**Training Assignment: Quarto Report in RStudio**

Your task is to write a simulated report entirely using Quarto and RStudio, based on the dataset provided. The report should include the following sections: **Introduction, Objectives, Methods, Findings, and Conclusion.**

**Report Structure and Instructions:**

1. **Introduction**

Provide a summary (one paragraph) about glucose screening in the general population, highlighting the importance of early detection of diabetes. Include a short discussion on the use of HbA1c as a tool for glucose screening.

1. **Objective**

State the main objective of the analysis: To determine the prevalence of diabetes in the five districts' general population.

1. **Methods**

Describe the methodology used in the analysis, covering:

* 1. **Target Population**: Adults aged 20-59 years in five districts of Selangor.
  2. **Sampling Frame**: Based on the 2023 population estimates for these districts.
  3. **Respondents**: Selected using simple random sampling from the five districts.
  4. **Analysis**: Apply complex sample analysis using a weighting factor to account for selection probabilities, non-response, and post-stratification, adjusting for the district's age group, gender, and ethnicity distribution.
  5. **Working Definition**: (Refer to next page for working definition)

1. **Findings**

Present the key findings of the analysis, including:

* 1. **Respondent Distribution**: Provide descriptive statistics for the respondent distribution and the corresponding estimated population.
  2. **HbA1c Analysis**: Report the mean and standard deviation (SD) of HbA1c levels among respondents, as well as for the estimated population.
  3. **Diabetes Control**: Calculate the proportion of uncontrolled diabetes among respondents and estimate the prevalence of uncontrolled diabetes. Present this by: Age group, Gender, Ethnicity, BMI group

|  |  |  |  |
| --- | --- | --- | --- |
| Characteristic | | n (%) / Mean (SD) | |
| Unweighted | Estimated Population |
| District | |  |  |
|  | Gombak |  |  |
|  | Kuala Langat |  |  |
|  | … |  |  |
| Gender | |  |  |
| Age Group | |  |  |
| Ethnicity | |  |  |
| BMI (Category) | |  |  |
| Physical Active (Hour/day) | |  |  |
| HbA1c | |  |  |
| Diabetes Status | |  |  |

1. **Conclusion**

Write a concise summary (one paragraph) of the findings, focusing on the key outcomes from your analysis of glycemic control.

**Working Definition**

Age Group: 20-29, 30-39, 40-49, 50-59

Obesity Classification (Asian)

* Underweight: BMI < 18.5 kg/m2
* Normal: BMI 18.5 – 22.9 kg/m2
* Overweight: BMI 23.0 – 24.9 kg/m2
* Obesity: BMI ≥ 25.0 kg/m2

Glycaemic Control

* Normal & Prediabetes: < 6.5%
* Diabetes: ≥ 6.5%

**Quarto Specific Instructions & Tips**