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Health Insurance Coverage Predicts Lower Childbearing among Near-Poor Adolescents

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Abstract

Purpose—The impact of health insurance on adolescent childbearing takes on increased salience in the context of the ongoing U.S. healthcare debate. Health insurance coverage is important for accessing healthcare services, including reproductive health services, yet prior research has not examined the association between insurance coverage and childbearing. Consequently, the role of insurance in the prevention of adolescent childbearing has been unclear.

Methods—Using three panels (2001, 2004, and 2008) of the nationally representative Survey of Income and Program Participation (SIPP) data, hierarchical multilevel logistic regression models test the association between pre-pregnancy health insurance coverage and childbearing for a sample of 7,263 unmarried adolescent women (aged 16–19), controlling for known correlates of adolescent childbearing. Analyses examine variations in the association based on family income.

Results—The odds of reporting childbearing are almost twice as great for adolescents who were uninsured compared with those who were insured before a pregnancy occurred. Interaction models demonstrate this effect for near-poor adolescents (who are less likely to have health insurance coverage) compared to poor and more advantaged adolescents.

Conclusions—The findings of the current nationally-representative study suggest that health insurance coverage is associated with a lower probability of childbearing for near poor adolescents. Future research should examine potential mechanisms through which insurance coverage influences adolescent childbearing.

Keywords

adolescent childbearing; health insurance; fertility; reproductive behavior

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^aData limitations prevent us from obtaining exact dates of childbirth events. The sample was restricted to observations when women were age 19 and younger. Observations by those age 20 were excluded, even though their reported births may have occurred when they were age 19, resulting in a lower birth rate for our sample than is typically reported.

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Introduction

Evidence regarding the impact of health insurance coverage on adolescent childbearing is important in the context of the ongoing healthcare debate in this country, from both health science and public policy perspectives. Insurance coverage potentially lowers the likelihood of adolescent childbearing by increasing access to reproductive health services (“services”). Yet no nationally-representative studies in the U.S. address this salient issue for both adolescent fertility and healthcare policy. The current study (1) examines the impact of insurance on childbearing for adolescent women in the U.S.; (2) assesses the influence of insurance for robustness by controlling for established correlates of adolescent childbearing; and (3) determines if the influence of insurance differs across levels of family income.

Adolescent women in the United States have substantially higher rates of pregnancy, childbearing and abortion than adolescents in other developed countries, with fertility rates three times higher than their Canadian peers and ten times higher than Dutch peers.¹ Approximately 18% of American adolescents will become mothers before the age of 20.² Such high rates of adolescent childbearing are critical. While the selection of more disadvantaged adolescents into adolescent childbearing confound consequences of adolescent childbearing with consequences of disadvantage more broadly, most childbearing in adolescence is unintended.³

Prevention of adolescent pregnancy and childbearing is a national health priority.⁴ However, most efforts to reduce adolescent childbearing focus on individual behavior despite researchers’ recognition of community and societal level influences.⁵ The considerably higher rates of adolescent childbearing in the U.S. relative to other developed nations is most often attributed to the more prevalent and extreme poverty, lack of universal comprehensive sex education and limited access to services in the U.S..⁶ National healthcare systems in Canada and most European nations improve access to services,⁷ which may contribute to the lower rates of adolescent childbearing in these nations.

A recent study that found availability of family planning clinics is associated with lower rates of adolescent fertility in U.S. counties highlights the importance of access to services for adolescent fertility rates.⁸ Potential mechanisms include access to information from a healthcare provider and prescriptions for contraceptives, suggesting that lacking access to services may increase risk for adolescent childbearing. Nonetheless, clinics may not meet the needs of all adolescents. In 2008, Title X funded family planning clinics served only 26.9% of sexually active reproductive age adolescent and low-income women not trying to conceive.⁹ Although some women in need of publicly supported contraceptive services receive services through clinics funded through Medicaid reimbursements,¹⁰ uninsured women may have limited access to these services. However, an intervention demonstrated that adolescent birth and abortion rates can be substantially reduced when contraception is offered at no-cost.¹¹

In the United States, 11.3% of adolescents lack insurance coverage.¹² Although no previous studies have examined the impact of health insurance coverage on adolescent childbearing, adolescent mothers not using contraceptives at the time of an unintended conception report not using contraceptives due to difficulties obtaining them,¹³ or because they either did not plan to have sex or did not believe they would become pregnant.¹⁴ Among adult women, nearly all unintended pregnancies (95%) occur to women who do not use contraception (8%) or use contraception inconsistently (42%).¹⁵ Insured women (aged 18–24) are three times more likely to use contraceptives than those who are uninsured.¹⁶ Suggesting that insurance coverage is important for accessing contraception. Nonetheless, as adolescents’ knowledge

of reproductive health and hormonal contraceptives is often inaccurate,¹⁷ they may not actively seek services.

