**Practice Assignment 9:** Prenatal Care and Low Birth Weight: Controlling for Confounding Factors in African American Mothers

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**RE: Logistic Regression**

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**Table 1: Descriptive/Frequencies Statistics (n=787)**

|  |  |  |
| --- | --- | --- |
| **Variables** | **Mean or Count** | **SD or %** |
| **Received adequate prenatal care** | 615 | 78.1 |
| **Has health insurance** | 704 | 89.5 |
| **Perceived Racism Scale score** | 2.5127 | 0.39712 |
| **Medical Mistrust Index score** | 2.4691 | 0.41270 |
| **Birth weight in grams** | 3250.0000 | 500.00015 |
| **Low birth weight dummy variables** |  |  |
| **Birth weight less than 2500 grams** | 54 | 6.9 |
| **Birth weight greater than 2500 grams** | 733 | 93.1 |
| **Level of education** |  |  |
| **Less than high school** | 17 | 2.2 |
| **High school graduate** | 145 | 18.4 |
| **Some college or technical school** | 385 | 48.9 |
| **College graduate** | 155 | 19.7 |
| **Some education beyond college** | 85 | 10.8 |

Based on Table 1, 6.9% of infants in the sample had a low birth weight of less than 2,500 grams, while 93.1% had a birth weight above this threshold. Due to the low proportion of low-birth-weight cases, most births in this sample were within a healthy weight range. However, further analysis can demonstrate whether factors such as education, prenatal care, medical mistrust, or perceived racism impact birth weight.

**Table 2: Logistic Regression Results**

|  |  |  |  |
| --- | --- | --- | --- |
| **Variable** | **Model 1: Low birth weight dummy variable vs. Prenatal care** | **Model 2: Low birth weight dummy variable vs. Prenatal care and Medical Mistrust Index Score** | **Model 3: Low birth weight dummy variable vs. Prenatal Care, Medical Mistrust, Insurance, Education, and Perceived Racism** |
| **Received adequate prenatal care** | **B=-0.810, p=0.006, Exp(B)=0.445** | **B=-.677, P=.025, Exp(B)=.508** | **B=-.629, p=.044, Exp(B)=.533** |
| **Medical Mistrust Index Score** |  | **B=1.536, p<.001, Exp(B)= 4.648** | **B=1.431, p<.001, Exp(B)=4.182** |
| **Has health insurance** |  |  | **B=-.295,p=.538,Exp(B)=.744** |
| **Education category 1 (reference group)** |  |  |  |
| **Education category 2** |  |  | **B=-1.978,p=.011,Exp(B)=.138** |
| **Education category 3** |  |  | **B=-2.042,p=.004,Exp(B)=.130** |
| **Education category 4** |  |  | **B=-1.923, p=.011, Exp(B)=.146** |
| **Education category 5** |  |  | **B=-2.678, p=.002, Exp(B)=.069** |
| **Perceived Racism Scale score** |  |  | **B=.916, p=.029, Exp(B)=2.499** |
| **Constant** | **B= -2.028, p<.001, Exp(B)=.132** | **B=-6.095, p<.001, Exp(B)=.002** | **B=-5.987, p<.001, Exp(B)=.003** |

In Table 2, a logistic regression analysis was conducted because the dependent variable is a binary categorical variable, estimating the probability of low weight being influenced by external factors. In Model 1, mothers who received adequate prenatal care had 55.5% lower odds of having a low-birth-weight infant. In Model 2, after adjusting for medical mistrust, the odds of low birth weight decreased to 49.2% for those who received prenatal care. In Model 3, the odds of low birth weight were 46.7% lower for those who received prenatal care (OR = 0.533, p = .044) and 93.1% lower for those with the highest education level (OR = 0.069, p = .002) compared to the reference group. Conversely, higher medical mistrust (OR = 4.182, p < .001) and perceived racism (OR = 2.499, p = .029) significantly increased the odds of low birth weight.