

What is Prevalence in Statistics? (Definition & Example)

Authored by
stats writer

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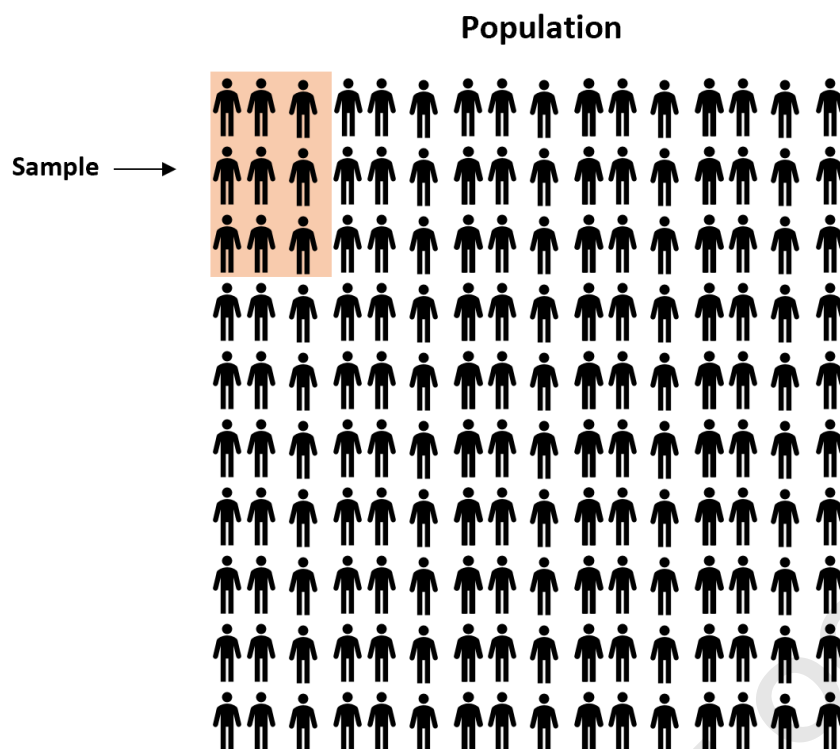
PSYCHOLOGICAL SCALES. Retrieved from <https://scales.arabpsychology.com/?p=155894>

Prevalence in statistics refers to the proportion of a population that has a certain characteristic or condition at a given point in time. It is often used to measure the frequency or occurrence of a particular event or condition within a population. For example, the prevalence of diabetes in a country would be the percentage of the population that has been diagnosed with diabetes. This statistic is important in understanding the impact of a certain condition on a population and can be used to inform public health policies and interventions. Prevalence is typically expressed as a percentage or a rate and is an important tool in analyzing and interpreting data in various fields, such as epidemiology, healthcare, and social sciences.

What is Prevalence in Statistics? (Definition & Example)

In statistics, prevalence is the proportion of individuals in a population who have a specific characteristic at a certain time period.

Researchers typically measure prevalence by taking a of individuals from the population and simply counting how many of the individuals in the sample have the specific characteristic.



For example, suppose researchers want to understand the prevalence of disease X in a certain city.

To calculate this, they may collect a random sample of 5,000 individuals from the city and find that 120 of the individuals in the sample have disease X.

The prevalence of disease X would then be calculated as:

Prevalence = Individuals with disease / Total individuals in sample
 $\text{Prevalence} = 120 / 5,000$
 $\text{Prevalence} = .024$

The researchers would conclude that the prevalence of disease X in this particular city at this point in time is .024 or 2.4%.

Note: It's important that a is used so that a is obtained. This ensures that the findings from the sample can be extrapolated to the overall population of interest.

How to Report Prevalence

When reporting prevalence in a formal paper, researchers typically either use a percentage or a number divided by 10,000 or 100,000.

For example, suppose the prevalence of disease X is calculated as .024.

When reporting this value, researchers will write something like:

The prevalence of disease X is 2.4%. Disease X is prevalent in 240 out of 10,000 people. Disease X is prevalent in 2,400 out of 100,000 people.

In general, the lower the value for prevalence the higher the denominator for the number of people will be.

For example, suppose the prevalence of disease X is .000031.

Since this number is so tiny, researchers may report this as:

The prevalence of disease X is 31 out of 1,000,000 people.

This makes the value for the prevalence easier to interpret and understand.

The Difference Between Prevalence and Incidence

One term that people sometimes confuse with prevalence is incidence.

Incidence refers to the number of new cases of a specific characteristic at a certain time period.

For example, suppose researchers take a random sample of 5,000 individuals in a certain city and find that 90 people have developed disease X in the past year while an additional 30 have been living with disease X for a long time.

We would calculate the incidence as:

Incidence = Individuals with newly developed disease / Total sample size
 $\text{Incidence} = 90 / 5,000$
 $\text{Incidence} = .018$

The researchers would conclude that the incidence of disease X in this particular city at this point in time is .018 or 1.8%.

However, the prevalence would be calculated as the total proportion of individuals in the sample with disease X, regardless of when they developed the disease.

Thus, the prevalence would be calculated as:

Prevalence = (Newly developed disease + Existing disease) / Total individuals in sample
 $\text{Prevalence} = (90 + 30) / 5,000$
 $\text{Prevalence} = .024$

The researchers would conclude that the incidence of disease X in this particular city at this point in time is .024 or 2.4%.

Additional Resources

The following tutorials provide information about other terms commonly used in statistics: