p \leq 0.0001$) for nonpregnant women. These mean numbers of conditions mask the wide prevalence of health conditions among women with CPD who are currently pregnant: among these women, only 24.5% report no health conditions, while 28.7% report one, 22.8% report two, 13.2% report three, and 10.8% report four to six health conditions. Within each type of health condition, women with CPD are generally less likely to be pregnant than are women without CPD (Table 4); the one exception is angina pectoris, where women with CPD have higher pregnancy rates than women without CPD (1.6% compared with 0.9%), but this difference is not significant. Many of these differences are not statistically significant, perhaps because of small sample size.

Finally, we ran four multivariable logistic regressions predicting current pregnancy, adding sequentially to the models age category, self-reported general health, the 13 health conditions, and CPD (Table 5). After controlling for age, fair or poor general health is

associated with a lower adjusted odds of pregnancy, but with marginal statistical significance. Among the health conditions, arthritis, joint symptoms, and ulcers are significantly associated with lower adjusted odds of pregnancy. In the complete model, CPD is not statistically significantly associated with current pregnancy (i.e., after controlling for the other covariates, CPD does not significantly predict current pregnancy).

Discussion

While women with CPD are less likely to be currently pregnant than nondisabled women, those women with CPD who are pregnant seem healthier than their nonpregnant peers. Nonetheless, compared with nondisabled pregnant women, women with CPD who are currently pregnant report being in fair or poor general health roughly nine times more often. In addition, almost half of pregnant women with CPD report two or more health conditions.

Thus, women with CPD who are currently pregnant appear to carry a more complex burden of health conditions than do nondisabled pregnant women. Although multimorbidity is typically viewed as affecting older adults,[22, 23] reproductive-age women with CPD – including those who are currently pregnant – appear to have high rates of multiple health conditions. This finding suggests the importance of maximizing women's health before and throughout pregnancy to ensure the highest likelihood of successful outcomes.

The prevalence of chronic health conditions highlights the need for preconception care, counseling, and planning, so that women are as healthy as they can be when they starting trying to conceive. For instance, if women are taking medications to treat a coexisting health condition, considering how the drugs might affect pregnancy will be critical and should be addressed before women conceive. Prenatal care clinicians will need to address complex health concerns and collaborate with other health care practitioners, perhaps representing multiple specialties and disciplines (e.g., medicine, nursing midwifery), caring for these women. This will require coordinating care and communicating effectively among clinicians and possibly across clinical disciplines to ensure that all practitioners are thoroughly informed about the status of women's various health conditions, especially as delivery approaches. Despite these compelling preconception and prenatal care needs, a strong body of evidence suggests that women with CPD confront a range of barriers to obtaining this care. High levels of poverty and unemployment, low levels of education, and other socioeconomic stressors can reduce their access to care, including not only direct services but also medications and other treatments.

Some of the 13 health conditions considered here could represent the cause of women's CPD rather than coexisting or comorbid conditions. As noted above, elsewhere we explore the underlying conditions reported by interviewees as causing their CPD and associations of these conditions with current pregnancy.[7] In an appendix to this article, we cross-tabulate the reported causal conditions with the 13 health conditions for women with CPD. Substantial – but not complete – overlap exists between conditions reported as causing CPD and clinically similar (or identical) health conditions. For example, 86.3% of women who indicated that arthritis caused their CPD also report arthritis in the separate health condition questions; this gap could represent women's perceptions of their role of their arthritis or be an artifact caused by phrasing of the different survey questions. Most importantly, however, large percentages of women with CPD report other health conditions beyond those causing their disabilities. For example, among women who reported that arthritis has caused their CPD, 41.3% also report hypertension, 31.4% asthma, 21.3% chronic obstructive pulmonary disease (COPD), and 14.7% diabetes, among other health conditions. This argues that clinicians and obstetrical centers caring for these women must be prepared to address concerns beyond mobility-related issues.

