

Racial disparity in years of potential life lost to induced abortions

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ABSTRACT

The magnitude of the overall prevalence and racial disparity in induced abortion suggests that it is a major influence on the demographic and socioeconomic composition of the population of the United States (US). However, the years of potential lives averted by induced abortion have not been systematically studied. We applied race-specific intra-uterine death estimates to the induced abortions occurring to non-Hispanic (NH) white and non-Hispanic (NH) black women in the US state of North Carolina in 2008. The resultant estimate of births averted by induced abortion was used to project years of potential life lost. All-cause detailed mortality data were used to compare induced abortion with other contributing causes of years of potential life lost before age 75 (YPLL 75). For NH whites, induced abortions in 2008 contributed 59% of total YPLL 75, and 1.5 times the total YPLL 75 from all other causes combined. For NH blacks, induced abortions in 2008 contributed 76% of total YPLL 75 and 3.2 times the total YPLL 75 from all other causes combined. Induced abortion is the overwhelmingly predominant contributing cause of preventable potential lives lost in the North Carolina population, and NH blacks are disproportionately affected.

KEYWORDS

Abortion; Years of Potential Life Lost

1. INTRODUCTION

Large racial differences have been consistently ob-

served for a number of years in pregnancy rates, average lifetime pregnancies and induced abortion rates [1-3]. Based on the most recent multi-year national summary of pregnancy outcomes, covering the years 1990-2008, in 2008 in the US, 64.6% of all pregnancies ended in a live birth, 17% in an intrauterine death (includes miscarriages occurring at less than 20 weeks and stillbirths >20 weeks gestation), and 18.4% in an induced abortion [3]. The overall (all maternal ages) pregnancy rate for NH black women was 144.3 per 1000, 65% higher than the rate for NH white women (87.5 per 1000 women). According to the same report, NH black women experience an average of more pregnancies in a lifetime (4.3) than NH white women (2.7). In 2008, 69% of NH white but only 49% of NH black pregnancies resulted in a live birth [3]. For NH white women 12.4% of pregnancies were terminated by induced abortions, whereas the percentage for NH black women was nearly three times higher at 35.6% [3]. There were 5.5 NH white live births for every NH white induced abortion, but only 1.4 NH black live births for every NH black induced abortion. Therefore, in spite of a higher pregnancy rate than NH whites, pregnancies experienced by NH black women are much less likely to result in a live birth, largely as the result of their dramatically higher induced abortion rate. The abortion experience of Hispanic women closely corresponds to that of NH whites and was therefore not included in this analysis [3].

Both the magnitude of the prevalence of induced abortion and the huge NH black/NH white racial disparity suggest that it is a major influence on the demographic, socioeconomic and cultural composition of the United States population. An understudied aspect of particular interest in this regard is the estimate of the years of potential lives averted by induced abortions. The statistical construct of Years of Potential Life Lost (YPLL) is the

most widely applied method of characterizing the burden of premature death within defined populations. It has been included by the Centers for Disease Control and Prevention (CDC) in its standard reports since 1982 [4] and extensively applied in measuring and comparing the health status of cities [5], counties [6] and states [7] within the US, as well as in comparisons of nations conducted by international organizations [8]. The YPLL method, however, has not previously been used to characterize the burden of potential lives lost to induced abortion. It is of interest to note that previous YPLL analyses have included infant mortality and perinatal conditions as causes of death, even though the latter includes conditions arising between 28 weeks of gestation and 7 days of life [9]. In those applications of YPLL, the qualifying condition for inclusion as a potential life lost, therefore, has been that there must be a live birth and not merely some minimum defined gestational period. This same reporting convention regarding the nature of potential life lost can be seen in the inconsistency surrounding the counting of stillbirth (intrauterine death occurring in the third trimester) as a death. One observer has questioned why the 35 week old neonate who dies of respiratory failure 24 hours after delivery and the developmentally indistinguishable 35 week old stillborn baby are treated differentially in mortality statistics; *i.e.*, one is considered as a death, and therefore as a potential life lost, while the other is not [10]. The likely explanation, of course, is that attributing existing (or potential) life to an intrauterine loss due to natural means (*i.e.* spontaneous abortion) by counting it as a death (or potential life) could suggest equivalent treatment of elective abortions. However, requiring that only a live birth can represent years of potential life lost is a logical tautology for induced abortion, the specific intent of which is to prevent a live birth.

The rationale for the use of a confirmed pregnancy rather than a live birth as a measure of potential life lost by means of induced abortions is logically persuasive and empirically validated. Potential lives lost to induced abortion can be accurately estimated from confirmed pregnancies because: 1) in the absence of induced abortion, physiological factors are the sole determinants of whether conception actually results in a live birth [11], 2) induced abortion averts both live births and intra-uterine deaths so not all aborted fetuses would result in a live birth in the absence of induced abortion; 3) Intra-uterine deaths at all gestational stages following a confirmed pregnancy are reasonably estimated on the basis of empirical studies of pregnant populations as well as extensive surveys of women who have experienced miscarriages and stillbirths, thus enabling an accurate estimate of potential lives lost to induced abortions [12]. Further, the reluctance to quantify the measurable impact of in-

duced abortion impedes legitimate discourse regarding its societal consequences. Therefore the objective of this research was to apply the concept of YPLL to induced abortion within a geographically defined population of NH blacks and NH whites; and, to compare the magnitude of its impact against other causes of potential life lost.

