**Report on Oyigbo hospital**

**What is the total number of deliveries recorded in the time period?**

According to the data, there were 161 deliveries in total, there were 123 total deliveries from the hospital antenatal patients, and it is assumed based on the data, that the remaining 38 patients just came for delivery and did not register for antenatal prior to their delivery. The time frame is 2nd of January 2024 to 8th of January 2025.

**What is the total number of antenatal patients recorded in the time period?**

According to the data, there were 498 total antenatal patients recorded, out of this 498, 123 delivered in the same hospital, and it is assumed that the remaining 375 patients went elsewhere to deliver the baby.

**What proportion of women registered for antenatal ultimately delivered at the facility?**

According to the data, 123 out of the 498 patients that registered for antenatal delivered at the facility which is about 24.7%.

**Is there any difference in birth weight between the weight of booked and unbooked patient delivery?**

Based on the result of the t-test:

* **T-statistic**: -3.53
* **P-value**: 0.00054

Since the **p-value (0.00054)** is much smaller than the commonly used significance level of **0.05**, we can **reject the null hypothesis**. This means there is **a statistically significant difference** in the birth weight between booked and unbooked patient deliveries.

Thus, **the data suggests that booking status has an impact on birth weight**, with booked patients likely having different birth weights compared to unbooked patients.

**Delivery Outcome Analysis**

A **Chi-square test of independence** was used to check if there is a relationship between **when a mother books during pregnancy** (1st, 2nd, or 3rd trimester), **her weight at booking** (normal or overweight), and the **delivery outcome** (live birth or still birth).

|  |  |  |
| --- | --- | --- |
| **Trimester & Weight Category** | **Live Birth** | **Still Birth** |
| First Trimester - Normal Weight | 18 | 0 |
| First Trimester - Over Weight | 3 | 0 | |
| Second Trimester - Normal Weight | 67 | 6 | |
| Second Trimester - Over Weight | 7 | 1 | |
| Third Trimester - Normal Weight | 15 | 3 | |
| Third Trimester - Over Weight | 3 | 0 | |

### **Chi-square Test Results:**

* **Chi-square Statistic (X²):** 4.09
* **Degrees of Freedom (df):** 5
* **P-value:** 0.537

### **How to Understand These Results:**

* The **Chi-square statistic** tells us how much difference exists between the observed values (what we got) and the expected values (what we would expect if there were no relationship).
* The **degrees of freedom** depend on the number of rows and columns in the table.
* The **p-value** helps us decide if the difference is meaningful or just due to chance.

**Since the p-value (0.537) is greater than 0.05**, it means the differences in the table are likely **due to chance**.  
There is **no statistically significant association** between when a mother booked and her weight **and** the outcome of the delivery.

**Conclusion:**

There is **no strong evidence** that the **timing of booking** and **maternal weight** are related to whether the baby is born alive or not. These two factors **do not appear to significantly affect** delivery outcomes in this dataset.