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RATIONALITY AND REPRODUCTION: HEALTH INSURANCE COVERAGE AND MARRIED WOMEN'S FERTILITY

by

Jennifer Adams Mendoza

A thesis submitted to the faculty of

Brigham Young University

in partial fulfillment of the requirements for the degree of

Master of Science

Department of Sociology

Brigham Young University

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BRIGHAM YOUNG UNIVERSITY

GRADUATE COMMITTEE APPROVAL

of a thesis submitted by

Jennifer Adams Mendoza

This thesis has been read by each member of the following graduate committee and by majority vote has been found to be satisfactory.

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BRIGHAM YOUNG UNIVERSITY

As chair of the candidate's graduate committee, I have read the thesis of Jennifer Adams Mendoza in its final form and have found that (1) its format, citations, and bibliographical style are consistent and acceptable and fulfill university and department style requirements; (2) its illustrative materials including figures, tables, and charts are in place; and (3) the final manuscript is satisfactory to the graduate committee and is ready for submission to the university library.

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ABSTRACT

RATIONALITY AND REPRODUCTION: HEALTH INSURANCE COVERAGE AND MARRIED WOMEN'S FERTILITY

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Health insurance has become essential in mediating the extremely high costs of childbirth; however, it has been neglected in fertility research. This study examines health insurance coverage as an economic determinant of fertility and includes discussions of the cost of raising children, contraception and childbirth as well as opportunity costs to illustrate that the effect of health insurance may differ by resources, such as income and education. Using data from the 2001 Survey of Income and Program Participation, I analyze the effects of insurance on the probability of pregnancy and birth with Discrete-Time Hazard Models. Results show that health insurance is a powerful indicator of fertility. Married women with insurance coverage, especially private insurance coverage provided by someone else's plan, coverage in own name or public insurance, have increased expected odds of fertility compared to uninsured women.

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INTRODUCTION

Studies of fertility in developed countries have traditionally examined the influence of factors such as past fertility, education, women's employment, income, and age (Schoen et al. 1997; Budig 2003). Surprisingly, fertility research has neglected to explore other economic determinants of fertility, such as access to health insurance. With the cost of childbirth alone averaging from $7,737 for a vaginal birth to $10,958 for Cesarean sections (March of Dimes 2007), health insurance has become essential in mediating costs of childbirth. Health insurance helps cover other costs associated with the birth, such as pre-natal and newborn care, which add substantially to the cost of having a baby.

As health costs rise, health insurance is becoming more important for families. Unfortunately, increasing numbers of Americans are without health insurance (DeNavas-Walt, Proctor & Mills 2004). Employer-provided health insurance is the most common source of health insurance in the United States (Institute of Medicine 2002), although the incidence of employer-based health insurance has decreased over four percent since 2000 (DeNavas-Walt, Proctor & Smith 2007). The percent of married men with employer-based health insurance decreased from 83 percent to 71 percent between 1998 and 2001. In many cases, married women have access to health insurance through their husband's employment. The decline in health insurance coverage and resulting need for health benefits may be another factor that pushes women with young children into the labor force.

The risks associated with being uninsured are high: uninsured parents have poorer health than insured parents and uninsured pregnant women, newborns and children receive less, often

necessary, care (Institute of Medicine 2002). If pregnancy or delivery complications occur, the cost of child birth without insurance can be devastating, even for middle class families.

Even with existing health insurance, maternity coverage is not always included and may require additional enrollment, maternity riders and waiting periods. Health insurance coverage is critical for couples to consider when deciding to have a child. I assume that married couples make fertility decisions rationally, and I build on other rational choice perspectives, such as Easterlin's supply-demand framework and Becker's quality-quantity trade-off as well as opportunity cost considerations, such as human capital and role-incompatibility perspectives, to understand fertility decisions.

In this research I extend fertility literature by examining the effects of health insurance coverage. I argue that health insurance coverage is an economic determinant of fertility and include discussions of the cost of raising children, contraception and childbirth as well as opportunity costs to illustrate that the effect of health insurance may differ by resources, such as income and education.

Classical Fertility Theories

Various theories lend incomplete answers to the question of health insurance and fertility. The underlying assumption of the theories referenced here is that couples make rational choices. Rational choice positions presume that couples calculate the potential costs and benefits of children with regards to their income, career plans, and care capabilities and then make decisions accordingly (Gauthier 2007). The first two theories I present are from neoclassical economic theory which consider the direct cost of children as affecting fertility decisions.

The neoclassic economic theory of fertility posits that individuals make fertility decisions based on underlying rational economic decisions. Easterlin, in his "supply-demand" framework,

theorizes that the demand for children is shaped by couples' income, price of goods relative to children and desire for goods as compared to desire for children. Couples take into account the number of surviving children they want, the number of children they could have if fertility is unregulated, and the cost of contraception (Easterlin 1975). Easterlin's main contribution is the emphasis on a couple's rational fertility decisions.

Becker's contributions to new home economics consider income, preference for children, and other costs and benefits of children in fertility decisions (Becker 1981). Becker holds there is a quantity/quality trade-off that influences the number of children couples decide to have. According to Becker, couples consider their resources and expectations for children; couples with high expectations for their children invest more resources, such as money and time, to enable their children's success. Couples with high expectations for children may choose to limit the number of children they have since it costs more to raise each child. For couples of lower socioeconomic status, expectations for children are lower and thus the number of children may be higher. Those of higher socioeconomic status have high expectations for their children and limit the number of children they have in order to give more resources to each child. Becker's quantity/quality trade-off assumes rationality and recognizes the importance of class differences.

Much has changed since Easterlin and Becker developed economic theories of fertility. For instance, the majority of women used to be full-time homemakers; since then women have joined men in the labor force. Additionally, health care costs have risen dramatically in recent years; making health insurance increasingly more important for families. Both Easterlin and Becker contribute to our understanding of fertility but, since their time, there has been a change in the economic importance of health insurance coverage, which influences rational fertility decision-making. Becker also alerts us to class differences in the quantity/quality trade-off and

draws attention to long-term economic issues-- income and other nonpecuniary resources needed to raise children, but does not consider other short term economic issues such as the cost of health care.

Employment and Fertility

The majority of Americans obtain health insurance benefits through either their own employment or the employment of a family member (Institute of Medicine 2002; DeNavas-Walt, Proctor & Smith 2007). Therefore, it is important to consider employment as we examine how access to health insurance influences fertility decisions. Additionally, women's labor force participation has an interesting interdependent relationship with fertility.

Human capital and role-incompatibility perspectives highlight additional opportunity costs associated with having children. Becker's neoclassical approach to family economics examines investments in human capital. Increased investments in human capital result in increased costs of leaving the labor force. For women who have invested heavily in human capital, leaving the labor force is costly and weighs into the costs and benefits of having children. This may be more pronounced for women in recent years because of increased education, investments in career and higher wages. In other words, as women invest more in education, exits from the labor force decrease.

The role incompatibility perspective formulates a macro level hypothesis which states that the difficulty of fulfilling both mother and worker roles discourages childbearing (Rindfuss & Brewster 1996). Structural determinants that contribute to role incompatibility between childrearing and labor force participation are family policies, job characteristics, sequencing of work and family obligations, costs of periodic and interspersed labor force participation, child care arrangements, and ideational factors, such as norms concerning the labor force participation

of mothers and child supervision (Brewster & Rindfuss 2000; Rindfuss & Brewster 1996). It follows that, as structural factors that facilitate the combination of motherhood and labor force participation develop (such as paid maternity leave, flexible hours, etc.), women's labor force participation will increase (Brewster & Rindfuss 2000; Rindfuss, Guzzo & Morgan 2003).

Before the 1980's, women's labor force participation had a negative association with fertility on the national level, however since then the association has become positive and has grown stronger (Ahn & Mira 2002; Rindfuss, Guzzo & Morgan 2003). Aggregate national levels show that the countries with the highest percentages of female labor force participation also have the highest fertility rates (Rindfuss & Brewster 1996; Brewster & Rindfuss 2000). However, fertility is negatively affected by employment on the individual level (Brewster & Rindfuss 2000), signifying that the employment-fertility relationship is more complicated.

At the individual level, couples considering having a child may also be aware of the unique strain that raising children places on employed women. Currently women in the labor force are faced with conflict between the responsibilities of employment and care work, or the work that one does for others, such as child and elder care (Thistle 2006). Women, in many cases, take primary responsibility for child care and housework, adding a second shift to their lives (Hochschild 1997). The institution of employment is also structured according to the masculine "ideal worker" that does not have any ties or care work obligations, which contributes to the motherhood penalty experienced by women in the labor force (Budig & England 2001; Correll, Benard & Paik 2007; Budig 2003; Acker 1990). Indeed, both the role incompatibility hypothesis (Rindfuss & Brewster 1996) reflects concerns women experience regarding how to manage both career and family.

The decline in policy initiatives and support for women's domestic work has intensified

the disconnect between work and family responsibilities. Thistle (2006) argues that the transformation of women's work has contributed to economic growth at the expense of women, and especially mothers, who feel the strains of the incompatibility of market and care work. Thistle explains that the loss of structural supports for care work occurred with the dismantling of social assistance, such as Aid to Families with Dependent Children (AFDC), discontinuance of the family wage, and growing instability of marriage. These structural changes lessened resources available to women who want to have children. As a result of structural changes, women moved into market work. Unfortunately, instead of public support for care work, care work is still enacted on a private level where women carry primary responsibility. Thistle advocates the need for more than unpaid maternity leave, meager tax credits, and expensive child care. With the devaluation of care work and childbearing, the costs of having children have increased.

Research has also focused on women's employment as a deterrent to fertility. Budig (2003) reports that employment lessens the likelihood of pregnancy; women with full-time employment are 16 percent less likely to become pregnant than women who are not employed. Felmlee (1993) finds that as women's wages increase, the probability of pregnancy decreases.