Routine healthcare visits may provide an opportunity for physicians to offer accurate information about fertility and contraceptives before adolescents become sexually active, particularly for adolescents who may not otherwise seek services. In 2009, uninsured adolescents were more likely to postpone or not receive healthcare than those with both public or private insurance, and nearly half had no physician visit during the past year.¹⁸ A lack of regular healthcare likely prevents adolescents from obtaining prescriptions and gaining accurate information from their physician. Furthermore, economically disadvantaged adolescents are substantially less likely to be insured than more affluent adolescents,¹⁹ which may contribute to socioeconomic and racial disparities consistently found in research on adolescent fertility.

Adolescent childbearing rates vary substantially according to demographic factors. Being Black or Hispanic, living in poverty or a single parent household, and lower parental education increase adolescents' odds of becoming an adolescent moms.^{20,21} However, understanding these relationships is challenging as these factors often co-occur. For example, Black and Hispanic adolescents are more than twice as likely as non-Hispanic White adolescents to become adolescent moms²², but are also three times as likely to live in poverty²³ and more likely to live in single parent households.²⁴ However, unique influences of race and family structure on early childbearing remain even after controlling for attitudinal and behavioral determinants of childbearing, such as recent sexual activity, educational expectations and investments, attitudes towards non-marital childbearing and other family characteristics.²⁵ These persistent disparities suggest that barriers preventing adolescents from obtaining accurate information and resources for avoiding unintended childbearing contribute to early childbearing. One possible barrier is disparity in healthcare access.

Current Study and Hypotheses

This study expands previous research on adolescent childbearing by using longitudinal data to examine the association between insurance and adolescent childbearing. Our review of the literature suggests three main hypotheses. Insured adolescents are expected to have a lower incidence of childbearing compared to their uninsured peers. The insurance effect is expected to remain even after accounting for demographic characteristics. We expect the insurance effect to differ by family income such that the impact of insurance is greatest for the most disadvantaged adolescents, indicated by family income lower than 138% of the poverty line.

Methods

Data Source

We use data from the 2001, 2004, and 2008 panels of the Survey of Income and Program Participation (SIPP), a nationally representative longitudinal survey of the U.S. population. In-home interviews were conducted for each member of 14,000 to 36,700 households every four months over a period of 3 to 4 years for each panel.²⁶ The current study addresses the research questions using data for three time points, spaced 12 months apart, for each sample woman.

To ensure temporal ordering of the predictor and outcome variables the sample is restricted to women who participated in at least two waves of data collection. We focus on adolescent childbearing among women ages 16 to 19 years old because (1) childbearing among younger adolescents is relatively rare, and (2) data limitations prevent us from obtaining baseline

insurance information for adolescents who are under age 16 at time 2, when childbearing is first reported.

Additional sample restrictions are used to ensure that analyses are representative of unintended births to adolescent mothers. Married adolescents are excluded as their childbirths are more likely intentional. Participants also had to live with at least one parent at baseline to provide data on family and parent characteristics. Our final sample consists of 7,263 unmarried adolescents who participated in at least two waves of the data collection, the latter at which childbearing experiences were measured.

Childbearing was measured in supplements to Waves 3 and 6 of the 2001 and 2004 Panels and Waves 4 and 7 of the 2008 Panel. We include all observations as person years (with a maximum of two observations contributed per participant) in a multilevel analysis that controls for clustering among individuals. This analytical strategy permits estimates of both between-person and within-person effects. Given our nationally representative sample we focus on the population-average model, which provides estimates that can be interpreted as the change in log-odds of adolescent childbearing associated with the variable nationwide, averaged across individuals.²⁷

Measures

Adolescent Childbearing—The outcome is a binomial indicator of having had a birth, measured twice in each panel. Data on childbearing were first collected at Wave 3 for the 2001 and 2004 panels and at Wave 4 for the 2008 panel. Adolescents were again asked about childbearing 12 months later at Waves 6 and 7, respectively. Adolescents who reported having an overnight hospital visit during the past 12 months were asked if the purpose of the visit was to give birth. Participants who reported not having a hospital stay in the last 12 months or who reported that the visit was not for childbirth are coded as not having experienced childbirth (0) prior to that wave. If participants reported a recent birth (childbirth=1) at more than one wave, then only the earliest reported birth event is included in our analyses. (Too few participants reported another birth within the following year to permit analysis of subsequent births.)

