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A Retrospective Study of Teen Pregnancy in West Virginia from 2003 -2008:

A Descriptive Analysis

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Abstract: *In 2006, West Virginia surpassed the national average birth rate for teens ages 15 to 19 years old. Through the use of the state wide Birth Score data, this article presents a retrospective examination of 8,094 teens who gave birth in West Virginia during the years of 2003-2008. Descriptive data on health issues such as prenatal care, infant birth weight and mortality, as well as demographic characteristics, such as racial background and Medicaid status are presented. Implications of these health issues are discussed along with special considerations for health providers who work within the Appalachian region.*

Keywords: *Appalachia, teen pregnancy, teen childbearing, descriptive analysis*

Introduction

Nationally, teen pregnancy and childbearing continues to be a challenging social problem that has both economic and health consequences. Taxpayers are paying approximately \$9.1 billion dollars a year to assist teen mothers and their children in meeting their economic and health needs (Martin et al., 2009). The financial burden is considerable primarily because teens who have children are less likely to finish high school, are more likely to live in poverty and to also receive long-term public assistance. Further, teenage mothers are also less likely to complete job trainings or specific skills trainings (McCave, 2008).

Health care costs are high due to the increased risks for teen mothers and their children. First, there are numerous health risks associated with a teenage pregnancy. Although there are potential risks associated with pregnancies regardless of the mother's age, teenagers experience these risks at higher rates. One reason for this is because adolescents are more likely to experience psychological distress at being pregnant, deny the pregnancy, and subsequently delay seeking prenatal care (Dawley, 2009; Guttmacher, 2010). Pregnant teens are also more likely to smoke, have anemia, have a sexually transmitted disease (STD) diagnosed along with their pregnancy, and have a preterm delivery, as compared to adult pregnant women (Chapman & Shepherd, 2008; Dawley, 2009).

Second, there are postpartum risks for teen mothers. There is an increased rate of post-partum depression, increased risks for lung and cervical cancer, a greater likelihood of a premature death, and a greater threat for substance abuse in the future (Chapman & Shepherd, 2008; Dawley, 2009; McCave, 2008).

Third, there are also heightened risks for infants born to adolescent mothers. These risks include an increased likelihood of a low birth weight, along with neonatal and post-neonatal death, as well as poor nutritional health (Chapman & Shepherd, 2008; Dawley, 2009; McCave, 2008). In later years, children who are born to teenage mothers are more likely to have cognitive and health disorders. These children are also at a greater risk for experiencing neglect and abuse throughout their life, particularly for children who are born prematurely or if they are repeatedly ill (McCave, 2008). Moreover, females born to teenage mothers are more likely to become pregnant in adolescence (Dawley, 2009).

Teenage Births as a Concern in West Virginia

In 2006, in West Virginia and across the nation, teen birth rates for those aged 15-19 increased for the first time since 1991 (Martin et al., 2009). In 1991, the national birth rate for teens ages 15-19 was 68.0 (per 1,000 births). This had dropped to 40.5 in 2005, however, in 2006 the teen birth rate increased to 41.9. In West Virginia, teen birth rates for this same age group surpassed the national average both during 2005 (43.4) and 2006 (44.9) (Martin et al., 2009). Within this age group, the national birth rate was higher for those ages 18 and 19 years old (73.0) compared with those ages 15 to 17 years old (22.0). This pattern was also reflected in West Virginia, with the older age group experiencing a birth rate of 80.4, compared to a birth rate of 21.4 for the younger group. Within West Virginia, the largest increase in births over time has been experienced by 18-19 year olds (Chapman & Shepherd, 2008). Compared with this age group, West Virginian teens ages 17 and younger have had fairly consistent birth rates between the years of 1997 and 2007.

In 2004, West Virginian taxpayers paid over \$38 million for the costs of teen childbearing (National Campaign to Prevent Teen Pregnancy, 2006). Of that \$38 million, \$23 million (61%) was spent on the costs of teen childbearing within West Virginia, while the remaining \$15 million (39%) was national teen childbearing costs absorbed by West Virginia taxpayers. This averages out to an annual cost of \$1,010 per teen birth in West Virginia for those births to 18 and 19 year olds. However, this is lower than the average annual costs for a child born to a teenager aged 17 and under, which is \$3,480 per teen birth (National Campaign to Prevent Teen Pregnancy, 2006).