Fertility's affect on employment has also been explored in recent research. Although Felmlee (1993) reports that pregnancy augments the exit of employed women from the labor force, Budig's more recent research (2003) finds that pregnancy does not affect the likelihood of employment exit. Specifically, Budig finds that women employed full-time are more likely to exit the labor force after giving birth than during pregnancy and hypothesizes that this may be because of need for health insurance; women who are the insurance providers for the family, or even just themselves, may find it necessary to stay in the labor force in order to retain benefits

during pregnancy and childbirth (Budig 2003). Budig implies that health insurance, especially maternity coverage, is an important financial concern for women when they are considering fertility options.

Economic necessity or high wages may keep women in the labor force, even with role-incompatibility issues. Mothers report that financial concerns are very important in their decision whether or not to return to the labor force after a birth (Volling & Belsky 1993). Desai and Waite (1991) find that women's willingness to work during pregnancy and just after birth may be influenced by rewards received from employment and the occupation's compatibility with pregnancy or childrearing. Better employment offers enhanced maternity leave packages, including partial or fully paid leave. Women who have lower paying jobs or whose wages, or insurance coverage, are needed for family survival are disadvantaged in this system, as they may not be able to sacrifice paid time (O'Connor, Orloff & Shaver 1999).

Fertility Factors

Prior research has identified several factors, in addition to employment, that affect fertility including marital status, number and ages of children and education. Being married significantly increases the likelihood of pregnancy for childless women (Budig 2003). The number of children born to a woman is a measure of past fertility and negatively affects fertility, especially if the children are older (Schoen et al. 1997; Felmlee 1993). College-educated women are more likely to delay childbearing and may have fewer children because of fertility constraints from age, making education an important factor to consider (Rindfuss, Morgan & Offutt 1996).

Interestingly, the link between income and fertility in developed countries is fuzzy; though some find negative associations, or at least inadequate support for a positive income-fertility relationship (Freedman & Thornton 1982), others are unable to report a significant

effect which Whittington (1992: 221) calls “not uncommon for fertility research.”

Socioeconomic differences are apparent in Easterlin and Becker's approaches to fertility. Easterlin identifies income as one of the determinants of fertility, but does not include health insurance as a measure of income. Further, Easterlin does not acknowledge that only a segment of the population has health insurance which, if considered a form of income, indicates differences based on resources. Becker's quality/quantity trade-off suggests socioeconomic differentials in both quantity and quality of children. Likewise, human capital theory suggests socioeconomic differences exist by its emphasis on investment in education and gender specialization. Those of lower socioeconomic status have less opportunity cost with children because of lower investment in human capital for them and their children.

Health Insurance

Employer-provided health insurance is the most common source of health insurance in the United States (Institute of Medicine 2002). As of 2006, 59.7 percent of people in the United States are covered by employer-provided health insurance, though that percentage has declined by over four percent since the year 2000 (DeNavas-Walt, Proctor & Smith 2007). Dushi and Honig (2003) reported that the percent of married men with employer-based health insurance decreased from 83 percent in 1998 to 71 percent in 2001. During that same time period, the percentage of married women covered by employer-based health insurance also decreased, from 69 percent to 56 percent, although the percentage of married women covered in their own name rose from 17 percent to 35 percent.

Indeed, research has shown that access to health insurance influences couples' employment decisions (Royalty & Abraham 2003). In many cases, married women have access to health insurance through their husband's employment. However, the need for health benefits

pushes women into the labor force. Married women are more likely to be in the labor force full-time, especially in jobs that offer insurance, if their husbands are uninsured or do not provide health insurance for the family (Olson 1995; Buchmueller & Valletta 1999; Wellington & Cobb-Clark 2000; Royalty & Abraham 2006; Olson 1998). Women who are family insurance providers may face additional pressures when having children as they may need to abbreviate maternity leaves to guarantee insurance for the family. Conversely, married women with access to health insurance through their spouse are less likely to work full-time (Royalty & Abraham 2006; Honig & Dushi 2005) and are more likely to decline insurance when offered in order to stay on their spouse's plan (Buchmueller 1996). Ultimately, the likelihood of access to insurance benefits increases markedly in dual-earner families (Institute of Medicine 2002; Abraham & Royalty 2005).

Not surprisingly, insurance and income are linked. In 2006, 91.5 percent of households with income over $75,000 were covered by either public or private insurance compared to only 74.1 percent of households with income below $25,000 (DeNavas-Walt, Proctor & Smith 2007). These differences may be more exaggerated when considering employer-based health insurance. Historically, the working poor, defined as employed workers with household incomes under the poverty line, are more likely to be uninsured. Seccombe and Amey (1995) report that nearly half of the working poor are uninsured, and only 28.2 percent have employer-based health insurance. Those with higher incomes are more likely to have employer-based health insurance coverage, more likely to have insurance for the entire family, and more likely to be offered enhanced health insurance benefits (Institute of Medicine 2002; O'Connor, Orloff & Shaver 1999).

Health insurance coverage is an issue of resources, race and gender. Blacks and Hispanics have lower percentages (49.3% and 40%, respectively) of employer-based health

insurance coverage than Whites (61.5%) and Asians (62.2%), and the percentage of people covered by employer-based health insurance has declined since 1999 for all ethnic groups excluding Asians (DeNavas-Walt, Proctor & Smith 2007). Women are especially at risk of being uninsured. Married men are 15 percent more likely to received health insurance benefits than married women (Buchmueller 1996). Using data from 2002, Culwell and Feinglass (2007b) calculated the number of women at risk of unintended pregnancy (47.8% of all women ages 15 to 44) by excluding women who were pregnant, not sexual active, postpartum, or sterile. They estimated that 15.4 percent of women at risk of unintended pregnancy were uninsured, which echoes research from the late 1980's in which 18 percent of married women were uninsured (Gold, Kenney & Singh 1987).

Differences in health insurance access by socioeconomic status affect contraceptive use and fertility in the United States. The most effective and expensive contraceptive methods are prescription methods (Cullwell & Feinglass 2007a; Cullwell & Feinglass 2007b; Trussell 2004). Women covered by health insurance are more likely than uninsured women to use prescription contraceptives (including the pill, implants, injections, IUD, patch, etc.) while uninsured women are more likely to use over-the-counter methods or do not use any contraceptives (Culwell & Feinglass 2007b; Culwell & Feinglass 2007a). Prescription contraceptive use increased three percent between 1995 and 2002; however, nearly all of that increase can be explained by increased contraceptive use among insured women (Culwell & Feinglass 2007b). Regardless of age, race, income and marital status, uninsured women are 20-40 percent less likely to use prescriptive contraceptives than insured women (Culwell & Feinglass 2007a). Low-income women are less likely to utilize contraceptives and, unsurprisingly, have higher rates of unintended pregnancy, which Finer & Henshaw (2006) recognize may be due to differences in

insurance access.

Even with existing health insurance, maternity coverage is a complicated matter. While employers with more than 15 employees are required by the Pregnancy Discrimination Act of 1978 to cover maternity with the same scope as other medical conditions, family dependents must be enrolled to be covered (Neuschler 2004; U.S. Equal Employment Opportunity Commission 2008). Moreover, not all private health insurance plans cover maternity. A 2001 study of private health insurance plans in Washington State found that 18 percent of health insurance plans lack basic maternity coverage (Kurth et al. 2001). Health insurance plans that do not include maternity coverage may offer a maternity rider as a supplement to the health insurance policy. Maternity riders often require waiting periods that may range from three months to a year, have a separate deductable and cost an additional $100 to $300 beyond the regular monthly insurance premium. Couples that purchase maternity riders exhibit rational fertility behavior, primarily because the rider may need to be in place for up to a year before conception.

Public insurance offers expanded eligibility for pregnant women and does not require enrollment prior to pregnancy, making it an attractive option for many. In fact, in the year 2000, 36.5 percent of U.S. births were covered by Medicaid (National Governors' Association Center for Best Practices 2002). Women at income levels up to 133% of the poverty line qualify under federal mandate, and many states have expanded above these levels (National Governors' Association Center for Best Practices 2002). Ellwood and Kenney (1995) report that, in the four states they studied in 1991, only 56 to 78 percent of pregnant women covered by Medicaid enrolled in the first trimester. However, even when engaging in rational decision making, some pregnant women inadvertently become the "mom in the middle" by losing employment or

previously held insurance benefits. In these cases the family's income is enough not to qualify for public programs and not enough to afford private insurance.

HYPOTHESES

Like the research referenced above, I understand fertility to be largely "purposive behavior" (Schoen et al. 1997: 339). With that underlying assumption, I hypothesize that health insurance coverage significantly affects age-specific fertility. The following considerations, as outlined in the literature, lay the foundations for why I think that I will find a significant effect for health insurance.

Cost of raising children

According to Becker, the cost of raising children is highest for parents with high incomes, though higher expectations and investment in children may be a function of education. Parents with high resources, such as income and education, have high expectations for their children and feel the need to invest more in their children's future, which limits the number of children they have, while low resource parents have lower expectations and do not need to invest as much in their children, which allows them to have more children. Following Becker, we would expect middle resource parents to have fewer children than parents with low resources but more children than high resource parents. The cost of raising children is lowered across incomes and levels of education if insured.

Opportunity cost

The opportunity costs of having children vary with the human capital of and role-incompatibility felt by the mother. Highly educated or specially trained working mothers face

higher opportunity costs when having children than do working mothers with less education, or specialized training, or even mothers who are not employed. Opportunity cost is especially high for women who are family insurance providers or primary breadwinners because they most likely feel increased role incompatibility.