Insurance—Data on insurance are available for all study months prior to measurement of the dependent variable. At Wave 1, uninsured participants age 15 and over were asked when they last had health insurance (month and year) and insured participants were asked when they were last uninsured. These two items are used to calculate participants' insurance coverage for the months prior to Wave 1. Insurance is a time-varying measure and is coded dichotomously as either having insurance continuously for the 4 months prior to the earliest possible conception month for a given observation (0) or not having insurance during this period (1). Date of conception is assumed to be 9 months prior to the timing of childbirth.

Demographic Variables—Family and individual demographic variables consistently found in prior research to be related to adolescent childbearing are included. Parent's education, family income as a percentage of the federal poverty level, and family structure are obtained by linking participants' data with that of their mothers, when available, since 98.6% of participants lived with at least their mother. Father's reports are used when maternal data are unavailable. The Affordable Care Act (ACA) effectively raises the income limit for Medicaid eligibility for adults to 138% of the federal poverty level (FPL): the first five percent relative to the FPL of a person's income is to be disregarded, thus effectively increasing the income maximum level for Medicaid eligibility from 133% FPL to 138% FPL.²⁸ Thus, adolescents were considered to be from poor families if their family's income was below 138% FPL and near-poor if their incomes fell between 138% and 200% FPL. At

the individual level, we include participant's age, race, residence in a metro area, and panel of observation. Living in a metro area may increase access to services, and year of panel accounts for declining adolescent fertility over the observation period. These variables are shown in Table 1.

Analysis

We analyzed two observations of adolescent childbearing for each adolescent unless she reports a birth at the first wave. In longitudinal data, the lack of independence between repeated observations result in correlated residuals and biased standard errors. Such dependency violates the assumptions necessary for OLS regression models; therefore, we use the HLM 6.08 statistical package²⁷, which was developed to analyze multilevel data. Mean-adjusted individual weights provided by SIPP are used to ensure that the results are representative of the U.S. adolescent population.

In Model 1, we investigate the probability that a birth is reported for person i at time t (level-1 unit) as predicted by time (group mean centered), age (centered at 17), and quadratic age at time t , and insurance (no insurance = 1) at time $t-1$. A random coefficient for time accounts for the dependency between observations typical in longitudinal data. The intercept varies randomly across individuals and represents an individual's initial log odds of childbearing as predicted by the individual means of the level-1 predictors. The individual's mean age and mean quadratic age across observations control for the increased risk of childbearing associated with age.

Second, we build on our initial model by including demographic characteristics in level-two. With the exception of poverty, all level-two variables added in Model 2 are grand mean centered to permit their interpretation as the effect for the average participant based on other covariates in the model.

To test our final hypothesis, a third model includes a cross-level interaction for family poverty status and insurance to determine if the impact of having no insurance differs for those who are poor or near-poor compared with more economically advantaged adolescents (Model 3). Our final proposed model can be expressed as:

$$\begin{aligned} \text{childbirth} = & b_{00} + b_{10} * (\text{time}) + b_{20} * (\text{age}) + b_{30} * (\text{quadage}) + b_{40} * (\text{noinsurance}) \\ & + b_{01} * (\text{age_mean}) + b_{02} * (\text{quadage_mean}) + b_{03} * (\text{urban_mean}) \\ & + b_{04} * (\text{time_mean}) + b_{05} * (\text{twoparents}) + b_{06} * (\text{parentEd}) \\ & + b_{07} * (\text{Black}) + b_{08} * (\text{Hispanic}) + b_{09} * (\text{panel01}) + b_{010} * (\text{panel08}) \\ & + b_{011} * (\text{Poor}) + b_{012} * (\text{NearPoor}) \\ & + b_{41} * (\text{noinsurance}) * (\text{Poor}) + b_{42} * (\text{noinsurance}) * (\text{NearPoor}) + r \end{aligned}$$

Results

Descriptive Statistics

Table 1 presents descriptive statistics for the study. Overall, 18.0% of the observations were characterized by a prior lack of insurance. Importantly, however, adolescents were more likely to report childbearing at observations subsequent to being uninsured compared to observations when adolescents were insured (28.0% versus 17.9%).

