Relationship between Maternal Mortality Rate (MMR) and Maternal Mortality Ratio (MMRatio)

$$\text{Maternal Mortality Rate (MMR)} = \left(\frac{\text{Total Number of Maternal Deaths in 2016-18 (MD)}}{\text{Total Population of Women in the age-group 15-49 years In 2016-18 (PW)}} \right) \times 1,00,000$$

which can also be written as

$$= \frac{\text{MD}}{\text{Total Number of Live Births in 2016-18 (LB)}} \times \frac{\text{Total Number of Live Births in 2016-18 (LB)}}{\text{PW}} \times 1,00,000$$

which can also be written as

$$= \left\{ \left(\frac{\text{MD}}{\text{LB}} \right) \times 1,00,000 \right\} \times \left(\frac{\text{LB}}{\text{PW}} \right)$$

$$= \left(\text{MMRatio in 2016-18} \right) \times \left(\text{General Fertility Rate (GFR) in 2016-18} \right)$$

Therefore, MMR = MMRatio X GFR, where MMRatio signifies the risk of maternal death with respect to the number of live births and GFR shows the level of fertility in a population. If GFR is equal to 1, then MMR becomes equal to MMRatio. If GFR remains constant over the years, then a rise in MMR over time is directly proportional to the rise in MMRatio.

Also, GFR is the ratio of MMR to MMRatio. So, GFR will rise over the years if MMR rises faster than the MMRatio over time. GFR becomes equal to 1, if MMR is equal to MMRatio.