Cost of contraceptives

Women who are insured are more likely to use prescriptive contraceptives than women who are uninsured, possibly because insurance subsidizes the higher cost of prescriptive contraceptives, while uninsured women are more likely to use less effective over-the-counter methods of contraceptives or none at all (Culwell & Feinglass 2007b). I argue that the implications of health insurance coverage on prescriptive contraceptive use vary by resources (education and income). High resource women without health insurance are able to buy prescriptive contraceptives even without insurance. Indeed, Culwell and Feinglass (2007a) found that differences in prescriptive contraceptive use for the insured and uninsured were insignificant for their highest income category. Low resource women are less likely to be insured. When insured, low resource women have access to prescriptive contraceptives, while low resource women without health insurance are more likely to use over-the-counter methods, which raise risks of unintended pregnancy.

Cost of birth

Low income women without insurance may not feel all worries associated with unintended pregnancy because they are likely to be covered by public insurance programs once pregnant (Gold et al. 1987). However, pregnancy without insurance coverage may be a bigger concern for women of mid-level income because they are less likely to qualify for public programs than low income women. For women of mid-level income, the cost of birth may seem

insurmountable. High income women may be especially aware of the costs of birth and possible complications. As a result, women with greater resources may be less likely to have a baby without insurance coverage. For all women, knowledge of the cost of birth and possible complications may be a function of education or the interaction between education and income.

As demonstrated in the literature, access to health insurance differs by resources, such as income and education, which may explain some of the differentials in fertility. Given the potentially complicated relationships between income, education and health insurance, I anticipate interactions in terms of health insurance access with income and education.

METHODS

Data

For this analysis, I utilize data from the 2001 Survey of Income and Program Participation (SIPP) (Center for Economic and Policy Research 2006). The SIPP is a nationally-representative civilian sample sponsored by the U.S. Census Bureau and provides information on health insurance. Participants in the SIPP are interviewed in waves every four months and respond to questions for each month since the interview, resulting in person-month data. There are nine waves (with four months each) of the 2001 SIPP, which result in 36 person-months. My sample consists of person-months of married women between the ages of 15 and 44 during the entire time of the study who are married at any time during the study (n= 12,523 married women ages 15-49; 322,207 person-months). I selected married women for the sake of family health insurance and women age 15 to 44 because these are prime reproductive years. The sample contains almost all of the births to married women; the last births in these data occur at age 51 (n=2) and only 3 births are to women who were younger than 15 at the start of the study and were thereby excluded from our sample. The number of women in our sample who gave birth to

a child during the observation time period is 1,549.

A number of studies of health insurance utilize the SIPP or the Current Population Survey (CPS) (April Benefits Supplement). Unlike the CPS, which surveys a household for eight months over two years with the Supplement data gathered just once a year, the SIPP provides continuous person-month data for up to 36 months. Interviews for the SIPP occur every four months, with respondents reporting on the previous four months. This is an advantage of the SIPP, as respondents are less likely to misreport or forget information (SIPP User Notes 2001). Additionally, the person-month structure of the SIPP allows for changes in health insurance status. Considering the assumptions and hypotheses that couples make rational decisions and obtain insurance before pregnancy, this is a major advantage over cross-sectional data or data gathered yearly. Unfortunately, the SIPP does not include information about maternity insurance, which is a limitation of this research.

(Table 1, Table 2 and Table 3 about here)

The birth rate for married women with husbands present in the 2001 SIPP is comparable to the birth rate in the 2002 Current Population Survey (CPS) (see Table 1), which suggests that the SIPP sample is representative of the national population. Since the CPS does not report age-specific birth rates for married women, Table 2 compares the age distribution of women (regardless of marital status) 15-44 years old in the SIPP and CPS. The age distributions of the CPS and SIPP are similar, which suggests that the age distribution of married women in the surveys is also similar. The SIPP and CPS provide lower estimates of birth rates than the National Center for Health Statistics (SIPP Users' Guide 2001), most likely because the National Center for Health Statistics calculates the number of births from birth certificates while the CPS and SIPP measure births by the mother's responses to questions about their children (Downs

2003). Table 3 shows how age-specific birth rates from the SIPP compare to those from the National Center for Health Statistics.

(Figure 1, Figure 2, Figure 3 and Figure 4 about here)

Figure 1 graphs the age-specific birth rate by educational attainment. Women with some college experience have higher birth rates later than women with only high school education, and women with college degrees or graduate work have even higher birth rates later. Interestingly, it would appear that uninsured women (see Figure 2) have lower birthrates, which generally decrease with age, in all but one age category. The birth rate for insured women is high initially, which may possibly be the result of teenage pregnancies on parental or public insurance. The birth rate for insured women also peaks around age 25-29, but also has a lesser peak between ages 30 and 34. Figure 3 graphs the age-specific birth rate and insurance status as well, but stratifies the sample by income. For this graph, Low Income represents those below the 20th percentile of income for the sample (less than $2,327 monthly income). The Mid Income level is between the 20th and 80th percentile for income, and High Income begins at the 80th percentile ($7,768 monthly income). Figure 4 is similar to Figure 3, but with educational attainment in place of income. Figures 3 and 4 suggest that women with ages 29 through 35 are more likely to have access to health insurance coverage and, when they do, they are more likely to have a child. This is observed across education and income levels.

Measures

Dependent variables: I am interested in conception or the beginning of pregnancy since I posit that health insurance coverage influences fertility decisions. I created my dependent variable of pregnancy by first marking increases in the children count variable (*childbirth*=1 for the months where a new child appears). I then counted back 9 months from childbirth to

determine pregnancy (*pregnancy*=1). Because I use childbirth as an indicator of pregnancy, only pregnancies that result in live births can be determined and pregnancies cannot be determined for the each respondent's last 9 months. This method is similar to Budig's (2003) approach, however I add an additional month; I count back 9 months instead of 8 to ensure that the health insurance coverage is in place (for those who have insurance) before knowing of the pregnancy. I do this in order to capture the effect that health insurance may have on fertility decisions.

Because I count back nine months from a new baby, I lose pregnancy status in the beginning and end months of my sample. Therefore, as a test of the robustness of my findings, I also use birth (increases in the children count variable, *childbirth*=1), which has fewer missing values, as a dependent variable to determine the differences in health insurance between pregnancy and childbirth.

Since the measure of health insurance does not include separate measures of maternity coverage, as a proxy, I estimate models with eight and seven months before birth as dependent variables. I do this in order to examine changes in the expected odds of pregnancy and birth by insurance.

Independent variables: I measure health insurance coverage by first creating a dummy variable combining military coverage, Medicaid and Medicare coverage. I grouped military coverage, Medicaid and Medicare together because of overlapping relationships. I then created an additive scale from "public" health insurance coverage (military, Medicaid and Medicare=4) and from the question, "Is your health insurance coverage in your own name or are you covered as a family member on someone else's plan?" (uninsured=0, covered by own health insurance=1, other's health insurance=2 or by both self and other's insurance=3). I excluded the overlapping cases (ex. covered by own health insurance and public insurance coverage) because of the

complexities of the data and their small percentage of the total population (less than 5% of the total population). *Uninsured* is the reference group.

Control variables: To measure employment, I first dummy coded employment status (1=with a job at least one week of the month, 0=no job all month). The SIPP allows respondents to report information on two jobs, so I added together the hours worked per week for the two jobs for a *total hours worked per week* variable; 1=unemployed (no job or no hours worked), 2=part-time (worked less than 35 hours a week) and 3=full-time (reported working more than 35 hours a week) with *unemployed* as the reference group.

I include the number of children in the family as count variables by age categories of one to two years old, three to five years old and six to seventeen years old as measures of past fertility. The rationale for including the number of children by age categories is that the mother's investment (i.e. time spent caring for children, money spent on childcare, school enrollment) varies by child's age and is not linear, making categories more appropriate.

I also included (potentially time-varying) measures of economic status and educational attainment variables in the model. The SIPP provides monthly measures of total family income, which I use to measure income. I include measures of educational attainment in my model; *high school* (less than high school and high school degree; this is the reference group)=1, *college* (some college)=2 and *completed college* (college degree and post-college)=3.

Other variables I control for in the analysis are age and race. Age is a continuous variable measured by age at last birthday. I constructed 4 race dummy variables from the categorical race variable in the SIPP (White, Black, Hispanic and Other). I omit the *White* from the analysis as the reference category because the majority of the sample (72%) is white.

Analytic Procedure

For my analysis, I use a Discrete-Time Hazard Model. The event of interest for the analysis is the beginning of a pregnancy during the survey time period. Since I am focusing on a relatively short period in the reproductive career of women, the data are both left and right censored, and the event of interest may only occur in discrete time intervals (months), I chose the discrete time approach (Singer & Willett 2004; Hoffmann 2004). I use STATA 10 to conduct all my analyses.

Because of the way the dependent measures are constructed, I estimate three different Discrete-Time Hazard Models. In the first model I use pregnancy, nine months before a new child appears, to examine the effect of health insurance status on pregnancy. I focus on pregnancy because I believe it is a more accurate depiction of the influence of health insurance coverage on fertility decisions. However, since I use birth to calculate pregnancy, I lose pregnancy status in the beginning and end months of my sample. Additionally, I allow repeated pregnancies because 113 women, seven percent of the women who gave birth, had more than one birth during the time period. By including repeated pregnancies I have nine months during pregnancy where each woman is not at risk of becoming pregnant again. Therefore, in a second model I examine the first observed pregnancy as the dependent variable. I do this in order to detect differences between repeated and first observed pregnancies that may have resulted from assuming women are at risk of pregnancy once they have already become pregnant. In the third model I use birth, or when a new child appears, as a repeatable dependent variable. The third model has fewer missing values and thus may provide more accurate results.

