Distinguishing Three Similar Measures of Risk

Relative Risk (RR): measure of association showing the risk of disease or death due to exposure relative to that for unexposed persons

$$RR = \frac{\text{rate of disease or death among } \textbf{exposed} \text{ persons}}{\text{rate of disease or death among } \textbf{unexposed} \text{ persons}}$$

Attributable risk (AR) : ***increment*** in disease or death due to cause ***among the exposed*** that can be attributed to the exposure

$$AR = \frac{\text{rate among } \textbf{exposed} - \text{rate among } \textbf{unexposed}}{\text{rate among } \textbf{exposed}} * 100\%$$

Population Attributable Risk (PAR): percentage of disease or death ***in the entire population*** that is attributable to the exposure. [Requires knowledge of the prevalence of the exposure in the population.]

$$PAR = \frac{\text{Prevalence } (RR - 1)}{\text{Prevalence } (RR - 1) + 1} * 100\%$$

Note that this is really $\frac{\text{numerator}}{\text{numerator} + 1} * 100\%$