
Bayes Theorem applied to predict conditional mortality rates by gender

It has been observed that men were more likely than women to die of Covid-19. How much more likely? The Bayes theorem for conditional probabilities answers:

In the United States, as of 4/28,2020 – 7 weeks into the pandemic:

US	Dead	Recovered	Total Closed Cases	% Cases	Prob (Death/Gender)
Male	35,221	62,892	98,113	50%	36%
Female	21,587	76,526	98,113	50%	22%
Total Closed Cases	56,808	139,418	196,226		
% Cases	29%	71%		100%	

Of the males that have tested positive, one is likely to die and two will probably recover. Of infected females, about one in five can expect to die.

The US death probabilities are dire, but they will improve as the pandemic treatment and prophylaxis evolve.

All over the world, the situation was slightly better:

World	Dead	Recovered	Total Closed Cases (k)	% Cases	Prob(Death/Gender)
Male	131.8	441.9	573.7	50%	23%
Female	80.8	492.9	573.7	50%	14%
Total Closed Cases (k)	212.6	934.8	1147.4		
% Cases	19%	81%		100%	

Less than one in four infected males and only one in seven women are expected to die.

Caveats: I assumed both men and women get infected at the same rates.

The calculations can be redone for age groups and various health conditions.

Stay home and be safe!

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