Since not all insurance providers include maternity coverage as a standard benefit, a limitation of this research is that the SIPP does not include a separate measure for maternity coverage. Given this limitation, I include models estimating the effects of insurance coverage

eight and seven months before birth. Results that trend towards the birth model indicate that the inclusion of these models is important for the analysis.

In addition to the Discrete-Time Logistic Regression, I also estimated a Random-Effects Logit Model to verify the assumptions of my Discrete-Time Logistic Regression. Even though there are multiple observations per respondent, because each observation is treated as a new data point, there are no problems with correlated errors. The results from the Random-Effects Logit Model, which takes correlated data into account, were nearly identical to my original models and the design effect is less than two. This indicates that I do not need to take multiple observations for each observation into account as only the women who became pregnant or have a child, depending on the outcome variable, affect the significance.

Initially I included a measure of income in the analysis, but removed it in the interest of parsimony and model fit. The income variable was not significant in any of the models and, when insurance was added into the model, the VIF for income was high even with the natural log transformation of income and even though the correlation between income and health insurance was low. It is also of note that, while income is not significant in any of the models, education is. This implies that the effects of education are sufficiently distinct from the effects of insurance, while the effects of income are not. Thus, health insurance coverage is an indicator of economic status.

RESULTS

(Table 4 and Table 5 about here)

In the SIPP sample, roughly 12 percent of the women gave birth during the 36 months (see Table 4). The majority of women are covered by health insurance; only 14 percent are uninsured. Over 41 percent of the women are covered by someone else's, most likely spousal,

insurance. Close to 32 percent have insurance coverage in their own name, and some women with insurance coverage in their name may be the insurance provider for the family. Only four percent are covered both by someone else's and own insurance, and five percent of the sample receives public insurance benefits alone. The remaining five percent are insured by a combination of both private and public insurance.

Women in the sample are mostly full-time workers (48%). Smaller groups of the sample are employed part-time (23%) or are unemployed (29%). The sample is also relatively well-educated, with over half of the women reporting at least some college experience. Almost eight percent of the women have graduate or professional post-college education. These results are representative of the educational attainment of U.S. women; almost 86 percent of U.S. women are high school graduates and close to 27 percent have graduated from college (U.S. Census Bureau 2008).

At the start of the study, a little over 10 percent of the sample was under age 25. Women ages 25-44 are well-represented in the sample. The majority of women report their race as White (71%), while Black (8%), Hispanic (14%), and Other races (6%) constitute smaller portions of the sample. Table 5 holds means and standard deviations for independent and control variables.

(Table 6 about here)

The correlation matrix is presented in Table 6. In order to deal with issues of collinearity in the model, I center the age variable (Tate 1984). The VIFs in all discrete-time regression remain under acceptable levels (VIF less than 10).

(Table 7 about here)

In order to test the effect of health insurance on fertility I use the beginning of pregnancy

as my first dependent variable. The results of the discrete-time logistic regression[1] full model (see Table 7) indicate that health insurance does indeed influence fertility; women who have public insurance or are covered by someone else's insurance are more likely to get pregnant than women who are not covered by any type of health insurance. Women who have public insurance are 45 percent more likely, and women covered by someone else's insurance are 27 percent more likely to become pregnant than women who are uninsured.

Children, educational attainment, age, and race are also factors that influence pregnancy. Controlling for all other effects in the model, younger children positively affect the event of pregnancy; for each child a woman has between ages one and two, there is an 82 percent increase in the expected odds that she will become pregnant again and, for each child ages three to five, the expected odds increase 25 percent. Conversely, the presence of older children decreases the expected odds of pregnancy by 23 percent per child. Interestingly, women with college and post-college educations have higher expected odds of pregnancy than women with high school educations. The likelihood of pregnancy lessens with age, and black women are less likely to get pregnant than married women of other races.

The third full model (model 2 in Table 7) presents the estimated effects of health insurance coverage on birth. In the birth model, insurance coverage is again a significant influence on fertility. Insurance coverage in own name, coverage by someone else, and public health insurance all are associated with higher expected odds of having a baby compared to the uninsured. Own insurance coverage is not significant in the pregnancy model, but becomes significant in this model. Insurance coverage in own name increases the expected odds of having another baby by 44 percent. Being covered by someone else's insurances increases the expected

[1] I also model the effects of insurance on first observed pregnancy, but the results are similar. Since both pregnancy models were analogous I only include the results from the first model in Table 7.

odds 56 percent, and public health insurance coverage is associated with twice the odds of having a baby compared to being uninsured. The odds-ratios and significance levels of the primary independent variable, insurance, do not differ markedly between the pregnancy and birth models, signifying that the pregnancy model is an adequate representation even though it utilizes fewer cases due to the missing values created by the pregnancy measure.

The other significant covariates are generally similar to the first (pregnancy) model; however in this model employment becomes significant, women employed part or full time have less expected odds of having another child compared to women who are not employed, and race and older children are no longer significant. Women with either part or full time employment reduce the likelihood of having a baby; married women who work full time are 45 percent less likely to have a baby than women who are not employed. The effects of the remaining significant variables (young children, educational attainment and age) are similar to those from the pregnancy model.

(Table 8 about here)

Once I observed the differences between the pregnancy and birth models, I estimated additional models with alternate months before the birth as dependent variables in order to better address potential measurement issues with insurance type. Included in Table 8 are the results of models for eight and seven months before birth. As you can see, there is a trend toward the effects of the birth model. All the odd-ratios for insurance types are above one and are significant. The effects for employment, though not significant, change from positive eight months before birth, mirroring the pregnancy model, to negative seven months before birth, which is more like the birth model. The effects found in models three and four generally fit between and follow a pattern from the pregnancy to birth models.

I also tested for interaction effects in both pregnancy and birth models between income and health insurance, education and health insurance, and income and education. However, none of the interaction terms were significant.

To test the effect of health insurance coverage on fertility further I estimated insurance coverage as a binary variable (1=any type of insurance coverage, 0=uninsured). Women who are insured have a greater likelihood of pregnancy and birth than uninsured women. Additionally, I replaced the reference group "no insurance" with one of the types of private insurance and found that there is little difference in the size of the effect between the types of health insurance. In short, any kind of insurance increases the likelihood of childbearing.

DISCUSSION

As hypothesized, I find that health insurance coverage influences fertility. When grouped together, all types of health insurance coverage increase the likelihood of having children compared to the likelihood of having children if uninsured. When the effects are examined separately, own insurance coverage, coverage on someone else's plan and public insurance positively affect the likelihood of another birth, while coverage on someone else's plan and public insurance positively affect the expected odds of pregnancy.

Although there is an increased likelihood of giving birth for women with insurance in their own name, since these women are most likely have insurance through full-time employment, the higher expected odds of own insurance may be mediated by the negative expected odds of employment. Neither employment nor own insurance coverage is significant in Model 1: Pregnancy, but both become significant in Model 2: Birth, suggesting that the significant positive effects of own insurance may be explained by employed women who become pregnant and are able to quit before the birth of the baby.

Employment, age and the age and number of children each have strong effects on the probability of giving birth and, excluding employment, significantly influence the likelihood of becoming pregnant. These effects are strong, and are most likely stronger effects than health insurance coverage. However, health insurance does influence fertility and, until now, has largely been a neglected part of this complicated process.

More types of health insurance coverage are significant in the model examining the effects of health insurance on birth. The birth model, model two, may provide a clearer picture; pregnant women may be more likely to respond affirmatively when asked about insurance coverage when insured with maternity coverage. Moreover, the high expected odds of giving birth for those with public insurance may be partially explained by the number of women that qualify for public insurance upon becoming pregnant. The results from the models with dependent variables of eight and seven months before birth support the need for the inclusion of a measure of maternity coverage; the effect of health insurance becomes stronger closer to birth.

In order to parcel out these effects, especially as they apply to public insurance, future research needs better measures of health insurance coverage, including separate measures for maternity coverage. At the very least, the results from models of eight and seven months before birth indicate that it is important to pursue the questions of transitions in insurance and the likely influence of maternity coverage.

Because there were no significant interactions between health insurance and income and education respectively, it follows that health insurance operates as a separate, independent effect. It is not uncommon that there are no effects for income; past literature reports that significant effects of income on fertility are sporadic. Still, prior literature demonstrates that access to health insurance varies by socioeconomic status, which implies the presence of interaction effects.

Moreover, the neoclassic economic models of fertility discussed in this analysis concentrate on income. However, while income alone is not significant in any of the models, education is. The lack of interactions with health insurance signifies that education operates separately as well. The effects of both education and insurance are strong indicators of fertility. This suggests that childbearing decisions may be influenced by human capital resources, such as health insurance and education, rather than income. The neoclassical economic theories of fertility considered in this research may be correct in considering the direct cost of children, but the focus on income does not accurately characterize fertility decisions. Rather, a focus on resources, such as education, or integration of human capital perspectives may be more advantageous.

The surprising higher likelihood of birth and pregnancy for highly educated women may be a function of limiting the sample to married women. With couples postponing marriage until they are financially ready to marry (Smock, Manning & Porter 2005), it follows that women who marry generally have stable relationships, are well-educated and established financially. These women most likely are covered by health insurance and have the resources they perceive as needed to have children. Indeed, Musick (2002) reports that college-educated women are more likely to marry before giving birth than women with only a high school education. This suggests that marriage, health insurance and fertility are a package, and that insurance may be one of the factors that influence marriage timing. However, this does not fully explain the unexpected education finding. I have included Appendix Table 1A, which holds results from two models comparing the effects of education on number of total children less than 18 and probability of birth. The effects for education differ between the models, but the effects from Model 1 are consistent with the literature. I am still unsure as to why the effects differ and the cause of the positive effect of education on the probability of birth.