Results of the logistic analyses (Model 1, Table 2) indicate that, on average, the log odds that an adolescents reports childbearing is -4.30 ($p < .0001$) -- most women do not become adolescent mothers. As anticipated, being uninsured is associated with a 0.55 point increase

in the log odds of childbearing, corresponding to a 74% increase in adolescents' odds of childbearing when uninsured (OR = 1.74, 95% CI 1.492 – 2.019).

When controlling for demographic differences and time, the effect of insurance becomes non-significant (Model 2), suggesting that having insurance coverage does not predict adolescent childbearing above and beyond the effects of demographic characteristics. As shown in Table 2, several demographic characteristics are strongly associated with the odds of childbearing after controlling for time, age, and insurance coverage. Additional analyses suggest that the effect of insurance is primarily attenuated by family income. Adolescents who were older across study waves had lower odds of childbearing than their peers, reflecting fewer opportunities to report childbearing for those who aged out of the sample before the final observation. However, individuals were more likely to report childbearing at times when they were older.

Our final model (Model 3) tests our hypothesis that the effect of health insurance would differ as a function of family income. The model supports a differential effect of insurance for near-poor adolescents compared with more affluent adolescents. Near-poor adolescents experience a 96% increase in the odds of childbirth following periods when they are uninsured compared with insured periods (Table 2). Conversely, there is no difference in the insurance effect for those who were poor compared with those who were affluent. Among near-poor adolescents, 2.2% report childbearing subsequent to being insured compared with 3.4% of those uninsured (Figure 1). The detrimental effect of being uninsured is particularly strong for adolescents from near-poor families.

Discussion

The current study addresses a gap in the research by documenting the relationship between insurance and adolescent childbearing net the effects of demographic factors. Descriptive data show that adolescents who have insurance are less likely to become adolescent moms compared to uninsured adolescents. The cross-level interaction in Model 3 suggests that insurance may be most salient for preventing childbearing among adolescents from near-poor families than among more economically advantaged adolescents. However, the attenuation of the insurance effect by demographic factors for adolescents from both poor and affluent families suggests that a lack of health insurance does not explain adolescent childbearing over and above the effects of demographic characteristics for poor and affluent adolescents. Past research supports the current findings, showing that removing financial barriers can reduce unintended pregnancies and childbearing. Future research should examine if improved access to contraception through insurance mediates the effect of insurance on adolescent childbearing or if more target outreach is necessary. Policy efforts to extend insurance coverage to near-poor adolescents deserve our attention, however.

As discussed in the introduction, insurance may also reduce adolescents' risk for childbearing through access to routine healthcare and more accurate knowledge of fertility, contraception, and services. More affluent adolescents, whose families can afford healthcare services, may have access to routine healthcare regardless of their insurance coverage. The parents in such families are also typically more educated. Higher educated parents are more likely to have ongoing discussions about sexuality with adolescents²⁹, which may help parents convey their expectations (for delayed and protected sex) and enable parents to help the adolescents obtain appropriate services before they become sexually active. Accurate fertility knowledge and the ability to obtain services are important factors in adolescent childbearing since childbearing is ultimately determined by the adolescents' sexual activity, deliberate attempts to avoid pregnancy (i.e., contraceptive use), and the proportion of pregnancies that end in birth.³⁰ Furthermore, the reasons for being uninsured may be

different for affluent adolescents compared to those who are near-poor, and affluent adolescents may be less likely to experience changes in insurance coverage. For affluent adolescents, being uninsured may represent a conscious choice by their families rather than an inability to afford and obtain health coverage.

The non-significant interaction between insurance and being poor was surprising. Although our analysis cannot provide the reasons for this null finding, we offer some hypotheses. First, persistent and cumulative disadvantage among very poor adolescents may overwhelm the potential for insurance to inhibit childbearing; possibly, the effects of basic unmet needs resulting from poverty outweigh the effects of access to healthcare on the risk of adolescent childbearing. Second, past research has found that low-income women are more likely underestimate the effectiveness of contraception, which in turn is associated with increased odds of pregnancy and unprotected sex.³¹ Thus, poor adolescents may be less likely than adolescents of other income groups to seek out services and more reluctant to use contraceptives even if they have access to these services.