This research has important limitations related to its data source. The cross-sectional nature of the data only allows us to look at statistical associations, not to make causal inferences. Proxies rather than the woman herself provided a small percentage of the responses. The quality of the pregnancy indicator, data about self-reported health conditions, and functional difficulties (source of CPD information) is unknown. Although women were told not to report functional impairments related to pregnancy, it is possible that reports of "general health" among pregnant women could reflect pregnancy experiences. However, the persistent differences in perceptions of general health between pregnant women with and without CPD argue that pregnancy is not alone responsible. Respondents may either over- or underreport health concerns for a variety of reasons, including cultural factors and gender role expectations.

While NHIS contains fairly extensive lists of questions about both functional difficulties and specific health conditions, it nonetheless does not address some important issues. Especially pertinent when examining CPD, it does not ask about use of specific mobility assistive technologies, such as wheelchairs or walkers. The Sample Adult Core questionnaire does ask about whether a health problem causes interviewees to use "special equipment, such as a cane, a wheelchair, a special bed, or a special telephone." But the variety of assistive technologies encompassed by this question makes it too vague for our purposes. In addition, although NHIS asks about common health conditions, it does not inquire about all comorbid conditions interviewees might have. Finally, although we used multiple years of data, the numbers of women with CPD is relatively small, as is that subset who report current pregnancy. Small numbers precluded more in-depth analyses.

Conclusions

Despite these limitations, these data offer new insights into the general health and specific health conditions of U.S. women with CPD who are currently pregnant. Most striking is the high prevalence of multiple health conditions among women with CPD – many diagnoses unrelated to the women's CPD – including women who are currently pregnant. As noted above, pre-conception counseling and maximizing women's health across all conditions before pregnancy would likely heighten the likelihood of good outcomes. Obstetricians will likely need to collaborate with other medical specialists, in addition to practitioners from nursing and midwifery, while providing obstetrical care to women with CPD. Coordinating this care across clinical disciplines could be challenging, requiring open and frequent communication and sharing of health records. Ensuring that all their clinical practitioners are fully informed is an important issue for pregnant women with CPD and multiple health conditions, with the patient-centered goal of maximizing their likelihood of having safe pregnancies, healthy babies, and optimal post-partum outcomes.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgments

This work was funded by the National Institute for Child Health and Human Development, Grant No. 5R21HD068756-02.

References

1. National Institute of Child Health and Human Development, Office of the Director. [Accessed May 2, 2010, 2010] Pregnancy and women with physical disabilities. http://www.nichd.nih.gov/about/meetings/2010/012610.cfm