The analysis suggests that policies focusing on insurance coverage, regardless of the whether insurance is employer-based or public, will influence fertility behavior of U.S. women. It also suggests that health insurance should be examined with financial status and educational attainment as a pre-requisite to marriage. As it stands, insurance and maternity coverage may be difficult to obtain, especially for certain subsets of the population. Based on the results of this research, policies that provide insurance to everyone will encourage fertility but other factors, such as age, employment, and the age and number of children also strongly affect fertility, even more strongly than health insurance coverage.

CONCLUSION

In this research, I find support for my hypothesis that health insurance coverage affects fertility. Health insurance is a powerful indicator of fertility. Married women with insurance coverage, especially private insurance coverage provided by someone else's plan, coverage in own name or public insurance, have increased expected odds of fertility compared to uninsured women.

Additionally, this analysis lends support to rational choice framework of fertility decisions, as resources such as health insurance and education strongly influence fertility. The effects of control variables, such as employment and number and ages of children, also echo prior research and sustain the perspective that married couples are rational actors with regards to fertility decisions.

Further research on health insurance coverage, especially maternity coverage, is needed to understand the mechanisms by which it influences fertility. Additionally, birth history research with marriage duration and educational attainment would improve understanding of the relationship between marriage, insurance, education and fertility and may give additional

insights into the finding in this analysis that highly educated women have higher expected odds of having a baby than women with high school educations.

REFERENCES

Abraham, Jean M. and Anne Beeson Royalty. 2005. "Does Having Two Earners in the Household Matter for Understanding How Well Employer-Based Health Insurance Works?" *Medical Care Research and Review* 62(2):167-186.

Acker, Joan. 1990. “Hierarchies, Jos, and Bodies: A Theory of Gendered Organizations.” *Gender and Society* 4:139-158.

Ahn, Namkee and Pedro Mira. 2002. “A Note on the Changing Relationship between Fertility and Female Employment Rates in Developed Countries.” *Journal of Population Economics* 15:667-682.

Becker, Gary S. 1981. *A Treatise on the Family*. Cambridge, MA: Harvard University Press.

Brewster, Karin L. and Ronald R. Rindfuss. 2000. "Fertility and Women's Employment in Industrialized Nations." *Annual Review of Sociology* 26:271-296.

Buchmueller, Thomas C. 1996. “Marital Status, Spousal Coverage, and the Gender Gap in Employer-Sponsored Health Insurance.” *Inquiry* 33:508-316.

Buchmueller, Thomas C. and Robert G. Valletta. 1999. "The Effect of Health Insurance on Married Female Labor Supply." *The Journal of Human Resources* 34(1):42-70.

Budig, Michelle J. 2003. “Are Women’s Employment and Fertility Histories Interdependent? An Examination of Causal Order Using Event History Analysis.” *Social Science Research* 32:376-401.

Budig, Michelle J. and Paula England. 2001. "The Wage Penalty for Mothers." *American Sociological Review* 66:204-225.

Center for Economic and Policy Research. 2006. SIPP Uniform Extracts, Version 2.0. Washington, DC.

Correll, Shelley J., Stephen Benard and In Paik. 2007. “Getting a Job: Is there a Motherhood Penalty?” *American Journal of Sociology* 112:1297-1338.

Cubbins, Lisa A. and Penelope Parmer. 2001. “Economic Change and Health Benefits: Structural Trends in Employer-Based Health Insurance.” *Journal of Health and Social Behavior* 42(1):45-63.

Culwell, Kelly R. and Joe Feinglass. 2007a. “The Association of Health Insurance With Use of Prescription Contraceptives.” *Perspectives on Sexual and Reproductive Health* 39(4):226-230.

Culwell, Kelly R. and Joe Feinglass. 2007b. “Changes in Prescription Contraceptive Use, 1995-2002.” *Obstetrics & Gynecology* 110(6):1371-1378.

DeNavas-Walt, Carmen, Bernadette D. Proctor and Jessica Smith. 2007. “Income, Poverty, and Health Insurance Coverage in the United States: 2006.” U.S. Census Bureau, Current Population Reports, P60-233, U.S. Government Printing Office, Washington, DC.

DeNavas-Walt, Carmen, Bernadette D. Proctor and Robert J. Mills. 2004. *Income, Poverty, and Health Insurance Coverage in the United States: 2003.* Current Population Reports, U.S. Department of Commerce, Economics and Statistics Administration, U.S. Census Bureau.

Desai, Sonalde and Linda J. Waite. 1992. "Women's Employment During Pregnancy and After the First Birth: Occupational Characteristics and Work Commitment." *American Sociological Review* 56(4):551-566.

DeVaney, Sharon A. and Sophia T. Anong. 2007. “The Likelihood of Having Employer-Sponsored Health Insurance.” Compensation and Working Conditions Online, U.S. Department of Labor, Bureau of Labor Statistics. Retrieved June 5, 2008.

(http://www.bls.gov/opub/csc/print/cm20071128ar01p1.htm)

Downs, Barbara. 2003. “Fertility of American Women: June 2002.” Current Population Reports, U.S. Department of Commerce, Economics and Statistics Administration, U.S. Census Bureau. Retrieved June 11, 2008. (http://www.census.gov/prod/2003pubs/p20-548.pdf)

Dushi, Irena and Marjorie Honig. 2003. “Price and Spouse’s Coverage in Employee Demand for Health Insurance.” *The American Economic Review* 93(2):252-256.

Easterlin, Richard A. 1975. “An Economic Framework for Fertility Analysis.” *Studies in Family Planning* 6(3):54-63.

Ellwood, Marilyn Rymer and Genevieve Kenny. 1995. “Medicaid and Pregnant Women: Who is Enrolled and When.” *Health Care Finance Review* 17(1):7-28.

Felmlee, Diane H. 1993. “The Dynamic Interdependence of Women’s Employment and Fertility.” *Social Science Research* 22(4):333-360.

Finer, Lawrence B. and Stanley K. Henshaw. 2006. “Disparities in Rates of Unintended Pregnancy In the United States, 1994 and 2001.” *Perspectives on Sexual and Reproductive Health* 38(2):90-96.

Freedman, Deborah S. and Arland Thornton. 1982. “Income and Fertility: The Elusive Relationship.” *Demography* 19(1):65-78.

Gauthier, Anne H. 2007. “The Impact of Family Policies on Fertility in Industrialized Countries: A Review of the Literature.” *Population Research and Policy Review* 26:323-346.

Gold, Rachel Benson, Asta M. Kenney and Susheela Singh. 1987. “Paying for Maternity Care in the United States.” *Family Planning Perspectives* 19(5):190-206.

Hochschild, Arlie Russell. 1997, *Time Bind: When Work Becomes Home and Home Becomes*

Work. New York, NY: Henry Hold and Company.

Hoffmann, John P. 2004. *Generalized Linear Models: An Applied Approach*. Boston, MA: Pearson Education.

Honig, Marjorie and Irena Dushi. 2005. "Household Demand for Health Insurance: Price and Spouse's Coverage." Presented at the annual meeting of the American Economic Association.

Institute of Medicine of the National Academies. 2002. *Health Insurance is a Family Matter*, Committee on the Consequences of Uninsurance, Board of Health Care Services. Washington, D.C.: National Academy Press.

Kurth, Ann, Lori Bielinski, Kris Graap, John Conniff and Frederick A. Connell. 2001. "Reproductive and Sexual Health Benefits in Private Health Insurance Plans in Washington State" *Family Planning Perspectives* 33(4):153-179.

The March of Dimes. 2007. "The Healthcare Costs of Having a Baby." Thomson Healthcare, Santa Barbara, CA. Retrieved May 5, 2008. (http://www.kff.org/womenshealth/upload/whp061207othc.pdf)

Musick, Kelly. 2002. "Planned and Unplanned Childbearing Among Unmarried Women." *Journal of Marriage and Family* 64:915-929.

Neuschler, Ed. 2004. "Policy Brief on Tax Credits for the Uninsured and Maternity Care." Institute for Health Policy Solutions, Prepared for The March of Dimes. Retrieved August 12, 2008. (http://www.marchofdimes.com/TaxCreditsJan2004.pdf)

National Center for Health Statistics. 2001. Vital Statistics of the United States, 2001, Volume 1, Natality. U.S. Department of Health and Human Services, Centers for Disease Control

and Prevention. Retrieved May 8, 2008. (http://www.cdc.gov/nchs/datawh/statab/unpubd/natality/natab2001.htm)

National Governors' Association Center for Best Practices. 2002. MCH Update 2002: State Health Coverage for Low-Income Pregnant Women, Children, and Parents. Retrieved August 13, 2008. (www.nga.org/Files/pdf/MCHUPDATE02.pdf)

O'Connor, Julia S., Ann Shola Orloff and Sheila Shaver. 1999. *States, Markets, Families: Gender, Liberalism and Social Policy in Australia, Canada, Great Britain and the United States.* New York, NY: Cambridge University Press.

Olson, Craig A. 1998. "A Comparison of Parametric and Semiparametric Estimates of the Effect of Spousal Health Coverage on Weekly Hours Worked by Wives." *Journal of Applied Econometrics* 13:543-565.

Olson, Craig A. 1995. "Parttime Work, Health Insurance Coverage and the Wages of Married Women." Mimeo. University of Wisconsin.

Orloff, Ann. 1996. "Gender in the Welfare State." *Annual Review of Sociology* 22:51-78.

Rindfuss, Ronald R. and Karin L. Brewster. 1996. "Childrearing and Fertility" *Population and Development Review* 22(Supplement):258-289.

Rindfuss, Ronald R., Karen Benjamin Guzzo and S. Philip Morgan. 2003. "The Changing Institutional Context of Low Fertility." *Population Research and Policy Review* 22(5-6):411-438.

Rindfuss, Ronald R., S. Philip Morgan and D. Offutt. 1996. "Education and the Changing Age Pattern of American Fertility: 1963-1989." *Demography* 33(3):277-290.

