Risks and Odds (v2)

Risks and Odds Are Not The Same

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1 Risk

Let's think about risk:

$$\text{risk} = P(\text{event happened}) = \frac{\text{number of events}}{\text{number of events} + \text{number of non-events}}$$

2 Odds

The odds are the probability that an event happened divided by the probability that it did not happen

$$\text{odds} = \frac{P(\text{event happened})}{P(\text{event didn't happen})}$$

which in turn is equivalent to

$$= \frac{\frac{\text{number of events}}{\text{number of events+number of non-events}}}{\frac{\text{number of non-events}}{\text{number of events+number of non-events}}}$$

which incidentally reduces to

$$= \frac{\text{number of events}}{\text{number of non-events}}$$

3 Visualize The Risk And Odds

Imagine an *Event X*. This event could be entering a program, exiting a program, or getting a diagnosis of a mental health or physical health condition.

Click on the table below and/or hover over the graph below to explore various scenarios.

3.1 Visualization

3.2 Table

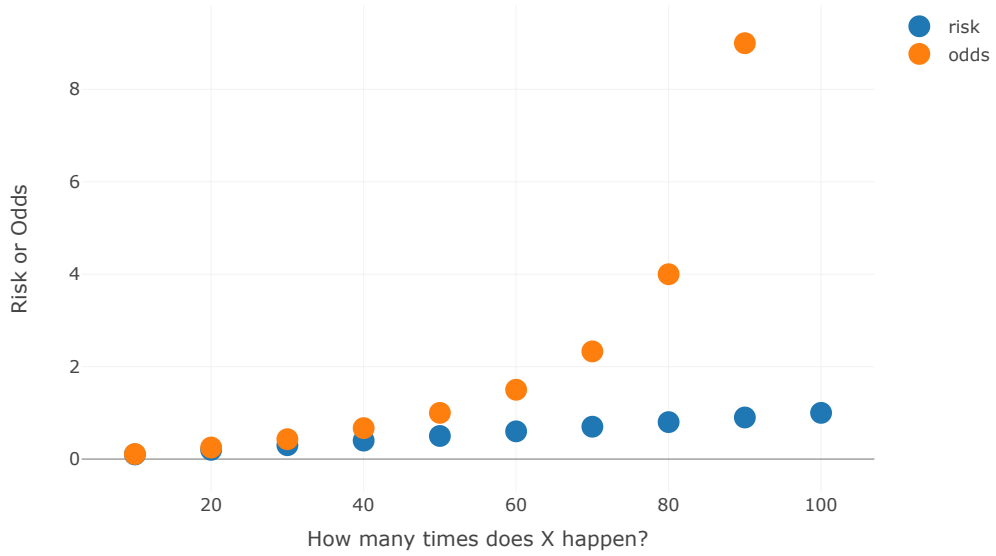

Figure 1: Visualization of Risks and Odds

Table 1: Table of Risks and Odds

Total Events			
100	10	0.1	0.11
100	20	0.2	0.25
100	30	0.3	0.43
100	40	0.4	0.67
100	50	0.5	1
100	60	0.6	1.5
100	70	0.7	2.33
100	80	0.8	4
100	90	0.9	9
100	100	1	