Interpreting Results
Common Research Terms

A very important step to accurately interpreting and translating research is to be able to differentiate between various research terms. Below is a short list of some of the most confused and misrepresented terms along with practical examples to help you build your research analysis and communication skills.[1,2]

Causation

Cause & effect - when the exposure / intervention produces the outcome.[1]

Association

The statistical relationship between two variables - meaning an outcome is more likely to occur with a specific exposure.[1]

Note: Most nutrition research measures association since it is difficult to control lifestyle factors that might influence the outcome to measure direct causation.[1]

EXAMPLE: There can be an **association** between people who like the color blue & weight loss, but liking blue does not **cause** weight loss.

Statistical Significance

The probability of the results happening under the same study conditions is larger than what would happen by random chance. [2]

Clinical / Practical Significance

Results that are large or different enough to be considered important in a real-world context. [2]

Note: Results can be statistically significant without being clinically / practically significant

EXAMPLE: Weight loss of one pound can be **statistically significant**, but is likely not **clinically, practically significant**.

Reliability

The consistency of a measure, or how likely the results can be reproduced using the same study methods.[3]

Validity

The accuracy of a measure, or how correct a tool is at measuring what it intended to measure.[3]

EXAMPLE: If you weigh a 130-lb person 5 times in a row and obtain 150 pounds every time, the results are **reliable**, but not **valid**.

Prevalence

The proportion of individuals with a health condition present at a specific point in time, which therefore measures frequency of a condition.[3]

Incidence

The number of new cases of individuals with a health condition that are developed during a specific time period, which is used to calculate risk. [3]

EXAMPLE: 10 people where 5 are obese but 3 were already obese prior to this year, the **prevalence** of obesity would be 50% but the **incidence** of obesity would be 2 in 10 people.

Risk Increases / Multiplies

A health risk in research refers to how likely a negative health outcome will occur given a certain set of participant characteristics or lifestyle choices.[5] While it can help determine potential associations (see above), it is often used to overstate or exaggerate results out of context in media reporting. When you see that risk increases by double, triple, or some other measure, it is important to investigate the full picture, including determining what the risk was to start. [2,5]

EXAMPLE: If the **original risk was small** (1 in 1000 or 0.1%) and it doubles, the increase and overall risk are likely still small (1 in 500 or 0.2%). However, if the **original risk was larger** (1 in 10 or 10%) and it doubles, the increase and overall risk will also be larger (1 in 5 or 20%).

References:
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