Royalty, Anne Beeson and Jean M. Abraham. 2006. "Health Insurance and Labor Market

Outcomes: Joint Decision-Making Within Households." *Journal of Public Economics* 90:1561-1577.

Royalty, Anne Beeson and Jean M. Abraham. 2003. "His or Hers? Employer-Based Health Insurance Offers and Two-Earner Households." Presented at "The Employer as Agent in the Provision of Health and Retirement Benefits" Conference, April 26, 2002.

Seccombe, Karen and Cheryl Amey. 1995. “Playing by the Rules and Losing: Health Insurance and the Working Poor.” *Journal of Health and Social Behavior* 36(2):168-181.

Singer, Judith D. and John B. Willett. 2003. *Applied Longitudinal Data Analysis: Modeling Change and Event occurrence.* New York, NY: Oxford University Press.

Schoen, Robert, Young J. Kim, Constance A. Nathanson, Jason Fields and Nan Marie Astone. 1997. “Why Do Americans Want Children?” *Population and Development Review* 23(2):333-358.

Smock, Pamela J., Wendy D. Manning and Meredith Porter. 2005. “‘Everything’s There Except money’: How Money Shapes Decisions to Marry Among Cohabitors.” *Journal of Marriage and Family* 67:680-696.

Survey of Income and Program Participation Users’ Guide. 2001. Third Edition. Washington, D.C.: U.S. Department of Commerce, Economics and Statistics Administration, U.S. Census Bureau.

Tate, Richard L. 1984. “Limitations of Centering for Interactive Models.” *Sociological Methods and Research* 13:251-271.

Thistle, Susan. 2006. *From Marriage to the Market: The Transformation of Women’s Lives and Work.* Berkeley, CA: University of California Press.

Trussell, James. 2004. “Contraceptive Failure in the United States.” *Contraception* 70:89-96.

U.S. Census Bureau, Current Population Survey. 2008. “The 2008 Statistical Abstract: Educational Attainment.” Retrieved August 11, 2008. (http://www.census.gov/population/www/socdemo/educ-attn.html)

U.S. Equal Employment Opportunity Commission. 2008. “Pregnancy Discrimination.” Retrieved August 13, 2008. (http://www.eeoc.gov/types/pregnancy.html)

Volling, Brenda L. and Jay Belsky. 1993. "Parent, Infant, and Contextual Characteristics Related to Maternal Employment Decisions in the First Year of Infancy." *Family Relations* 42(1):4-12.

Wellington, Alison J. and Deborah A. Cobb-Clark. 2000. "The Labor-Supply Effects of Universal Health Coverage: What Can We Learn from Individuals with Spousal Coverage?" *Research in Labor Economics* 19:315-344.

Whittington, Leslie A. 1992. “Taxes and the Family: The Impact of the Tax Exemption for Dependents on Marital Fertility.” *Demography* 29(2):215-226.

TABLES

Table 1. Comparison of Married Women in the SIPP and CPS

Married Women Ages 15-44 - Husband Present

	2002 CPS	2001 SIPP
Number of women	27,828	11,209
Births per 1,000 women	85.6	82.2

CPS Data from Downs 2003, Fertility of American Women: June 2002

Table 2. Comparison of Women in the SIPP and CPS Ages 15 to 44

	2002 CPS		2001 SIPP	
Age	Frequency	Percent	Frequency	Percent
15-19	9809	16.0	3746	16.1
20-24	9683	15.8	3869	16.7
25-29	9221	15.0	3691	15.9
30-34	10284	16.8	3661	15.8
35-39	10803	17.6	4098	17.7
40-44	11561	18.8	4144	17.9

Table 3. Age-Specific Birth Rates for Married Women, 2001

	15-17	18-19	20-24	25-29	30-34	35-39	40-44
National	221.2	306.8	211.4	160.1	116.8	48.7	9.8
SIPP Sample	148.6	250.1	151.7	138.3	119.2	55.3	20.4

Reported as rate per 1,000 women

National Birth Rates from Vital Statistics 2001, National Center for Health Statistics

Table 4. Married Women's Sample Descriptives

	Frequency	Percent
Gave Birth During Time Period		
No	10,974	87.63
Yes	1,549	12.38
Insured (At Start of Time)		
No	1,767	14.11
Private Insurance - Both Covered	488	3.90
Private Insurance - Covered by Someone Else	5,169	41.28
Private Insurance - Covered in Own Name	3,956	31.59
Public Insurance	585	4.67
Private Insurance - Both Covered and Public	36	0.29
Private Insurance - Covered by Someone Else and Public	390	3.11
Private Insurance - Covered in Own Name and Public	132	1.05
Employed (At Start of Time)		
No	3,659	29.22
Part-time	2,892	23.09
Full-time	5,972	47.69
Educational Attainment (At Start of Time)		
Less than High School	1,489	11.89
High School Graduate	3,681	29.39
Some College	3,993	31.89
College Degree	2,399	19.16
Post-College	961	7.67
Age (At Start of Time)		
15-17	74	0.59
18-19	247	1.97
20-24	1,175	9.38
25-29	2,024	16.16
30-34	2,359	18.84
35-39	2,644	21.11
40-44	2,700	21.56
45-49	1,300	10.38
Race		
White	8,982	71.72
Black	994	7.94
Hispanic	1,802	14.39
Other	745	5.95
N =	12,523	

Table 5. Variables and Descriptive Statistics

Variable Name	Description	Mean	Standard Deviation
Pregnancy	Binary measure of pregnancy (9 months prior to birth)	0.0044	0.0658
Birth	Birth of child; 1=Birth of child, 0=else	0.0054	0.0731
Insurance	0=Uninsured, 1=public insurance, 2=Private insurance, covered by someone else, 3=Private insurance in own name, 4=Private insurance by both	2.0834	1.0701
Income	Natural log of income	8.2215	1.3297
Employment	0=Not employed, 1=part time employment, 2=full time employment	1.1745	0.8543
Kids 1-2	Number of children in family ages 1 to 2	0.1347	0.3607
Kids 3-5	Number of children in family ages 3 to 5	0.2145	0.4677
Kids 6-17	Number of children in family ages 6 to 17	0.8086	1.0485
Education	0=High school degree and lower, 1=some college, 2=college degree or post-college	2.8664	1.1135
Age	Z score of age (in years) at last birthday	0.0000	1.0000
Race	0=White, 1=Black, 2=Hispanic, 3=Other	1.5287	0.9353

Table 6. Correlation Matrix with Independent and Control Variables

	1	2	3	4	5	6	7	8	9
1. Insurance	-----								
2. Income	0.3062**	-----							
3. Employment	0.4331**	0.2711**	-----						
4. Kids 1-2	-0.0681**	-0.0315**	-0.1352**	-----					
5. Kids 3-5	-0.0675**	-0.0218**	-0.1352**	0.1687**	-----				
6. Kids 6-17	-0.0464**	0.0468**	-0.0596**	-0.0718**	0.0129**	-----			
7. Education	0.3448**	0.2579**	0.1736**	0.0291**	0.0107**	-0.092**	-----		
8. Age	0.1502**	0.1901**	0.0788**	-0.2294**	-0.1623**	0.258**	0.0772**	-----	
9. Race	-0.1802**	-0.0891**	-0.0729**	0.0239**	0.0382**	0.0186**	-0.1705**	-0.0551**	-----

**p<.001

Table 7. Odds-Ratios from Discrete-Time Hazard Models of Pregnancy and Childbirth Among Married Women

	Model 1: Pregnancy			Model 2: Birth		
	Zero Order	Controls	Full Model	Zero Order	Controls	Full Model
Her Insurance	0.8796		1.2540	1.0098		1.4392*
	(.1051)		(.2000)	(.1259)		(.2372)
His insurance	1.2033		1.2732*	1.0365		1.5577*
	(.1362)		(.1480)	(.1010)		(.2048)
Both insurance	0.7480		1.4004	0.9872		1.3573
	(.1268)		(.2601)	(.1665)		(.2753)
Public insurance	2.3003**		1.4544*	1.5687*		2.0444**
	(.3079)		(.2290)	(.2429)		(.2721)
Part-time		1.0782	1.0525		0.6017**	0.6073**
		(.1162)	(.1112)		(.0425)	(.0450)
Full-time		0.9666	0.9315		0.5359**	0.5516**
		(.0798)	(.1067)		(.0358)	(.0508)
Kids 1-2		1.8039**	1.8278**		1.5124**	1.4801**
		(.1254)	(.1287)		(.0811)	(.0821)
Kids 3-5		1.2694**	1.2547**		1.4025**	1.4046**
		(.0792)	(.0805)		(.0612)	(.0631)
Kids 6-17		0.7806**	0.7742**		0.9783	0.9595
		(.0401)	(.0407)		(.0335)	(.0344)
College		1.2503*	1.2594*		1.3193**	1.3047*
		(.1182)	(.1205)		(.0935)	(.1069)
College Degree		1.6613**	1.6531**		1.8645**	1.8213**
		(.1383)	(.1511)		(.1217)	(.1345)
Age		0.5344**	0.5314**		0.4942**	0.4954**
		(.0192)	(.0202)		(.0145)	(.0147)
Black		0.7810	0.7253*		0.9530	0.9315
		(.1123)	(.1119)		(.1028)	(.1075)
Hispanic		1.0043	1.0836		1.0223	1.1068
		(.1021)	(.1136)		(.0777)	(.0932)
Other		1.1619	1.1543		1.0857	1.0915
		(.1774)	(.1809)		(.1243)	(.1291)