Research suggests that clients of publicly funded clinics are most often uninsured, and have incomes at or below the poverty line.³² While most adolescents under age 18 would be eligible for free services and contraceptives through publicly funded clinics,³² it is unclear if these services are fully utilized by uninsured adolescents of all income brackets. Adolescents may be unaware of their eligibility for free services or may perceive other barriers to accessing these services, such as concerns about confidentiality, feeling embarrassed, or lacking of transportation to the clinic.³³ Outreach efforts of many publicly funded clinics specifically targets adolescents, however, information on which adolescents are targeted or reached by these efforts is unavailable.³⁴ It may be that near-poor adolescents are less likely to be targeted by these outreach activities and thus may be less aware of available services relative to poor adolescents.

Implications

Results imply that insurance coverage may help adolescents' access services that help them prevent childbearing. During the time of the current study, Medicaid coverage was available to families with incomes below 133% of the poverty line. Although Medicaid expansion programs extended the income criteria for family planning services, nearly half of the 28 states receiving Medicaid expansion program funds restrict eligibility to women who are at least 18 or 19 years old.³⁵ Medicaid accounted for 75% of public funding for services in 2010,³⁶ making much of the publicly funded services inaccessible to near-poor adolescents who may need them. Expanding coverage to adolescents may lead to reductions in childbearing and cost-savings. California's Family PACT program, which provides family planning services to low-income uninsured adults and adolescents ineligible for Medicaid through Medicaid expansion program funding, averted an estimated 21,400 births to adolescents in 2002, saving California \$359 million over two years (in 2002 dollars).³⁷

The relationship between insurance and adolescent childbearing suggests increasing insurance coverage and healthcare access to adolescents may be important. Although these findings support the Institute of Medicine's recommendation that contraception and patient education/counseling about contraceptive services are considered preventative care for all women of reproductive age,³⁸ the findings from the current study should be viewed as suggestive. Future research is needed to further understand the relationship between insurance and childbearing and to replicate the findings in the current study.

Conclusion

The take home message is that near-poor adolescents without insurance are more likely to experience an adolescent birth. Near-poor adolescents have fewer private resources compared to those more affluent and are less likely to be targeted with public resources, thus adolescents in this group are most likely to fall between the cracks. The vast majority of births to adolescents are reported to be unintended.³ Consequently, preventing adolescent childbearing is not a matter of “convincing” adolescents not to have children; rather the target should be to help them prevent pregnancy and subsequent childbearing through access to reproductive health knowledge, and contraception. While interventions rarely attempt to reduce structural barriers, increasing access to contraception and healthcare by increasing insurance coverage has substantial public health implications. Such interventions potentially reach large numbers of adolescents, offer additional health benefits, and may be more sustainable than behavior change models alone.

Future research should examine potential proximate mechanisms through which insurance influences adolescent childbearing. While we are unable to examine these specific mechanisms using SIPP, these longitudinal and nationally representative data permit appropriate time ordering of insurance coverage, conception and childbearing events for the U.S. population of women ages 16 to 19 years old. Results suggest that health insurance coverage may be a powerful tool for reducing adolescent childbearing among near-poor adolescents.

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References

1. World Health Organization. [Accessed November 17, 2011] WHO Global Health Observatory Data Repository, 2007. 2011. Available at: <http://apps.who.int/ghodata/>
2. Perper K, Manlove JS, Tate S. Estimated Percentage of Females Who Will Become Teen Mothers: Differences Across States. Child Trends: Research Brief. 2009 Mar.2009-09 Available at: http://www.childtrends.org/Files/Child_Trends-2009_03_19_RB_PercentTeenMothers.pdf.
3. Finer LB, Henshaw SK. Disparities in rates of unintended pregnancy in the United States, 1994 and 2001. Perspectives on Sexual and Reproductive Health. 2006; 38(2):90–6.10.1363/psrh.38.090.06 [PubMed: 16772190]
4. Healthy People. [Accessed January 13, 2012] Healthy People 2020: Adolescent Health. Available at: <http://www.healthypeople.gov/2020/about/default.aspx>
5. Salazar LF, Bradley ELP, Younge SN, et al. Applying ecological perspectives to adolescent sexual health in the United States: Rhetoric or reality? Health Education Research. 2010; 25(4):552–62.10.1093/her/cyp065 [PubMed: 20007196]
6. Singh S, Darroch JE. Adolescent pregnancy and childbearing: Levels and trends in developed countries. Family Planning Perspectives. 2011; 32(1):14–23. Available at: <http://www.ncbi.nlm.nih.gov/pubmed/10710702>. [PubMed: 10710702]
7. Schoen C, Osborn R, Doty MM, Bishop M, Peugh J, Murukutla N. Toward higher-performance health systems: adults' health care experiences in seven countries, 2007. Health Affairs. 2007; 26(6):w717–34.10.1377/hlthaff.26.6.w717 [PubMed: 17978360]
8. Shoff C, Yang T-C. Residence and teenage birth rates: A potential non-stationary process in US counties. Demographic Research. 2012; 27(14):377–418.10.4054/DemRes.2012.27.14 [PubMed: 23144587]

