**Practice Assignment 10**

**To: Dr.Bingenheimer**

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**RE: Regression Analysis**

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**Table 1: Regression Analysis: Effect of Prenatal Care, Health Insurance, and Perceived Racism on Birth Weight**

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| **Variable** | **Model 1: Birth weight \* Prenatal care** | | **Model 2: Birth weight \* Prenatal Care, Insurance, & Interaction** | | **Model 3: Birth weight \* Prenatal Care, Racism, & Interaction** | |
| **Constant** | **B= 3127.692** | **p=<.001** | **B=3025.318** | **p=<.001** | **B= 3151.583** | **p= <.001** |
| **Adequate prenatal care** | **B= 156.514** | **p=<.001** | **B=310.165** | **p= .006** | **B= 126.289** | **p= 0.003** |
| **Health Insurance** |  |  | **B=125.775** | **p= .196** |  |  |
| **Prenatal care x Insured** |  |  | **B=-181.688** | **p=.134** |  |  |
| **Perceived racism** |  |  |  |  | **B=-339.725** | **p= <.001** |
| **Prenatal care x Perceived racism** |  |  |  |  | **B=18.025** | **p= 0.866** |

**Notes:**

* **B (coefficient):** Represents the estimated effect of each variable on birth weight
* **p (p-value):** Indicates statistical significance. A value **< 0.05** suggests a significant relationship

In Model 1, adequate prenatal care is significantly associated with birth weight. Receiving adequate prenatal care increases birth weight by 156.514 grams. However, Model 1 does not specify which particular groups benefit more or less from prenatal care.

In Model 2, we investigate whether health insurance impacts the effect of prenatal care on birth weight. Prenatal care remains significant; however, health insurance status alone is not significant, indicating that being insured does not influence birth weight. The interaction term is also insignificant, suggesting that insurance does not meaningfully change the effect of prenatal care on birth weight. This implies that other social determinants play a role in affecting birth weight.

In Model 3, we analyze how perceived racism impacts the effect of prenatal care on birth weight. Perceived racism is significant, yet the interaction term between perceived racism and prenatal care indicates that birth weight does not significantly differ based on perceived racism.

Overall, the interaction between prenatal care and insurance was insignificant, suggesting that the positive effect of prenatal care on birth weight does not vary by insurance status. Lastly, the interaction between prenatal care and perceived racism was not significant, indicating that the benefits of prenatal care are positive across all models.