# Domestic Violence Against Women - Case Study

**Project Description**

This project aims to analyse the incidence of domestic violence against women in a specific rural area of a developing country. The dataset includes socio-economic factors to help understand the correlation between these factors and domestic violence. The goal is to provide insights that can inform effective interventions and policies.

**Dataset**

Dataset by FAHMIDA CHOWDHURY - Kaggle

The dataset includes the following columns:

- **SL. No**: Serial number of the record.
- **Age**: Age of the respondent.
- **Education**: Educational attainment of the respondent (tertiary for higher secondary).
- **Employment**: Employment status of the respondent.
- **Income**: Income level of the respondent (0 indicating no income).
- **Marital status**: Marital status of the respondent (married or unmarried).
- **Violence**: Indicates whether the respondent has experienced domestic violence (yes or no).

**Context**

Domestic violence against women is a significant issue in many developing countries. Understanding the factors that contribute to this violence can help in creating effective interventions and policies. This dataset aims to provide a basis for analysis and research in this critical area.

**Objectives**

The dataset can be used to:

1. Analyze the correlation between education level and domestic violence.
2. Study the impact of marital status on domestic violence.
3. Explore the age distribution of domestic violence victims.
4. Identify potential socio-economic factors contributing to domestic violence.

**Analysis Performed**

**Fraction Analysis of Domestic Violence Incidence by Age Group**

- **Total Individuals and Domestic Violence Count:**
  - Total individuals across all age groups: **347**
  - Total individuals who experienced domestic violence: **103**
- **Overall Fraction**:
  - Approximately **1 in 3 individuals** (103 out of 347) have experienced domestic violence.
- **Age-Specific Analysis:**
  - **Age 18-25**: Approximately **1 in 6 individuals** (21 out of 128) in this age group have experienced domestic violence.
  - **Age 26-35**: Approximately **1 in 6 individuals** (18 out of 103) in this age group have experienced domestic violence.
  - **Age 36-45**: Approximately **1 in 5 individuals** (15 out of 77) in this age group have experienced domestic violence.
  - **Age 46 and above**: Approximately **1 in 6 individuals** (7 out of 39) in this age group have experienced domestic violence.

**Key Findings**

1. **Income and Domestic Violence**: Individuals who experienced domestic violence consistently showed lower income levels compared to those who did not, irrespective of marital or employment status.
2. **Marital Status Impact**: Unmarried victims showed a pronounced skew towards lower income brackets.
3. **Employment Status Influence**: Unemployed and semi-employed victims had notably lower incomes.
4. **Age and Domestic Violence**: Incidence peaked in the 20s and 30s, declining with age.

**Chart Analysis**

- Violin plots and swarm plots were used to analyze the distribution of domestic violence incidence by age.
- Strip plots were used to analyze income distribution by marital status and employment status in relation to domestic violence.

**How to Use This Project**

1. **Data Preparation**: Ensure the dataset is properly formatted and cleaned.
2. **Analysis**: Use the provided Jupyter notebook to run the analysis and visualize the data.
3. **Insights**: Interpret the charts and findings to understand the socio-economic factors influencing domestic violence.
4. **Reporting**: Use the insights to create reports and presentations that can inform policy makers and intervention programs.

**Tools and Libraries Used**

- **Python**: For data analysis and visualization.
- **Pandas**: For data manipulation.
- **Matplotlib and Seaborn**: For data visualization.

**Conclusion**

This project provides a comprehensive analysis of domestic violence in a rural area, highlighting key socio-economic factors. The findings can help inform strategies to address and mitigate domestic violence in similar contexts.

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