2. Iezzoni LI, Yu J, Wint AJ, Smeltzer SC, Ecker JL. Prevalence of current pregnancy among US women with and without chronic physical disabilities. Med Care. 2013; 51(6):555–562.10.1097/MLR.0b013e318290218d [PubMed: 23604018]
3. Field, MJ.; Jette, AM., editors. Institute of Medicine, Committee on Disability in America Board on Health Sciences Policy. The Future of Disability in America. Washington, D.C: The National Academies Press; 2007.
4. Lollar, D., editor. Launching into Adulthood. An Integrated Response to Support Transition of Youth with Chronic Health Conditions and Disabilities. Baltimore: Paul H. Brookes Publishing Co; 2010.
5. Alley DE, Chang VW. The changing relationship of obesity and disability, 1988–2004. JAMA. 2007; 298(17):2020–2027.10.1001/jama.298.17.2020 [PubMed: 17986695]
6. Reilly JJ, Kelly J. Long-term impact of overweight and obesity in childhood and adolescence on morbidity and premature mortality in adulthood: Systematic review. Int J Obes (Lond). 2011; 35(7):891–898.10.1038/ijo.2010.222 [PubMed: 20975725]
7. Iezzoni LI, Yu J, Wint AJ, Smeltzer SC, Ecker JL. Conditions causing disability and current pregnancy among US women with chronic physical disabilities. Med Care. 2014; 52(1):20–25.10.1097/MLR.0000000000000015 [PubMed: 24220686]
8. Drum CE, Horner-Johnson W, Krahn GL. Self-rated health and healthy days: Examining the "disability paradox". Disabil Health J. 2008; 1(2):71–78.10.1016/j.dhjo.2008.01.002 [PubMed: 21122714]
9. Horner-Johnson W, Dobbertin K, Lee JC, Andresen EM. Disparities in chronic conditions and health status by type of disability. Disability Health J. 2013; 6(4):280–286.
10. Iezzoni LI, McCarthy EP, Davis RB, Harris-David L, O'Day B. Use of screening and preventive services among women with disabilities. Am J Med Qual. 2001; 16(4):135–144. [PubMed: 11477958]
11. Stineman MG, Ross RN, Maislin G, Iezzoni L. Estimating health-related quality of life in populations through cross-sectional surveys. Med Care. 2004; 42(6):569–578. [PubMed: 15167325]
12. Chevarley FM, Thierry JM, Gill CJ, Ryerson AB, Nosek MA. Health, preventive health care, and health care access among women with disabilities in the 1994–1995 national health interview survey, supplement on disability. Womens Health Issues. 2006; 16(6):297–312.10.1016/j.whi.2006.10.002 [PubMed: 17188213]
13. Division of Health Interview Statistics, National Center for Health Statistics. National Health Interview Survey (NHIS). Public use data release. NHIS survey description. 2008 Jun.
14. Altman, B.; Bernstein, A. Disability and Health in the United States, 2001–2005. Hyattsville, MD: National Center for Health Statistics; 2008.
15. National Institute for Health and Care Excellence. [Accessed December 12, 2013] NICE guideline 63: Diabetes in pregnancy: Management of diabetes and its complications from preconception to the postnatal period. http://www.nice.org.uk/guidance/cg63
16. American College of Obstetrics and Gynecology. ACOG committee opinion. Obstetric management of patients with spinal cord injuries. Number 275, September 2002. Committee on obstetric practice. American college of obstetrics and gynecology. Int J Gynaecol Obstet. 2002; 79(2):189–191. [PubMed: 12481757]
17. Simpson LL. Maternal cardiac disease: Update for the clinician. Obstet Gynecol. 2012; 119(2 Pt 1):345–359.10.1097/AOG.0b013e318242e260 [PubMed: 22270287]
18. Dombrowski MP, Schatz M. ACOG Committee on Practice Bulletins-Obstetrics. ACOG practice bulletin: Clinical management guidelines for obstetrician-gynecologists number 90, February 2008: Asthma in pregnancy. Obstet Gynecol. 2008; 111(2 Pt 1):457–464.10.1097/AOG.0b013e3181665ff4 [PubMed: 18238988]
19. Salani R, Billingsley CC, Crafton SM. Cancer and pregnancy: An overview for obstetricians & gynecologists. Am J Obstet Gynecol. 201310.1016/j.ajog.2013.12.002
20. Vellanki K. Pregnancy in chronic kidney disease. Adv Chronic Kidney Dis. 2013; 20(3):223–228.10.1053/j.ackd.2013.02.001 [PubMed: 23928386]

21. Hazes JM, Coulie PG, Geenen V, et al. Rheumatoid arthritis and pregnancy: Evolution of disease activity and pathophysiological considerations for drug use. Rheumatology (Oxford). 2011; 50(11):1955–1968.10.1093/rheumatology/ker302 [PubMed: 21890617]

22. U.S. Department of Health and Human Services. Multiple Chronic Conditions-A Strategic Framework: Optimum Health and Quality of Life for Individuals with Multiple Chronic Conditions. Washington, DC: Dec. 2010

23. Salive ME. Multimorbidity in older adults. Epidemiol Rev. 201310.1093/epirev/mxs009

Table 1

Age, Race, Ethnicity, and Self-Reported General Health by Chronic Physical Disability and Current Pregnancy
Total n = 47,629

