



護理系 關可欣 老師



Reliability

- The **consistency** and **accuracy** with which an instrument measures an attribute
- Reliability assessments involve computing a **reliability coefficient**
 - Most reliability coefficients are based on correlation coefficients

Objective

- After previewing, the student should be able to do the following:
 - Identify how measurement error can affect the outcomes of a research study.
 - Identify the purposes of reliability.
 - Begin to evaluate the reliability and of measurement tools.



Stability

- The extent to which scores are similar on two separate administrations of an instrument.
- Evaluated by **test-retest reliability**:
 - Requires participants to complete the same instrument on two occasions.
 - A correlation coefficient between scores on first and second administration is computed.
 - Appropriate for relatively enduring attributes (e.g., self-esteem).



Internal Consistency

- The extent to which all the instrument's items are measuring the same attribute
- Evaluated by administering instrument on one occasion
- Appropriate for most multi-item instruments
- Evaluation methods:
 - Split-half technique
 - **Coefficient alpha**
(Should be at least **.70**; **.80** preferable)

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Equivalence

- The degree of similarity between alternative forms of an instrument or between multiple raters/observers using an instrument.
- Most relevant for structured observations.
- Assessed by comparing observations or ratings of two or more observers (inter-observer/inter-rater reliability).
- Numerous formula and assessment methods.
- Small number of categories is desired, the **kappa** statistic is often used.

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Three Aspects of Reliability Can Be Evaluated

Stability

- extent to which an instrument yields the same results on repeated administrations.

Internal consistency

- extent to which all the instrument's items are measuring the same attribute.

Equivalence

- estimates of inter-rater or inter-observer reliability are obtained.

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