

SEN-SRN Conversion Course
Research Module



Data Collection Methods Reliability & Validity

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Data Collection

- Choice of data collection instruments available
- You need to decide those best suited to the needs (the data that needs to be collected)
- Can use already available instruments which were already tested for validity and reliability
- If not applicable, an instrument needs to be devised to fit the purpose
- Remember: no method of data collection is perfect: all with strengths and limitations
- Task to find the most appropriate and be aware and discuss the strengths and weaknesses



Means of Data Collection

- Personal & Telephone Interview
- Focus Group Interview
- Questionnaires
- Observation
- The Critical Incident Technique

Interviews

- Standardise the interview
- Each respondent will be asked the same questions
- Questions should be understandable to all respondents
- If respondent does not understand, repeat the same question
- If still fails, explain the question further
- ‘Yes’ and ‘No’ answers get more structured results
- If the above is not applicable, offer range of alternatives
- Invite respondent to clarify his/her response
- Seek confirmation if your understanding is correct
- Can be unstructured to explore subject’s experience⁴

The Interviewer

- Good communication and interpersonal skills
- Able to adjust tone of voice or speech to establish rapport with the subject
- Standard procedure and behaviour to be applied in all interviews
- Where possible same sex of respondents
- Ideal age group between 25-45 years
- General appearance - plainly attired interviewers
- Avoid too optimistic or pessimistic attitude, be realistic

Interviews - Advantages

- Fuller response - cannot leave blanks as in questionnaires
- Solution to illiteracy, blindness, poor education, very young or very old etc.
- Ambiguities can be clarified, misinterpretations can be avoided
- Can expand on certain topics
- Avoid filling of questionnaires' answers by colleagues
- Interviewer can assess also non verbals, attitude and performance of interviewee.



Focus Group Interviews

- A group of usually 5-15 people assembled for group discussion
- The interviewer (or moderator) guides discussion according to written set of questions
- Very efficient method
- Different viewpoints and data are collected quickly
- Disadvantage: some may feel uncomfortable to express themselves in front others

Telephone Interviews

- Should be as structured and standardised as much as possible
- Less costly; convenient
- Can get quick information
- Less effective than personal interviews
- Respondents may be uncooperative and unresponsive

Questionnaires (1)

- Questions need to be simple & understandable
- Should fit the level of education of respondents
- Open questions: asks for any kind of information respondents feel relevant
- Closed questions: range of possibilities: dichotomous (e.g. yes/no)
- Demographic questions (age, gender, work etc.)
- Can include mixture of above
- A covering letter indicating research problem, aims & objectives, participation not obligatory, confidentiality assurance, availability of results, consent form if indicated.

Questionnaires (2)

- **Advantages**
 - Can be applied to many populations
 - Flexible, broad, less threatening, less bias
 - Can focus on many topics
- **Disadvantages**
 - Inappropriate to survey children
 - Superficial
 - Extensive not intensive
- **Need at be**
 - Clear
 - Simple
 - Unambiguous

Questionnaires: Types of Measures

Rating Scales

- *Graphic Scales without number*



- *Graphic Scales with numbers*



- *Numerical scales*

1. Completely agree
 2. Mostly agree
 3. Slightly agree
 4. Mostly disagree
 5. Completely disagree
- a. extremely well
 - b. very well
 - c. fairly well
 - d. hardly at all
 - e. not at all

- *Numerical scales in percentages*



Observations

- Observing and recording behaviours and activities of interest
- Can be done by the human senses or by technical equipment
- Training of observer is important
- Limitations:
 - Observer's: biases, anticipation, personal interest, hasty observations and decisions
 - 'Hawthorne effect'
 - Many refuse to be observed
 - Ethical problems

Critical Incident Technique

- A method of obtaining data from study participants by in-depth exploration of specific incidents and behaviour related to the matter under investigation (e.g. how nursing over is given)
- Introduced by the US Army Air Force (WW2)
- Focuses on factual incident or procedure
- Respondent is asked to testify as an 'expert witness'
- Data collection form should be formulised, sub headed of needed under different issues
- Respondents to highlight what was effective and why and what was ineffective and why
- Respondents to remain anonymous

Validity & Reliability

- **Validity:** Whether or not a method measures what it sets out to measure (is a clock valid to measure time?)
- **Reliability:** Whether or not a method of measurement works consistently in producing similar results in similar situations (is the clock reliable to measure consistently the time?)
- **Remember:**
 - No tool is completely accurate
 - Some tools are more prone to errors than others
 - Important: The format of the instrument: paper, font, length, style, instrument clarity: language, grammar, simplicity, local environment

Optimizing Validity & Reliability

- *Validity:*
 - If it is foreign you may need to test it locally
 - Content validity: by experts in the field
 - Pilot on potential respondents
 - Criterion Validity; questions ‘correlates’ others
 - Predictive Validity: relates to future validity
- *Reliability:*
 - Stability, Internal consistency (Crombach’s Alpha)
 - Equivalence: to what degree 2 observers report the same