Maternal Mortality Ratio (MMR) Calculation & Visualization

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Given Data

# Define given values  
P <- 350000 # Total Population  
B <- 75000 # Total Live Births  
D\_p <- 245 # Pregnancy-Related Deaths

# Compute MMRo (Maternal Mortality Ratio)

## Maternal Mortality Ratio (MMRo)

The formula for the Maternal Mortality Ratio (MMRo) is:

Where:  
- = Number of pregnancy-related deaths  
- = Total live births You can also embed plots, for example:

MMRo <- (D\_p / B) \* 1000  
print(MMRo)

## [1] 3.266667

# Compute Maternal Mortality (MM)

## Maternal Mortality (MM)

The formula for Maternal Mortality is:

Where:  
- = Total population  
- = Maternal Mortality Ratio

Maternal\_Mortality <- (MMRo \* P) / 1000  
print(Maternal\_Mortality)

## [1] 1143.333

# Create a tibble table

mmr\_data <- tibble(  
 Metric = c("Total Population", "Total Live Births", "Pregnancy-Related Deaths", "Maternal Mortality Ratio (MMRo)", "Maternal Mortality"),  
 Value = c(P, B, D\_p, round(MMRo, 2), round(Maternal\_Mortality))  
)  
print(mmr\_data)

## # A tibble: 5 × 2  
## Metric Value  
## <chr> <dbl>  
## 1 Total Population 350000   
## 2 Total Live Births 75000   
## 3 Pregnancy-Related Deaths 245   
## 4 Maternal Mortality Ratio (MMRo) 3.27  
## 5 Maternal Mortality 1143

# ✅ Ensure correct usage of dplyr filter()

mmr\_data\_filtered <- mmr\_data %>%   
 filter(Metric == "Maternal Mortality Ratio (MMRo)")  
print(mmr\_data\_filtered)

## # A tibble: 1 × 2  
## Metric Value  
## <chr> <dbl>  
## 1 Maternal Mortality Ratio (MMRo) 3.27

Maternal Mortality Bar Chart

ggplot(mmr\_data\_filtered , aes(x = Metric, y = Value, fill = Metric)) +  
 geom\_bar(stat = "identity", width = 0.4) +  
 labs(  
 title = "Maternal Mortality Ratio (MMRo)",  
 x = "Metric",  
 y = "Value (per 1000 Live Births)"  
 ) +  
 theme\_minimal() +  
 theme(legend.position = "none") +  
 geom\_text(aes(label = round(Value, 2)), vjust = -0.5)