9. Frost, JJ.; Henshaw, SK.; Sonfield, A. Contraceptive Needs and Services: National and State Data, 2008 Update. New York: 2010.
10. Sonfield A. Medicaid Drives Upward Trend in Public Funding for Family Planning Services. *Guttmacher Policy Review*. 2012; 15(1):21–22.
11. Peipert JF, Madden T, Allsworth JE, Secura GM. Preventing Unintended Pregnancies by Providing No-Cost Contraception. *Obstetrics and Gynecology*. 2012; 0(0):1.10.1097/AOG.0b013e318273eb56
12. DeNavas-Walt, C.; Proctor, BD.; Smith, JC. US Census Bureau, Current Population Reports, P60-238. Washington, D.C: U.S. Government Printing Office; 2010. Income, Poverty, and Health Insurance Coverage in the United States: 2009.
13. Coles MS, Makino KK, Stanwood NL. Contraceptive experiences among adolescents who experience unintended birth. *Contraception*. 2011; 84(6):578–84.10.1016/j.contraception.2011.03.008 [PubMed: 22078186]
14. Phipps MG, Rosengard C, Weitzen S, Meers A, Billinkoff Z. Age group differences among pregnant adolescents: sexual behavior, health habits and contraceptive use. *Journal of Pediatric and Adolescent Gynecology*. 2008; 21(1):9–15.10.1016/j.jpjg.2007.07.009 [PubMed: 18312794]
15. Frost, J.; Darroch, JE.; Remez, L. [Accessed March 1, 2012] Improving contraceptive use in the United States; Issues in brief. 2008. p. 1-8. Available at: <http://www.ncbi.nlm.nih.gov/pubmed/18561392>
16. Nearn J. Health insurance coverage and prescription contraceptive use among young women at risk for unintended pregnancy. *Contraception*. 2009; 79(2):105–10.10.1016/j.contraception.2008.08.004 [PubMed: 19135566]
17. Kaiser Family Foundation. Birth Control and Protection: A Series of National Surveys of Teens About Sex. SexSmarts: A Public Information Partnership. 2004 Jul.7106
18. Kaiser Family Foundation. Adolescent Health: Coverage and Access to Care. Issue Brief: An Update on Women's Health Policy. 2011:1–8.
19. Newacheck PW, Park MJ, Brindis CD, Biehl M, Irwin CE. Trends in Private and Public Health Insurance for Adolescents. *JAMA: The Journal of the American Medical Association*. 2004; 291(10):1231–1237. [PubMed: 15010445]
20. Manlove JS, Ikramullah E, Mincieli L, Holcombe E, Danish SJ. Trends in sexual experience, contraceptive use, and teenage childbearing: 1992–2002. *Journal of Adolescent Health*. 2009; 44(5):413–23.10.1016/j.jadohealth.2008.09.006 [PubMed: 19380087]
21. Moore KA, Manlove JS, Gleit DA, Morrison DR. Nonmarital School-Age Motherhood: Family, Individual, and School Characteristics. *Journal of Adolescent Research*. 1998; 13(4):433–457.10.1177/0743554898134004
22. Hamilton BE, Martin JA, Ventura SJ. Births: Preliminary Data for 2007. National vital statistics reports. 2009; 57(12):1–23. [PubMed: 19754006]
23. Chau M, Thampi K, Wight VR. Basic Facts About Low-income Children, 2009: Children Aged 12 through 17. National Center for Children in Poverty: Fact Sheet. 2010 Oct.
24. U.S Census Bureau. [Accessed February 10, 2012] U.S. Census Bureau FactFinder. FactFinder. 2012. Available at: http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?_afpt=table
25. Landale NS, Schoen R, Daniels K. Early Family Formation among White, Black and Mexican American Women. *Journal of family issues*. 2010; 31(4):445–474.10.1177/0192513X09342847 [PubMed: 20368754]
26. U.S Census Bureau. Survey of Income and Program Participation. U.S. Census Bureau; 2012. Available at: <http://www.census.gov/sipp/intro.html>
27. Raudenbush, SW.; Bryk, A.; Congdon, R. HLM6: Hierarchical Linear and Nonlinear Modeling. Lincolnwood, IL: Scientific Software International, In; 2004.
28. The Kaiser Family Foundation. Determining Income for Adults Applying for Medicaid and Exchange Coverage Subsidies: How Income Measured with a Prior tax Return Compares to Current Income at Enrollment. Focus on Health Reform. Mar.2011 2011