2. METHOD

2.1. Data

Event-level and aggregated data used in this analysis were all de-identified and publically available from the following sources: The North Carolina State Center for Health Statistics (NC-SCHS) provided pregnancy counts for North Carolina residents by year (2008), county, mother's race and Hispanic origin, age, education and marital status. Reported pregnancies include live births, induced abortions and fetal deaths of 20 or more weeks of gestation. Detailed event-level mortality statistics provided death counts for North Carolina residents by year (2008), cause of death, county, race, gender, age and Hispanic origin. The Centers for Disease Control and Prevention (CDC) provided estimated national pregnancy rates and outcomes for the United States, 1990-2008, for pregnancies, live births, estimated intra-uterine deaths and induced abortions by race and ethnicity. Also provided were total YPLL and death counts in North Carolina (2008) for all causes of death by race and ethnicity. The United States Census Bureau, U.S. Department of Commerce, provided annual mid-year (2008) estimates of the resident population of North Carolina by sex, race and Hispanic origin.

2.2. Fetal Loss Estimation

The provision of induced abortion services is predicated on the assumption that the pregnancy has been clinically confirmed. In order to accurately reflect intra-uterine deaths in the absence of induced abortion, our definition and estimate of intra-uterine deaths excluded those that occur prior to implantation and included all of those that might occur at all gestational ages; *i.e.*, miscarriages and stillbirths. Since fetal deaths that occur at less than 20 weeks, *i.e.* miscarriages are not reported in North Carolina it was necessary that we apply the CDC National Center for Health Statistics (NCHS) race-specific intra-uterine death estimates to induced abortions in North Carolina in order to avoid overestimating live births in the absence of induced abortion. Of all fetal loss estimate methodologies during recognized pregnancies, the CDC-NCHS method returns the highest fetal loss rates and therefore provides the most conservative estimate of potential lives lost to induced abortion [13-16]. The multiple sources of data, consistency of reporting

over an extended period of time, and careful attention to statistical significance of the estimates assures the most valid estimate of pregnancy rates and outcomes possible. The components of the CDC method of estimation, briefly summarized, are as follows:

1) Live births are based on complete counts reported on birth certificates provided by every state to the NCHS through the Vital Statistics Cooperative Program (VSCP) [17,18];

2) Estimates of induced abortions are from abortion surveillance information collected by the CDC's National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP) from most states (including North Carolina); these estimates are adjusted to national totals by the Guttmacher Institute from surveys of all known abortion providers [19,20];

3) Intra-uterine death estimates are derived from the pregnancy history data collected by the National Survey of Family Growth (NSFG), NCHS; estimates are based on the proportion of pregnancies which ended in fetal loss during the three most recent NSFG survey cycles for adults (age 20 - 44), and the four most recent NSFG survey cycles for teens under 20. Unlike vital statistics data which are generally limited to fetal losses at 20 weeks or more gestation, the NSFG data include losses at all gestational points.

2.3. Analysis

Results were determined by:

1) Establishing national (2008) estimates of fetal loss rates [fetal losses/(live births + fetal losses)] for NH whites and NH blacks; 2) Applying those fetal loss rates to the (2008) North Carolina NH white and NH black number of induced abortions; 3) Subtracting those estimated fetal losses from the total induced abortions to derive the estimated number of live births averted by induced abortions; 4) Multiplying those estimated averted births by 75 years to determine the total YPLL due to induced abortions before age 75 (YPLL 75); 5) Determining YPLL 75 for every cause using both North Carolina detailed mortality data and the CDC (WIS-QARS YPLL 75) categories for reporting; and, 6) Comparing the contributions to the total YPLL 75 from all

other major causes.

3. RESULTS

In 2008 in North Carolina, 12.9% of NH white and 27% of NH black pregnancies were terminated by induced abortions (**Table 1**). Fetal loss rates totaled for all gestational periods estimated from national data were 21% for NH whites and 23.7% for NH blacks. Applied to the North Carolina induced abortions in 2008, there were 2267 estimated fetal losses and 8530 live births averted for NH whites; and 2811 estimated fetal losses and 9050 live births averted for NH blacks (**Table 2**).

For NH whites, induced abortions in 2008 contributed 59% of total YPLL 75, and 1.5 times the total YPLL 75 from all other causes combined. For NH blacks, induced abortions in 2008 contributed 76% of total YPLL 75 and 3.2 times the total YPLL 75 from all other causes combined. Induced abortions contributed 3.6 times the YPLL 75 accumulated from the three major chronic diseases (malignant neoplasm, heart disease, cerebrovascular) combined for NH whites; and 8.7 times for NH blacks (**Table 3**). Despite the magnitude of the contribution of induced abortions to YPLL 75 for both NH whites and NH blacks, and the very large racial disparity in the rate per 100,000 population, there were even wider differences in the rates for other causes. YPLL 75 NH black rates per 100,000 were 10.9 times higher than NH whites for HIV, 5.6 times higher for homicide and 4.4 times higher for both hypertension and the perinatal conditions. NH white YPLL 75 rates were actually higher than NH black rates for suicide, unintentional injuries, chronic lower respiratory disease and liver disease.