* p<.05 **p<.001

*** Analyses are weighted with person-month weight.

Table 8. Logistic Regression Insurance Odds-Ratios for All Full Models

	Model 1: Pregnancy	Birth -8	Birth -7	Model 2: Birth
Her Insurance	1.2540	1.3792*	1.6289*	1.4392*
	(.2000)	(.1801)	(.2458)	(.2372)
His insurance	1.2732*	1.4426*	1.5623**	1.5577*
	(.1480)	(.1618)	(.1718)	(.2048)
Both insurance	1.4004	1.5516*	2.0933**	1.3573
	(.2601)	(.2673)	(.3490)	(.2753)
Public insurance	1.4544*	2.1229**	2.5409**	2.0444**
	(.2290)	(.3012)	(.3445)	(.2721)
Part-time	1.0525	1.0149	.9096	0.6073**
	(.1112)	(.0947)	(.0989)	(.0450)
Full-time	0.9315	1.0080	0.8235	0.5516**
	(.1067)	(.0937)	(.1088)	(.0508)
Kids 1-2	1.8278**	1.8136**	1.7228**	1.4801**
	(.1287)	(.1175)	(.1112)	(.0821)
Kids 3-5	1.2547**	1.2599**	1.2676**	1.4046**
	(.0805)	(.0737)	(.0732)	(.0631)
Kids 6-17	0.7742**	0.7611**	0.7654**	0.9595
	(.0407)	(.0376)	(.0357)	(.0344)
College	1.2594*	1.2000*	1.2481*	1.3047*
	(.1205)	(.1093)	(.1110)	(.1069)
College Degree	1.6531**	1.6247**	1.6580**	1.8213**
	(.1511)	(.1394)	(.1370)	(.1345)
Age	0.5314**	0.5376**	0.5360**	0.4954**
	(.0202)	(.0191)	(.0180)	(.0147)
Black	0.7253*	0.7788	0.7843	0.9315
	(.1119)	(.1116)	(.1040)	(.1075)
Hispanic	1.0836	1.1119	1.0937	1.1068
	(.1136)	(.1083)	(.1036)	(.0932)
Other	1.1543	1.1056	1.0696	1.0915
	(.1809)	(.1658)	(.1547)	(.1291)

* p<.05 ** p<.001

*** Analyses are weighted with person-month weight

FIGURES

Figure 1.

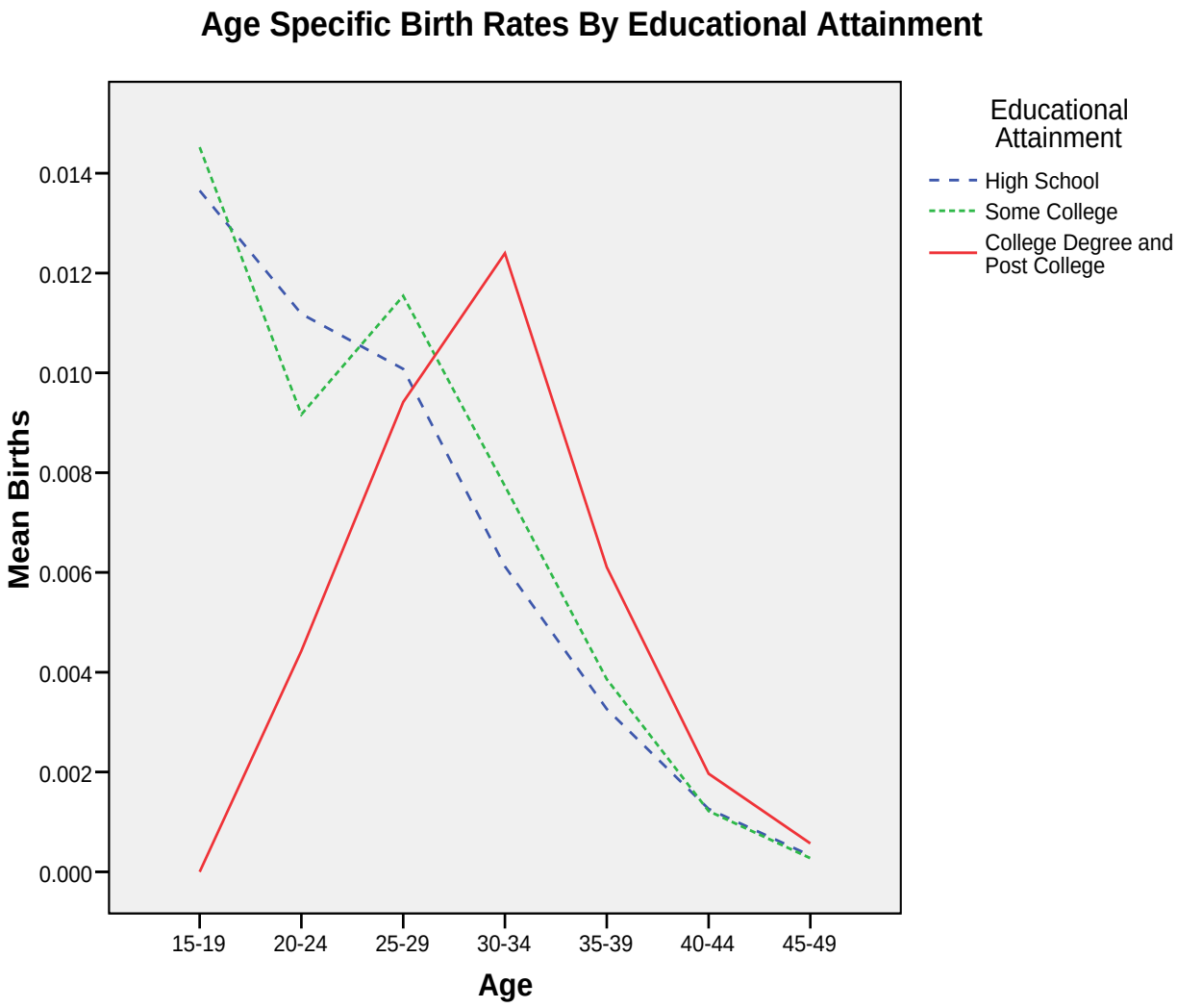


Figure 2.

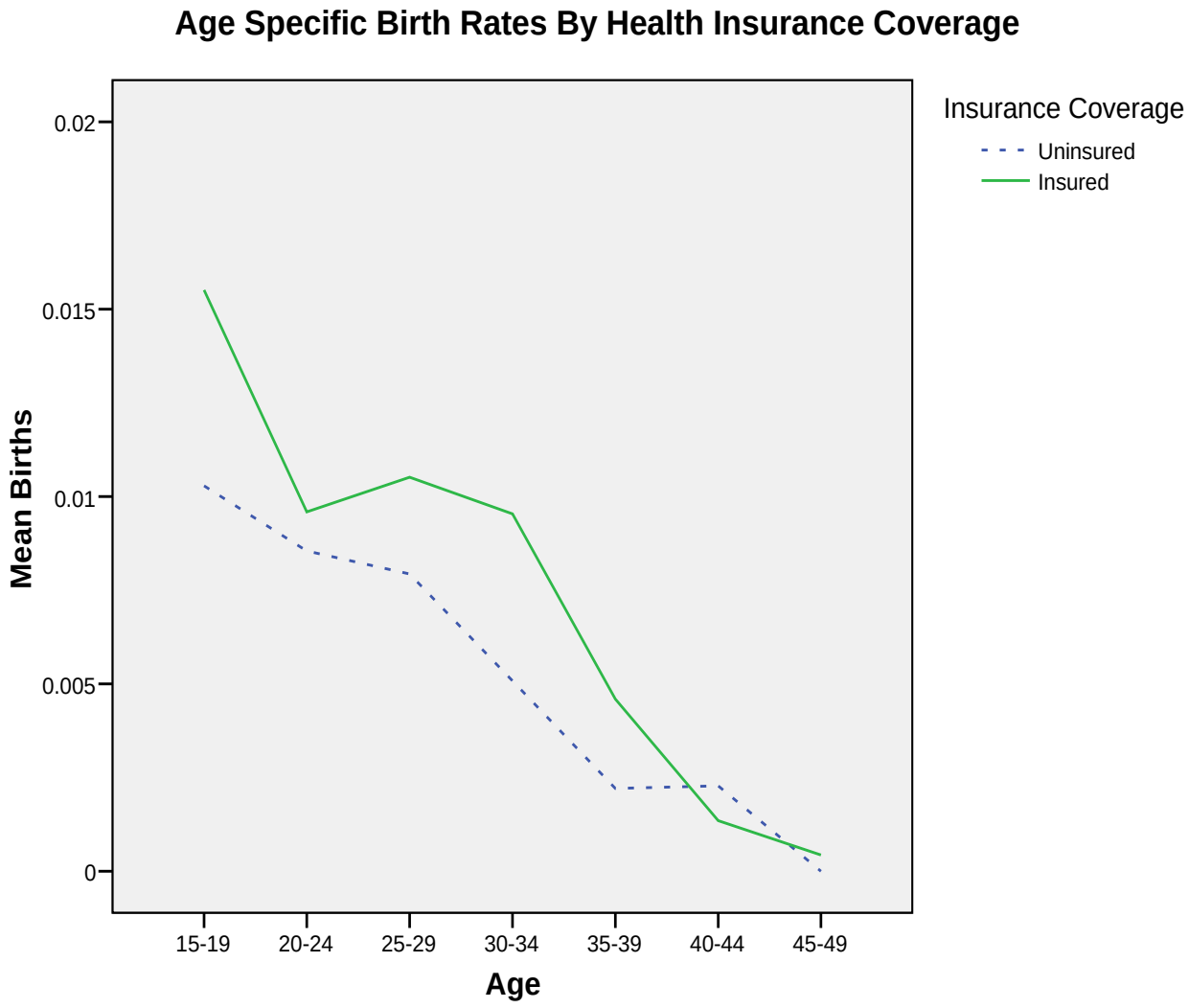

Age Specific Birth Rates By Health Insurance Coverage
Mean Births
0.02
0.015
0.01
0.005
0
15-19
20-24
25-29
30-34
35-39
40-44
45-49
Age
Insurance Coverage
Uninsured
Insured

Figure 3.