According to the West Virginia Health Statistics Center (2008), during the years of 2002-2006, the average state adolescent birth rate for teens 10-19 years old was 21.7. There were 25 counties in West Virginia that had a higher teen birth rate than the state average. Of those 25 counties, 13 had the highest teenage birth rates (24.1 to 34.7 per 1,000 females). Following this, 12 counties had a teenage birth rate of 21.8 to 24.0. Those under the state average included 15 counties with a teenage birth rate of 17.8 to 21.7, with the remaining 15 counties in the lowest category ranging from a rate of 10.2 to 17.7 (West Virginia Health Statistics Center, 2008).

Given the importance of this social problem, both nationally and in the state of West Virginia, this researcher examined retrospective data on recorded teenage births occurring in West Virginia during the years 2003-2008. The research question of the study was: What are the demographic and health characteristics of teens ages 12 to 18 who gave birth in West Virginia during 2003-2008?

Methodology

Retrospective data was used from the West Virginia Birth Score program. The statewide Birth Score Program is unique to West Virginia; it was designed to screen newborns for risk of infant death within the first year and provides a mechanism for early referral to services (Mullett, Britton, John, & Hamilton, 2010). Since 1998, all West Virginia hospitals and facilities that provide birthing services are required by law to participate in the program. The statewide data that is collected is managed at West Virginia University School of Medicine. Answers on the Birth Score screen add up to a total score and those with a "high birth score" (scores over 99) are automatically referred to services, either through Medicaid funded services or private community services. In addition to the Birth Score screen, during hospitalization for the birth, mothers are asked additional questions when they obtain the Birth Certificate for their child.

The cases from the dataset that were selected included adolescent girls between the ages of 12 and 18 who gave birth in West Virginia between the years of 2003 and 2008. A descriptive analysis of these young women was conducted. Variables included demographic as well as health-related variables. An additional variable on infant mortality was also requested, which

came from a related statewide dataset. This study was approved by the West Virginia University Institutional Review Board.

Results

Demographic Variables

The total sample for this analysis included 8,094 adolescents. All resided in West Virginia during the time of their delivery. There was an even distribution of number of births during the years of 2003-2008, with the yearly range falling between 1305 births (during 2005) and 1396 births (during 2003). In looking at payment method, a majority of the adolescents used West Virginia Medicaid to pay for the birth (84.6%, $n = 6848$). In regards to race, 92.4% of the teens were Caucasian and 5.4% were African American. The remaining cases (2.2%) were teens who identified as Latina, Asian, Native American, or bi-racial.

The breakdown by age showed that nearly half of the adolescents (49.6%, $n = 4012$) were 18-years-old when they gave birth. Following this, 27.8% ($n = 2249$) were 17 years old, and 14.6% ($n = 1185$) were 16 years old when they gave birth to their child. A smaller percent were those ages 14 or 15 years old when they delivered (7.7%, $n = 624$). The remaining were 12 or 13 years old (.3%, $n = 24$). From the sample, 16.5% ($n = 1334$) were married, with a majority of those young women (65.5%, $n = 874$) aged 18-years-old. Of the remaining teens who were married, nearly a quarter (24.7%) were 17 years old, with 8.5% of those married 16 years of age. The remaining 1.3% of those married were 14 or 15 years old.

According to West Virginia Health Statistics Center (2008), the 55 counties in West Virginia were broken up into four categories during the years of 2002-2006 based on the range of adolescent birth rates within each county. These rates spanned a range from 10.2 to 34.7 (per 1,000 births). Nearly half of the adolescents who gave birth in West Virginia during 2003-2008 (45.4%, $n = 3678$) delivered in one of the 13 counties that were in the category of counties with the highest teen birth rates.

Health-Related Variables

Of the 8,094 adolescents, just under half (49%, $n = 3970$) of the infants were given a "high" birth score on their screen. The seven indicators that are assessed during this screen to provide the total score include: birth weight, maternal age, infant's sex, feeding intention, previous pregnancies, maternal education, and nicotine use during pregnancy. When examining the frequency distribution of infant birth weight, a total of 10.4% ($n = 843$) of the infants were considered to be low birth weight. Within this group, 6.7% ($n = 543$) of the infants had a low birth weight of 2001 to 2500 grams, 2.3% ($n = 183$) had a very low birth weight of 1501 to 2000 grams, and the remaining 1.4% ($n = 116$) had an extremely low birth weight of less than 1500 grams. Infant mortality occurred in .6% ($n = 52$) of the infants. From the sample, 12.4% ($n = 1002$) of adolescent mothers reported a prior living birth and 7.1% ($n = 571$) of the teens did report one or more prior abortions. In looking at prenatal care, a majority (73.3%, $n = 5934$) of the young women began prenatal care in the first trimester, while 20.4% ($n = 1650$) began prenatal care in the second trimester. Only 3.1% ($n = 254$) started in the third trimester. The remaining 3.2% of teens ($n = 256$) did not report their prenatal care information.