Characteristics	All women		Women without CPD		Women with CPD	
	Pregnant		Pregnant		Pregnant	
	Yes	No	Yes	No	Yes	No
Sample size	1,685	45,944	1,557	40,029	128	5,915
% in paired yes/no columns	3.5%	96.5%	3.8%	96.2%	2.0%	98.0%
Age in years: mean (SD)	27.8 (0.2)	34.0 (0.1)*	27.7 (0.2)	33.4 (0.1)*	29.5 (0.9)	38.2 (0.2)*
Age category: %						
18–24	31.0%	21.3%*	31.4%	22.8%*	24.7%	10.6%*
25–29	32.5	14.8	32.7	15.7	30.5	8.7
30–34	23.0	14.4	22.9	14.9	23.8	11.2
35–39	10.7	15.1	10.5	15.0	13.3	15.8
40–44	2.4	16.7	2.4	15.9	3.0	22.3
45–49	0.4	17.7	0.1	15.7	4.7	31.4
Race: adjusted [a]						
White only	3.5%	96.5%	3.8%	96.2%	1.7%	98.3%
Black only	3.4	96.6	3.5	96.5	2.8	97.2
Asian only	3.8	96.2	3.9	96.1	2.5	97.5
Other including multiple race	3.7	96.3	3.8	96.2	2.6	97.4
Ethnicity: adjusted [a]						
Hispanic	4.6%	95.4%*	4.9%	95.1%*	2.3%	97.7%
Not Hispanic	3.3	96.7	3.5	96.5	1.9	98.1
Health in general: adjusted % [a,b]						
Excellent	38.9%	34.2%*	40.2%	37.8%§	20.3%	9.5%+
Very good	33.9	33.6	34.9	35.4	20.3	21.1
Good	22.1	23.7	21.4	22.2	31.3	34.1
Fair	4.3	6.8	2.9	4.2	22.0	25.0

Characteristics	All women		Women without CPD		Women with CPD	
	Pregnant		Pregnant		Pregnant	
	Yes	No	Yes	No	Yes	No
Poor	0.7	1.6	0.3	0.4	6.1	10.2

p values for comparisons by whether or not currently pregnant (paired columns) for different groups of women

[*] $p \leq 0.0001$

[+] $p \leq 0.001$

[§] $p \leq 0.01$

[a] Percents adjusted by age-category

[d] Percents do not add to 100 because of other and missing responses (not shown)

Disabil Health J. Author manuscript; available in PMC 2015 April 01.

Table 2

Self-Reported Health Conditions and Adjusted Odds Ratios of Reporting Health Condition by Chronic Physical Disability
Total n = 47,629

Health conditions[a]	No CPD[b] n = 41,586	CPD[b] n = 6,043	AOR[c] (95% CI)
Arthritis	2,622 (6.7%)	2,524 (42.5%)	8.4 (7.8,9.2)
Symptoms of joint pain/aching/stiffness past 30 days	6,251 (15.4)	3,825 (63.3)	8.4 (7.8,9.0)
Hypertension	4,774 (10.9)	1,934 (30.8)	2.9 (2.7,3.2)
Coronary heart disease	203 (0.5)	257 (3.9)	6.6 (5.2,8.4)
Angina pectoris	135 (0.3)	129 (2.1)	5.9 (4.3,8.1)
Other heart condition/disease	1,332 (3.5)	639 (10.3)	2.9 (2.5,3.3)
Stroke	189 (0.4)	214 (3.5)	6.0 (4.6,7.9)
Asthma	4,912 (12.1)	1,591 (26.4)	2.8 (2.6,3.1)
Chronic obstructive pulmonary disease	1,267 (3.0)	847 (14.3)	5.1 (4.5,5.8)
Diabetes	1,059 (2.3)	628 (10.1)	3.6 (3.2,4.1)
Ulcer	1,736 (4.2)	862 (14.4)	3.4 (3.0,3.7)
Cancer	1,192 (3.0)	488 (8.2)	2.2 (2.0,2.5)
Kidney and liver conditions	503 (1.1)	442 (7.4)	6.5 (5.4,7.7)
2 or more health conditions	6,277 (15.2)	3,928 (65.0)	9.0 (8.3,9.7)