29. Martino SC, Elliott MN, Corona R, Kanouse DE, Schuster MA. Beyond the “big talk”: The roles of breadth and repetition in parent-adolescent communication about sexual topics. *Pediatrics*. 2008; 121(3):e612–e618.10.1542/peds.2007-2156 [PubMed: 18310180]
30. Stover J. Fertility the Proximate Framework: What Have We Learned in the past 20 Years? *Studies in Family Planning*. 1998; 29(3):255–267. [PubMed: 9789319]
31. Biggs MA, Foster DG. Misunderstanding the risk of conception from unprotected and protected sex. *Women’s Health Issues*. 2013; 23(1):e47–53.10.1016/j.whi.2012.10.001 [PubMed: 23231762]
32. Fowler, C.; Lloyd, S.; Gable, J.; Wang, J.; Krieger, K. *Family Planning Annual Report: 2010 National Summary*. Research Triangle Park; 2011.
33. Hock-Long L, Herceg-Baron R, Cassidy AM, Whittaker PG. Access to adolescent reproductive health services: financial and structural barriers to care. *Perspectives on Sexual and Reproductive Health*. 2003; 35(3):144–147. Available at: <http://www.ncbi.nlm.nih.gov/pubmed/12866788>. [PubMed: 12866788]
34. Frost, JJ.; Gold, RB.; Frohwirth, L.; Blades, N. Variation in Service Delivery Practices Among Clinics Providing Publicly Funded Family Planning Services in 2010. 2012 May.
35. Guttmacher Institute. Medicaid Family Planning Eligibility Expansions. *State Policies in Brief*. Feb 1.2012 2012
36. Sonfield, A.; Gold, RB. *Public Funding for Family Planning, Sterilization and Abortion Services, FY 1980–2010*. New York: 2012. Available at: <https://www.guttmacher.org/pubs/Public-Funding-FP-2010.pdf>
37. Amaral G, Foster DG, Biggs MA, Jasik CB, Judd S, Brindis CD. Public savings from the prevention of unintended pregnancy: a cost analysis of family planning services in California. *Health Services Research*. 2007; 42(5):1960–80.10.1111/j.1475-6773.2007.00702.x [PubMed: 17850528]
38. IOM (Institute of Medicine). *Clinical Preventive Services for Women: Closing the Gaps*. Washington, D.C: The National Academies Press; 2011. Available at: http://books.google.com/books?hl=en&lr=&id=c-V6hkIEWOcC&oi=fnd&pg=PR1&dq=Clinical+Preventive+Services+for+Women:+Closing+the+Gaps&ots=aOJpYGkUL9&sig=fp_JxWj5leJpFfFWIXV0ctP6ZXg [Accessed February 29, 2012]

Implications and Contributions

Despite the ongoing healthcare debate and high adolescent fertility rates in the U.S, the impact of insurance on adolescent childbearing is unknown. Results suggest that insurance coverage is associated with a reduced risk of childbearing for near-poor adolescent women, reinforcing the importance of the Affordable Care Act's free contraceptive provisions in reducing future adolescent childbearing.

Figure 1.

Fitted probability of adolescent childbearing by family income and insurance coverage, holding all other variables at their mean level. The probability of childbearing is significantly higher for near-poor adolescents previously uninsured compared to who were insured.

Table 1

Descriptive statistics across time (person-year observations) and individuals (level-two, person observations).