4. DISCUSSION

This study has demonstrated that induced abortion is the overwhelmingly predominant contributing cause of years of preventable potential lives lost in the North Carolina population, and NH blacks are disproportionately affected. A particular strength of this study is that the validity and accuracy of these objective estimates are free of subjective points of view, and attendant value judgments, derived from any ideological, religious, poli-

Table 1. Pregnancy outcomes by race/ethnicity, North Carolina, 2008.

	NH White	NH Black	NH Other	Hispanic	Unknown	Total
Pregnancies	83,228	43,339	7106	24,390	807	158,870
Live births	72,014	31,108	6017	21,619	-	130,758
Fetal deaths (>20 weeks) [†]	417	370	32	59	-	878
Induced abortions—no. (%) [*]	10,797 (12.9)	11,861 (27.4)	1507 (14.8)	2712 (11.1)	807	27,234

^{*}Induced abortions as a percent of total pregnancies; [†]Fetal deaths <20 weeks not reported.

tical or cultural perspective. These analyses and results are completely independent of answers to questions such as whether a fetus has the same moral status as a newborn [21]; whether some induced abortions are more justified than others, as in the case of rape or incest; whether the “intentionality” of the woman was to abort or continue the pregnancy to a live birth [22]; or, whether

abortions should be prohibited beyond some gestational period such as 28 weeks.

Except for the statistical differences in the likelihood of surviving to a live birth based on gestational age, included in the method of fetal loss estimation, no attempt is made to impute differential “value” or “quality” to these years of life lost in any way. The magnitude and racial disparity in potential lives lost to induced abortion described in this research should provoke discussion and inform policy. However, the identical objective information will likely be used to make contrasting arguments related to the motivation for and outcomes of induced abortion; for example, that induced abortion is both a major method of government cost savings and the principal instrument of racial genocide [23,24].

The YPLL method has certain limitations. The cutoff age, 75 in our case, is somewhat arbitrary and does not acknowledge lives lived beyond a certain point nor include them in the calculation of years lost. YPLL also tends to undervalue lives lost from chronic diseases since

Table 2. YPLL 75 from induced abortions, North Carolina, 2008.

	NH White	NH Black
CDC estimated national fetal loss rate ^a	21%	23.7%
Estimated fetal losses	2267	2811
Live births averted	8530	9050
Total YPLL	639,750	678,750
YPLL rate/100,000 [†]	10,320	34,708

^aFetal losses/(Fetal losses + live births); [†]NH White 2008 population-6,198,806; NH Black 2008 population-1,955,575.

Table 3. Years of potential life lost before age 75 (YPLL 75), all causes, 2008, NH Whites and NH Blacks, North Carolina.

Cause	NH Black ^a		NH White ^a		Black/White Rate Ratio
	YPLL	Rate/100,000	YPLL	Rate/100,000	
All	889,990	45,510	1,076,993	17,374	2.6
Induced abortion	678,750	34,708	639,750	10,320	3.4
Malignant neoplasms	36,575	1870	100,544	1622	1.1
Unintentional injury	21,031	1075	79,416	1281	0.8
Heart disease	32,978	1686	68,094	1098	1.5
Suicide	4332	221	27,105	437	0.5
Chronic lower respiratory disease	3864	197	15,608	252	0.8
Perinatal period	19,602	1002	14,019	226	4.4
Liver disease	3038	155	11,127	179	0.8
Cerebrovascular	8241	421	10,475	169	2.5
Congenital anomalies	5671	290	10,250	165	1.7
Diabetes Mellitus	7040	359	9357	151	2.4
Homicide	14,373	735	8137	131	5.6
Influenza and pneumonia	2185	112	5127	83	1.3
Septicemia	3551	182	5115	82	2.2
Nephritis	3926	201	4855	78	2.5
Viral hepatitis	1140	58	2742	44	1.3
HIV	7042	360	2061	33	10.9
Benign neoplasms	730	37	1782	29	1.3
Hypertension	2177	111	1532	25	4.4
Aortic aneurism	627	32	1402	23	1.4
All others	33,117	1693	58,495	943	1.8

^aIncludes both sexes.

they typically occur at older ages. Since NH black life expectancy was 3.8 years lower than NH whites in 2010, application of a race-specific life expectancy value could be used for each race so as not to inflate NH black YPLL however that would be an atypical application with only a marginal effect on the results [25]. Finally, results derived from the North Carolina NH white and NH black induced abortion data in 2008 should not be generalized to any other specifically defined population-although the data does suggest that the North Carolina experience conforms closely to national (US) trends [3].

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