Slide 1: Title Slide

\*\*Title:\*\*

"Does Body Weight Predict Blood Pressure While Controlling for Hormonal Contraceptive Use?"

\*\*Subtitle:\*\*

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\*\*Notes:\*\*

- Hello everyone, This is Saiful Hasan Public Health Data Science MS student in Department of Epidemiology and Biostatistics.

- Today, I will be discussing whether body weight predicts blood pressure while controlling for hormonal contraceptive use. This study was originally designed to explores hormonal IUD acceptability in Bangladesh to widen the variety of contraceptives for women in Bangladesh who are suffering from excessive menstrual bleeding. Besides its original study goal, this study also shedding light on potential predictors of blood pressure among the women who uses contraceptives for birth controlling. Welcome to my presentation.

Slide 2:

\*\*Notes:\*\*

- Based on some evidences, It was commonly believe that both body weight and hormonal contraceptive use likely to increase high blood pressure. I In this current scope, I wanted to examine my hypothesis whether body weight predict blood pressure while controlling for contraceptive use. In this scope my Null Hypothesis (H\_0): was Body weight does not significantly influence mean blood pressure while controlling for contraceptive use.

And Alternative Hypothesis (H\_1): Body weight significantly influences mean blood pressure while controlling for contraceptive use.

Slide 3:

\*\*Notes:\*\*

- For this study, we analyzed data from 170 individuals women who used contraceptives for birth control in Bangladesh and intended to use LNG IUS hormonal IUD during 2021 and 2022.

- The primary goal was to assess whether body weight and contraceptive type influence blood pressure. My Explanatory Variable 1: Body Weight (kg). and Hormonal Contraceptive User (Yes/No).

- I conducted statistical tests were used to explore these relationships: a correlation test, a \( t \)-test, F test, and a multiple regression analysis.

### Slide 4:

\*\*Notes:\*\*

- The descriptive statistics showed an average body weight of 170 individual women were approximately 58.5 kg with 12 standard deviation and their mean blood pressure was approximately 88.77 millimeters of mercury with 6 standard deviation. Among the women, 60% or 102 were hormonal contraceptive users, used progesterone contain Oral pill, injectables, and subterminal Implanon. Rest of the 40% used non hormonal contraceptives.

- As I have seen correlation between body weight and mean blood pressure was not significant, value of r is positive but very low with non-significant p value, greater than point 0 five. Among the contraceptive user groups, mean blood pressures are similar although difference exists in standard deviation. In the equality of variances test, we fail to reject the equal variance assumption as P value is slightly smaller than point 0 five.

- Importantly, the \( t \)-test comparing blood pressure across contraceptive user types found no significant differences. T value was point two one seven and a p value greater than point 8 which larger than alpha point 0 five.

\*\*Notes:\*\* Slide 5

- The regression analysis confirmed that neither body weight nor contraceptive type significantly predicts blood pressure. Body weight predicts only a very small portion of the variance in mean blood pressure. Similarly hormonal contraceptive uses also.

- The model explained only 0.23% of the variance in blood pressure, as indicated by the \( R^2 \) value.

- Based on these findings, we fail to reject the null hypothesis.

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### Slide 6: Conclusion

- As we have seen that no evidence exists that body weight predicts mean blood pressure while controlling for contraceptive use. We cannot conclude that increases in body weight led to changes in mean blood pressure.

To summarize, this study did not find significant relationships between body weight, contraceptive tuser ype, and blood pressure.

- While these results do not support our alternative hypothesis, they highlight the complexity of factors influencing blood pressure.