Observation Variables	N _{obs}	Mean or %	SD	Min	Max
Age	10979	17.39	1.09	16	19
Time *	10979	0.48	0.5	0	1
Childbearing	10979	2.0%	0.14	0	1
No Insurance	10979	18.0%	0.39	0	1
Individual Variables	N _{ind}	Mean or %	SD	Min	Max
Metro Residence	7263	77.0%	0.42	0	1
Mean Time	7263	0.48	0.35	0	1
Two Parent Household	7263	69.0%	0.46	0	1
Parental education	7263	1.69	0.98	0	3
White/Asian	7263	71.0%	0.45	0	1
Non-Hispanic Black	7263	15.0%	0.36	0	1
Non-Black Hispanic	7263	14.0%	0.35	0	1
2001 Panel	7263	27.0%	0.44	0	1
2004 Panel	7263	38.0%	0.49	0	1
2008 Panel	7263	35.0%	0.48	0	1
Lives with Mom	7263	99.0%	0.11	0	1
Poor (<138% FPL)	7263	24.0%	0.43	0	1
Near Poor (138–199% FPL) †	7263	13.0%	0.33	0	1
Affluent (≥ 200% FPL) †	7263	64.0%	0.48	0	1

* time represents the wave of outcome measurement, where childbearing reported at time 2 = ‘0’ and time 3 = ‘1’.

† These income levels represent thresholds at which families are eligible for Medicaid and government subsidies for privately purchased health insurance under the current health reform policy.

Table 2
Hierarchical Logistic Regression Estimates (Standard Errors) for Model predicting childbearing among adolescent women.

	Model 1			Model 2			Model 3		
	Est.	OR	95% CI	Est.	OR	95% CI	Est.	OR	95% CI
Level 2 (Between-persons)									
Intercept	-3.912	0.020 ^{***}	(0.018,0.022)	-4.279	0.014 ^{***}	(0.012,0.016)	-4.231	0.015 ^{***}	(0.012,0.017)
Mean Age	-1.095	0.335 ^{***}	(0.197,0.569)	-1.051	0.350 ^{**}	(0.190,0.642)	-1.050	0.350 ^{**}	(0.193,0.634)
Mean Quadratic Age	0.114	1.121 ⁺	(0.994,1.263)	0.129	1.138	(0.981,1.320)	0.129	1.138	(0.984,1.317)
Metro Residence				-0.160	0.853	(0.697,1.042)	-0.161	0.851	(0.698,1.037)
Mean Time	-0.095	0.909	(0.691,1.198)	-0.151	0.860	(0.612,1.208)	-0.157	0.854	(0.613,1.192)
Two Parent Household				-0.439	0.645 ^{***}	(0.538,0.773)	-0.443	0.642 ^{***}	(0.537,0.768)
Parental education				-0.205	0.815 ^{***}	(0.744,0.891)	-0.209	0.811 ^{***}	(0.743,0.886)
Black				0.375	1.454 ^{**}	(1.153,1.835)	0.380	1.462 ^{**}	(1.163,1.837)
Hispanic				0.395	1.485 ^{**}	(1.161,1.899)	0.392	1.480 ^{**}	(1.161,1.887)
2001 Panel				0.135	1.145	(0.931,1.407)	0.141	1.151	(0.940,1.410)
2008 Panel				-0.153	0.859	(0.705,1.045)	-0.150	0.861	(0.709,1.045)
Poor				0.433	1.543 ^{**}	(1.207,1.971)	0.410	1.507 ^{**}	(1.144,1.983)
Near-poor				0.567	1.763 ^{***}	(1.390,2.236)	0.395	1.485 ^{**}	(1.135,1.943)
Level 1 (Within-person)									
Time slope	-0.748	0.474 ^{**}	(0.279,0.803)	-0.666	0.514 [*]	(0.282,0.937)	-0.670	0.512 [*]	(0.284,0.922)
age slope	1.346	3.842 ^{***}	(2.230,6.618)	1.341	3.824 ^{***}	(2.057,7.110)	1.336	3.803 ^{***}	(2.074,6.973)
age squared slope	-0.142	0.868 ^{**}	(0.801,0.939)	-0.155	0.856 ^{**}	(0.774,0.946)	-0.155	0.857 ^{**}	(0.776,0.945)
no insurance slope	0.552	1.736 ^{***}	(1.492,2.019)	0.107	1.112	(0.901,1.373)	-0.209	0.811	(0.555,1.185)
Poor [*] no insurance							0.267	1.306	(0.803,2.123)
Near-poor [*] no insurance							0.673	1.961 [*]	(1.126,3.414)
Random Effect									
Intercept	0.855		0.925	0.623		0.789	0.646		0.804
Time slope	0.191		0.436	0.158		0.398	0.168		0.410

⁺ p<.08;

*
p<.05;
**
p<.01;

p<.001