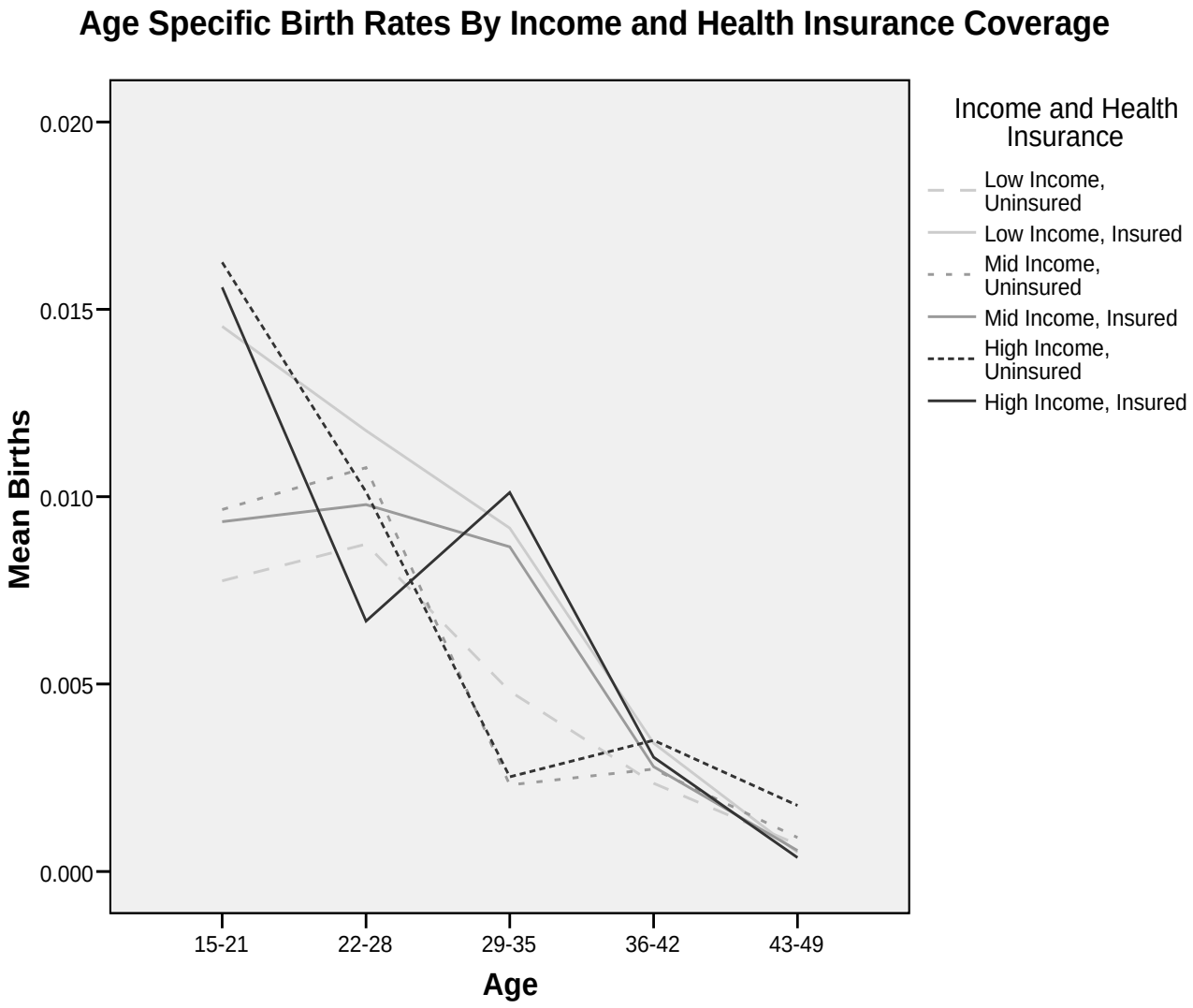
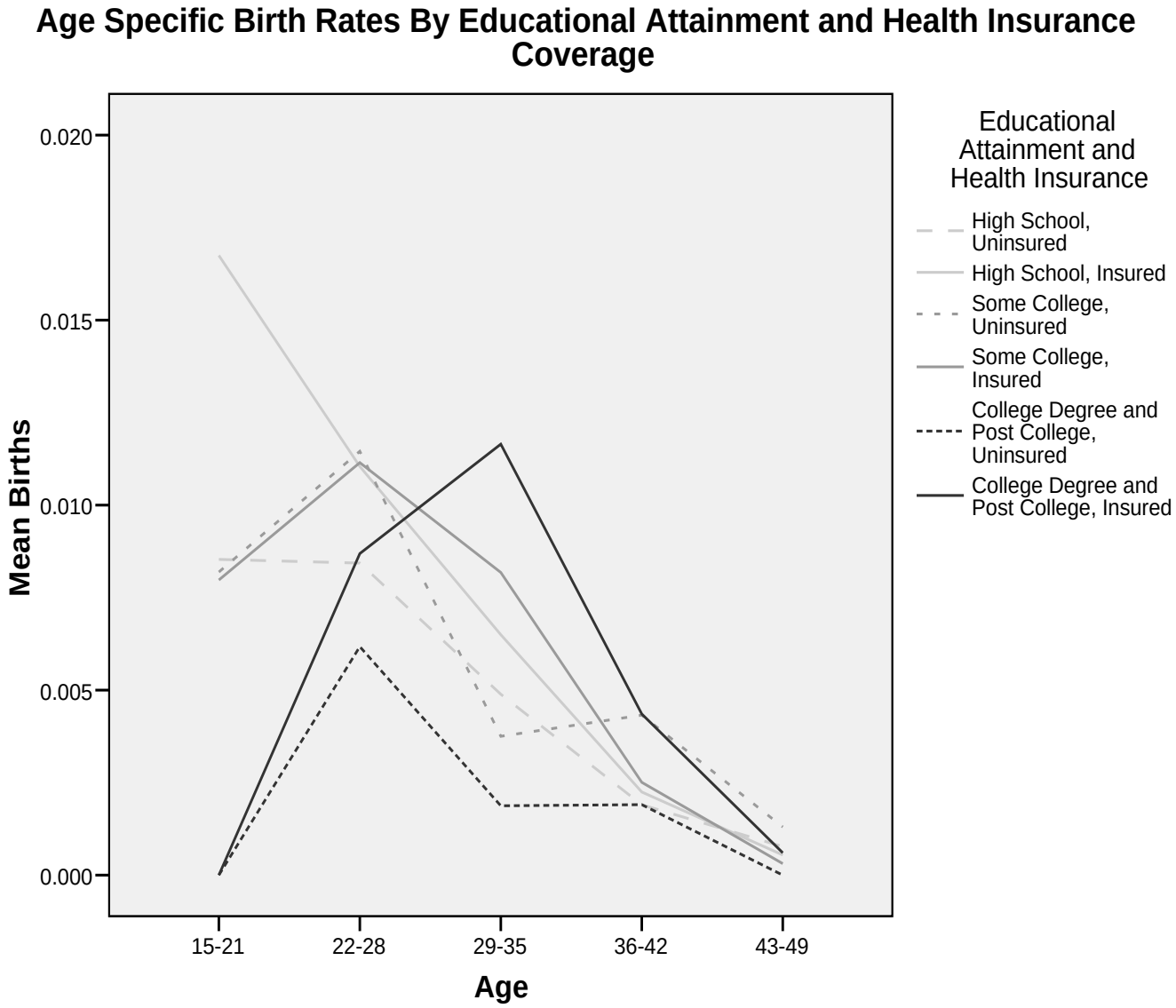

Age Specific Birth Rates By Income and Health Insurance Coverage
Mean Births
0.020
0.015
0.010
0.005
0.000
15-21
22-28
29-35
36-42
43-49
Age
Income and Health Insurance
Low Income, Uninsured
Low Income, Insured
Mid Income, Uninsured
Mid Income, Insured
High Income, Uninsured
High Income, Insured

Figure 4.


Age Specific Birth Rates By Educational Attainment and Health Insurance Coverage
Mean Births
0.020
0.015
0.010
0.005
0.000
15-21
22-28
29-35
36-42
43-49
Age
Educational Attainment and Health Insurance
High School, Uninsured
High School, Insured
Some College, Uninsured
Some College, Insured
College Degree and Post College, Uninsured
College Degree and Post College, Insured

APPENDIX

Appendix Table A1. OLS Regression and Logistic Regression Odds-Ratios

	Model 1	Model 2
	Total Number of Children under 18	Birth
College	-0.3313**	0.8984
	(.0174)	(.0506)
College Degree	-0.4160**	1.0695
	(.0197)	(.0609)
Married	0.8324**	4.0310**
	(.0198)	(.3441)
Widowed	0.3807**	1.9350
	(.0648)	(.6784)
Divorced	0.3797**	1.9154**
	(.0275)	(.2500)
Separated	0.571**	2.0678**
	(.0480)	(.3200)
Black	0.4448**	1.3541**
	(.0240)	(.0915)
Hispanic	0.4013**	1.2026*
	(.0250)	(.0751)
Other	0.1125**	1.2013
	(.0318)	(.1184)
Age	0.0074	1.4860**
	(.0060)	(.0425)
Age Squared	-.0005**	0.9624**
	(.0001)	(.0005)

* p<.05 **p<.001

*** Analyses are weighted with person-month weight

**** Model 1 is OLS Regression with the total number of children under 18, women are the unit of analysis; Model 2 is Logistic Regression with the expected odds of giving birth using person-months as the unit of analysis