# ODDS RATIO

Authored by

**Mohammed looti**

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Introduction

Odds Ratio (OR) is a statistical measure used to compare the odds of an event occurring in one group versus another group. It is commonly used to compare the risk of an event occurring in a population with a specific exposure to a population without the exposure. ORs are used in medical research to study the relationship between exposures and outcomes, and in epidemiology to measure the association between two exposures or between an exposure and an outcome.

Definition

The Odds Ratio (OR) is the ratio of the odds of an event occurring in one group to the odds of the same event occurring in another group. Mathematically, it is defined as:

OR = (a/b) / (c/d)

where a is the number of events occurring in the group with exposure, b is the total number in the group with exposure, c is the number of events occurring in the group without exposure, and d is the total number in the group without exposure.

History

The OR was first used in the field of medicine in the 1930s to compare the risk of a disease in different populations. It was introduced by the British epidemiologist Sir Austin Bradford Hill, who used it to compare the risk of tuberculosis in groups of people with different levels of exposure to the risk of the general population. Since then, it has been used in many fields of research, from clinical medicine to epidemiology and social science.

Characteristics

The OR is a measure of relative risk, meaning it measures the risk of an event occurring in one group relative to the risk in another group. It is a relative measure, so it does not provide an absolute measure of risk. ORs can range from 0 to infinity, with higher values indicating a greater relative risk. For example, an OR of 2 indicates that the odds of an event occurring in the exposed group are twice as high as the odds of the event occurring in the unexposed group.

The OR is often used to compare the risk of an event occurring in a population with a specific exposure to a population without the exposure. It can also be used to compare the risk of an event occurring in two different populations with different levels of exposure.

Conclusion

The Odds Ratio (OR) is a widely used measure in medical research and epidemiology to compare the risk of an event occurring in one group to the risk in another group. It is a relative measure, so it does not provide an absolute measure of risk. ORs can range from 0 to infinity, with higher values indicating a greater relative risk.

References

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