[a] Ever told by doctor or other health care professional that has the condition (except for joint symptoms, which are respondents' self-report)

[b] Percentages are adjusted for age category and use number in the header row as the denominator

[c] Adjusted odds ratio (AOR) for CPD (reference = no CPD) from multivariable logistic regression predicting specific health condition; predictor variables = age category, CDP (yes/no). Women without CPD = reference group.

Table 3

Associations of Age Category, Health Conditions, and CPD with Self-Reports of Fair or Poor Health
Total n = 47,618

Characteristic	Age category only	Age category + health condition	Age category + health condition + CPD
	adjusted odds ratio (95% confidence interval)		
Age category			
18–24 (reference)	1.00	1.00	1.00
25–29	1.4 (1.1,1.6)	1.2 (1.0,1.4)	1.2 (1.0,1.4)
30–34	1.7 (1.4,1.9)	1.2 (1.1,1.5)	1.2 (1.0,1.4)
35–39	2.2 (1.9, 2.6)	1.4 (1.2,1.7)	1.3 (1.1,1.6)
40–44	2.6 (2.3, 3.1)	1.4 (1.2,1.6)	1.2 (1.0,1.5)
45–49	3.3 (2.8, 3.9)	1.3 (1.1,1.5)	1.1 (0.9,1.3)
Health condition			
Arthritis		2.2 (1.9, 2.4)	1.5 (1.3, 1.7)
Symptoms of joint pain/aching/stiffness past 30 days		2.1 (1.9, 2.3)	1.4 (1.2,1.5)
Hypertension		2.1 (1.9, 2.4)	1.9 (1.7, 2.1)
Coronary heart disease		2.7 (1.9, 3.8)	2.2 (1.5, 3.2)
Angina pectoris		1.8 (1.1, 2.7)	1.7 (1.1, 2.5)
Other heart condition/disease		1.4 (1.2, 1.6)	1.3 (1.1,1.5)
Stroke		3.2 (2.2, 4.5)	2.7 (1.8, 3.9)
Asthma		1.5 (1.4, 1.7)	1.4 (1.2, 1.5)
Chronic obstructive pulmonary disease		2.1 (1.8, 2.5)	1.8 (1.5, 2.1)
Diabetes		3.7 (3.1, 4.4)	3.3 (2.8, 4.0)
Ulcer		1.7 (1.5, 2.0)	1.6 (1.4,1.8)
Cancer		1.8 (1.4, 2.1)	1.7 (1.4, 2.1)
Kidney and liver conditions		3.8 (3.1, 4.7)	3.1 (2.5, 3.8)
Chronic physical disability			
No (reference)			1.00
Yes			5.1 (4.6, 5.7)

Table 4

Self-Reported Health Conditions by Chronic Physical Disability and Currently Pregnant

Health conditions[a]	All women (n = 47,629)		Women without CPD (n = 41,586)		Women with CPD (n = 6,043)	
	% with condition[b]	% currently pregnant[c]	% with condition[b]	% currently pregnant[c]	% with condition[b]	% currently pregnant[c]
Arthritis	11.2%	1.2%	6.7%	1.3%	42.5%*	1.0%
Symptoms of joint pain/aching/stiffness past 30 days	21.4	1.9	15.4	2.2	63.3*	1.3§
Hypertension	13.4	2.0	10.9	2.2	30.8*	1.4
Coronary heart disease	0.9	0.8	0.5	0.8	3.9*	0.7
Angina pectoris	0.5	1.3	0.3	0.9	2.1*	1.6
Other heart condition/disease	4.3	3.1	3.5	3.3	10.3*	2.4
Stroke	0.8	1.6	0.4	1.9	3.5*	1.3
Asthma	13.9	3.5	12.1	4.0	26.4*	2.1§
COPD[d]	4.4	2.1	3.0	2.8	14.3*	1.1#
Diabetes	3.3	1.9	2.3	2.7	10.1*	0.6§
Ulcer	5.5	1.6	4.2	1.7	14.4*	1.4
Cancer	3.7	1.9	3.0	2.3	8.2*	1.0
Kidney and liver conditions	1.9	2.1	1.1	2.8	7.4*	1.4
Two or more conditions	21.5	1.8	15.2	2.0	65.0*	1.4