Discussion

Nationally, teen pregnancy rates have fallen over the last two decades due to increased access to birth control methods (McCave, 2008). Within West Virginia there was a 24% reduction in teen pregnancy between the years of 1991 and 2004 (National Campaign to Prevent Teen Pregnancy, 2006). Despite this trend, teen birth rates have increased for the first time since 1991, both across the country as well as in West Virginia. During the years of 2003 to 2008, there were

8,094 adolescents between the ages of 12 and 18 years who gave birth in West Virginia. Given the recent increase in teen birth rates, results from this descriptive analysis of adolescents who gave birth in West Virginia over the past several years provides directions for where additional research and resources should be focused.

Prenatal Care

While a majority of the adolescents did seek prenatal care in their first trimester (73.3%), one-fifth did not do so until the second trimester (20.4%). In comparison, in 2006, the CDC reported that 82.8% of women in West Virginia who sought prenatal care did so in their first trimester (2009). This higher percent may in part be due to the age of this study's population, as opposed to CDC data, which includes women of all ages in West Virginia. Still, the general medical consensus is that prenatal care during the first trimester provides an early opportunity for both health promotion efforts as well as risk assessments (Braveman, Marchie, Egerter, Pearl, & Neuhaus, 2000). This is particularly important for adolescents, who are at a higher risk of medical complications for themselves and their infants. Further, the federal government has stated in Healthy People 2010 that an objective is to have 90% of pregnant women access prenatal care in the first trimester. Barriers to accessing early prenatal care for low-income women have included: having an unplanned or unwanted pregnancy, not having a usual primary care source prior to the pregnancy, and lack of education (Braveman et al., 2000). In considering both this recommendation by the government as well as by the special health and economic concerns for pregnant teens, it is important that efforts are made to improve access to prenatal care in West Virginia for pregnant teens as well as educating teens about the importance of seeking prenatal care early.

Birth Weight and Infant Mortality

The issue of low birth weights for infants born to adolescent mothers is a concern across the nation. During 1990 to 2006, the incidence of low birth weights increased for females who had singleton births and who were under the age of 20 (Martin et al., 2009). In 2006, the national average of infants born with low birth weight to mothers between the ages of 15 and 19 was 10.0%. This is just below what was found in this West Virginia sample, in which 10.4% of the teens gave birth to an infant with a low birth weight.

In West Virginia, according to researchers examining the Birth Score data from 2001 to 2009, having a low birth weight as a newborn was "the strongest predictor of mortality in the first year of life" (Mullett, Britton, John, & Hamilton, 2010, p. 18). The infant mortality rate within this study's adolescent population was 6.42 (per 1,000 births). This is slightly lower than the West Virginia state average between 2004-2006 (7.07), and also similar to the national average during this same time period (6.68), both of which included women of all ages (Matthews & MacDorman, 2010). Health providers within West Virginia should examine how to better target pregnant teens and to explore interventions that are successful at reducing the incidence of a low birth weight infant, which would reduce the infant mortality rate for this age group.

Birth Score

Of the 8,094 adolescents, just under half (49%, $n = 3970$) were given a "high" birth score on their screen. This means that these adolescents had at least two or more of the seven indicators on the screen that indicated that the infant was at a greater risk for death in the first year in life. These indicators include birth weight, maternal age, infant's sex, feeding intention, previous pregnancies, maternal education, and nicotine use during pregnancy. Fortunately, because of the Birth Score Program, 98.5% ($n = 3,911$) of those adolescent mothers with a "high" birth score across West Virginia during the years of 2003-2008 received referrals for post-delivery services aimed at reducing poor health outcomes for both the mother and infant. In considering future

research efforts, a next step may include examining this referral process in greater depth, so as to determine the percent of adolescents who actually enroll and complete services after they are referred. Following this, research that links these services to positive health outcomes would be beneficial for establishing best practices for high risk teen mothers and their children.

Payment Method

In looking at payment method, a majority of the adolescents used West Virginia Medicaid to pay for the birth (84.6%, $n = 6848$). This is much higher than the West Virginia state average, which in 2010, reported that 50% of all births in West Virginia were covered by Medicaid (National Women's Law Center, 2010). This higher figure may be due to the Medicaid eligibility of these adolescents. In West Virginia, only the income of the adolescent is considered for perinatal Medicaid services, as opposed to considering the income of the adolescent's parent (Ranji, Salganicoff, Stewart, Cox, & Doamekpor, 2009). Additionally, any pregnant female in West Virginia who has an income at 150% of the federal poverty level (with assets considered) is eligible for Medicaid perinatal services, which also covers 60 days of post-partum services. Given that West Virginia has a lower percent of residents who have graduated from both high school and college compared to the national average, as well as a higher percent of its residents living below the poverty line, it is likely that these adolescents will need to rely on Medicaid services to cover their perinatal and post-partum costs (US Census Bureau, 2010).