p values for comparisons of women with versus without CPD

*p ≤ 0.0001

§p ≤ 0.01

#p ≤ 0.05

[a]Ever told by doctor or other health care professional that has the condition (except for joint symptoms, which are respondents' self-report)

[b]Percentage uses number in the top cell (header cell) as the denominator

[c]Percentage uses number of respondents reporting the condition as the denominator

[d] COPD = chronic obstructive pulmonary disease

Table 5

Associations of Age Category, Self-Reported General Health, Health Conditions, and CPD with Current Pregnancy
Total n = 47,618

Characteristic	Age category only	Age category + general health	Age category + general health + health condition	Age category + general health + health condition + CPD
	adjusted odds ratio (95% confidence interval)			
Age category				
18–24 (reference)	1.00	1.00	1.00	1.00
25–29	1.5 (1.3,1.8)	1.5 (1.3,1.8)	1.5 (1.3,1.8)	1.5 (1.3,1.8)
30–34	1.1 (0.9,1.3)	1.1 (0.9,1.3)	1.1 (1.0,1.4)	1.1 (1.0,1.4)
35–39	0.5 (0.4, 0.6)	0.5 (0.4, 0.6)	0.5 (0.4, 0.6)	0.5 (0.4, 0.6)
40–44	0.1 (0.1, 0.2)	0.1 (0.1, 0.2)	0.1 (0.1, 0.2)	0.1 (0.1, 0.2)
45–49	0.02 (0.01, 0.04)	0.02 (0.01, 0.04)	0.02 (0.01, 0.05)	0.02 (0.01, 0.05)
Self-reported general health				
Excellent (reference)		1.00	1.00	1.00
Very good		1.0 (0.8, 1.1)	1 (0.9,1.2)	1.0 (0.9,1.2)
Good		1.0 (0.8, 1.1)	1 (0.9,1.2)	1.0 (0.9,1.2)
Fair or poor		0.8 (0.6, 1.0)	0.9 (0.7, 1.2)	0.9 (0.7,1.2)
Health condition				
Arthritis			0.7 (0.5, 0.9)	0.7 (0.5, 0.9)
Symptoms of joint pain/aching/ stiffness past 30 days			0.7 (0.6, 0.9)	0.7 (0.6, 0.9)
Hypertension			0.9 (0.7, 1.1)	0.9 (0.7, 1.1)
Coronary heart disease			0.5 (0.2,1.4)	0.5 (0.2, 1.4)
Angina pectoris			0.8 (0.2, 3.3)	0.8 (0.2, 3.3)
Other heart condition/disease			1.3 (0.9, 1.7)	1.3 (0.9, 1.7)
Stroke			1.3 (0.6, 2.8)	1.3 (0.6, 2.8)
Asthma			1.0 (0.9, 1.2)	1.0 (0.9, 1.2)
Chronic obstructive pulmonary disease			0.8 (0.6, 1.2)	0.8 (0.6,1.2)
Diabetes			1.1 (0.5, 2.2)	1.1 (0.5, 2.2)
Ulcer			0.6 (0.4, 0.9)	0.6 (0.4, 0.9)
Cancer			1.0 (0.6, 1.5)	1.0 (0.6,1.5)
Kidney and liver conditions			0.9 (0.6, 1.6)	0.9 (0.6, 1.6)
Chronic physical disability				
No (reference)				1.00
Yes				1.0 (0.8, 1.3)