Race

Similar to the rest of the country, racial minority groups in West Virginia, particularly African American and Latina teens, are overrepresented both in terms of teen pregnancy and also birth rates. African American teenagers in West Virginia are disproportionally represented in the number of teenage pregnancies with "103 pregnancies per 1000 young African American teens vs. 66 pregnancies per 1000 white teens" (Chapman & Shepherd, 2008, p.4).

In this study, 92.4% of the teens who gave birth were Caucasian and 5.4% were African American. The remaining cases (2.2%) were teens who identified as Latina, Asian, Native American, or bi-racial. In 2009 African Americans comprised 3.7% of the state population (US Census Bureau, 2010). This highlights that while a majority of births were to Caucasian women, African American teens were proportionally over-represented as teen mothers in the state. Assessing whether current interventions are culturally sensitive and relevant to West Virginian teens who are African American is a critical next step.

Teen Pregnancy and Motherhood in Appalachia

West Virginia is unique in that it is the only state in the country that is entirely in Appalachia (Reel, 2001). One of the reasons for West Virginia's high rate of teen pregnancy and births can be attributed to the rural characteristic of the state. According to Skatrud, Bennett, and Loda (1998), "teen pregnancy is an issue embedded within the social problems that affect rural societies as a whole—poverty, social and cultural isolation, lack of economic opportunity, and family disruption" (p. 24). They also assert that adolescents within rural communities have increased stigma, a lack of privacy, as well as a lack of diverse resources to choose from, in terms of public and private options. There is also the issue of lack of transportation, which can affect the ability of a teen to access services (Perkins, LaGreca, & Mullis, 2002).

Culturally, becoming pregnant and marrying early continues to be the norm within some Appalachian communities. In a small qualitative study completed in West Virginia, Reel (2001) found that being a mother was viewed as being central to being a woman and that childbirth in adolescence was at times viewed as an ordinary event. Having a child in later adolescence allowed for additional adult freedoms, which for some, was viewed positively. Yet at the same time, those who had their children in high school indicated that it resulted in adult responsibilities

they were not ready for, as well as missing out on key rites of passage, such as attending prom or graduation. The women in this study reported that having a child at 20 or 21 was an ideal age, as opposed to earlier in adolescence as well as later in late twenties or early thirties. Once pregnant, these women were encouraged to keep the child or place the child for adoption, usually with extended family; abortion was not typically an acceptable alternative (Reel, 2001).

Due to lack of formal resources as well as cultural norms and values, rural communities utilize natural helping networks, as well as other informal services such churches and extended family and kin (Stuart, 2004). Cultural norms and traditions are important as well, particularly when rural young women are more likely to get married earlier and not attend college, when compared with their urban peers (Poole & More, 2004). Marrying earlier can be both an intergenerational phenomena and also it can be an indicator of poor economic opportunities. Both of these characteristics may influence teen pregnancy, as teens may be more likely to get pregnant if they are expecting to marry soon or if it is a part of an intergenerational family pattern. Rural women are also less likely than their urban peers to attend college. According to Foster (as cited in Watkins, 2004, p. 65), "in rural areas, more than any other geographic setting, conformity is strongly urged, if not demanded. Deviation from the 'traditional way of living' is strongly discouraged." Further, since seeking higher education often means leaving their close-knit, small community of family and friends, it may be that young rural women who get pregnant are not forced to negotiate this potential conflict.

Conclusion

Adolescent child bearing continues to persist as a social problem across the nation. In West Virginia, there were 8,094 adolescent females who gave birth during the years of 2003-2008. West Virginia is a unique state in that it is the only state entirely in Appalachia, which creates distinctive issues around the causes of teen pregnancy and the experience of teens who are mothers. It also is the only state with the Birth Score Program, which allows for the statewide data collection on all pregnant women in the state from year to year. Several areas for future research and intervention emerged, including improving access and education for early prenatal care, culturally sensitive interventions for African American teens in the state, as well as reducing low birth weight infants and infant mortality. With a better understanding of the demographic and health characteristics of West Virginia adolescent mothers and their infants, health providers will be better equipped to provide the necessary services for teen mothers, their infants, and the communities in which they reside.

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