

Lecture 2

Research as Second Language: Knowing the Rules of the Game

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As a language

- Has a certain structure
- Has a distinct vocabulary
- Has rules and vision of truth
- Has levels of subtlety
- Has levels of status
- Has a certain style

Language seen in structure

- 1) Problem stated:
- 2) Literature search-what others have found, ie. State of the art
- 3) Design and Method-How we plan to solve it-design and method
- 4) Data-What we found
- 5) Discussion –what we make of what we found
-strengths and weaknesses of study, suggestions for follow up.
- 6) Any conclusions

1) The problem

- State clearly as possible
- Use literature search (how others have identified the problem and what they have found) to refine your problem.
- Stronger if linked to a theory in a way that could substantiate or critique the theory, i.e. the theory would predict this and we found that to be true or what we found contradicts the theory.

2) Literature Search

- Goal is to locate your project within the field
- Goal is to show your contribution to the ongoing discussion of the problem.
- Goal is to help refine your problem
- Goal is to see how others approached the problem and whether you want to use some of their ideas, ways to measure, etc. or try something new.

3) Design and Methods = Rules

A) What type of data will be collected?

Qualitative.....Quantitative

B) How is the data collected? (Research Design)

C) Who will be selected? (Sampling)

D) When will the data be collected? (Cross-Sectional or Longitudinal)

E) Where will data be collected?

F) By whom will the data be collected?

A) Rules re: Types of Data

What types of data are considered “truth bearing”

What type of data will be collected?

Qualitative.....Quantitative

Observational.....Test based

Types of Research Design

- Observational
 - Qualitative design
 - Phenomenology
 - Grounded Theory
 - Ethnography
 - Historical
 - Discourse Analysis
 - Triangulation
 - Quantitative design
 - Cross-Sectional
 - Case control
 - Classical cross-sectional
 - Longitudinal
 - retrospective or prospective cohort
- Experimental
 - Intervention without a control group
 - Intervention with a control group (i.e. randomized clinical trials)

Qualitative

- ...focuses on answers to questions relative to social experience, how it is created, and how it gives meaning to life. (116-7)

Qualitative Research's Characteristics

1. Belief that multiple realities exist and create meaning for the individual
2. Belief that multiple realities require multiple approaches for collecting data.
3. Commitment to the participants view of reality, rather than allowing the researcher's preconceived views to define reality.
4. Interviews take place in the natural context of the phenomenon

Qualitative Research's Characteristics

5. Investigator is not separate from the research but considered an instrument in the study.
6. Participants determine the truth of the findings and give feedback to the researcher on whether findings reflect their lived experience.
7. Findings reported using a rich literary style that includes quotes and commentaries.

Qualitative Research

Cross Sectional –Case Studies

- Best for studying conditions that are relatively rare or uncommon.
- Can only determine whether a characteristic is more common among cases with a certain condition (i.e. establish an association)
- Example: Anne's Broken Heart Study

Qualitative Research

Cross-Sectional (Classical)

- Makes up 80-90% of studies on religion/spirituality and health
- It can only determine if one characteristic is associated with another.
 - confounders
 - mediator
 - explanatory variable

Qualitative Research – Cross Sectional (Classical)

Strengths

- Relatively quick
- Inexpensive
- Can use large number of participants
- More easily generalizable if
 - sampling is random
 - response rate is high
 - non-response rate bias is not a problem.

Weaknesses

- No information on causality, direction or effect
- No information on how relationship came about
- Collect relatively superficial information
- Cannot control or measure for all characteristics likely to influence relationship of religion/spiritual and health

Types of Qualitative Research

1. Phenomenology
2. Grounded Theory
3. Ethnography
4. Historical
5. Discourse analysis
6. Triangulation

Qualitative Designs - Phenomenology

- Designed to describe a particular phenomenon or the appearance of things as a lived experience. 118
- ...this approach involves the researcher asking participants to write down or provide verbal descriptions of their experiences...118

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Qualitative Design – Grounded Theory

- Most widely known and used qualitative method. 119
- ...this method seeks to develop a theory about a phenomenon of interest that is grounded or rooted in observation. 119
- ...it involves an iterative process that goes from the general to the specific... 119

Grounded Theory -

- The process starts out very open...strategies for analyzing the data collected from participants include coding (categorizing the data and describing the implications and detail of these categories, memoing (recording the thoughts and ideas of the researcher as they evolve throughout the study, and creating integrative diagrams (used to pull the detail together into a theory that makes sense of the data.

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- Harold G. Koenig, Spirituality & Health Research, Templeton Press, West Conshohocken, PA 2011 pg 119

Qualitative Design-Ethnographic

- Participant observation is a key aspect of this more of qualitative research
- Record their observations and experiences in the field. 19

Ethnography

- Ethnography is the research method committed to describing the social and cultural worlds of a particular group (Emerson, 1983) Emerson, R.M. (1983) Contemporary field research Boston: Little Brown and Co. pg 17

Ethnography Anna Omery, in Barbara Sarter, Ed Paths to Knowledge Innovative Research Methods for Nursing, National League of Nursing 1988 New York

Ethnographic Assumptions

- Robertson and Boyle (1984) ...all ethnographers share an epistemological conviction that human behavior can only be understood within the context in which it occurs.

Ethnography Anna Omery, in Barbara Sarter, Ed Paths to Knowledge Innovative Research Methods for Nursing, National League of Nursing 1988 New York, pg 19

Ethnology-Approach One

Emic

- An 'emic' account is a description of behavior or a belief in terms meaningful (consciously or unconsciously) to the actor; that is, an emic account comes from a person within the culture. Almost anything from within a culture can provide an emic account.

http://en.wikipedia.org/wiki/Emic_and_etic 121017

- Emic approach-believes that knowledge is acquired through a discernment of the informants/ view of reality. Research does the organizing.

Ethnography Anna Omery, in Barbara Sarter, Ed Paths to Knowledge Innovative Research Methods for Nursing, National League of Nursing 1988 New York pg 20

Ethnology: Approach 2

Etic

- An 'etic' account is a description of a behavior or belief by an observer, in terms that can be applied to other cultures; that is, an etic account attempts to be 'culturally neutral'.

http://en.wikipedia.org/wiki/Emic_and_etic 121017

- Etic-will examine the language of the culture, learn the organizing frameworks, and describe the cultural perceptions of reality from the viewpoint of a member of that culture. The subject is the expert.

Ethnography Anna Omery, in Barbara Sarter, Ed Paths to Knowledge Innovative Research Methods for Nursing, National Leauge of Nursing 1988 New York pg 20

Ethnology: Steps

1. Selecting an ethnographic project
2. Asking ethnographic questions
3. Collecting ethnographic data
 - a. complete observers
 - b. Observers as participant
 - c. participant-as Observer
 - d. Complete participant
4. Making an ethnographic record
5. Analyzing ethnographic data
6. Writing an Ethnography

Limitations of Ethnology

- Create unique problems for validity, reliability and generalizability.
- Very difficult to replicate.

Qualitative Design - Historical

- ...involves systematic collection and objective evaluation of data in order to study interrelationships among ideas, events, institutions, or people in the past. The purpose is to test hypotheses concerning causes of effects on, or trends in these events...to explain present events and anticipate future events.

Qualitative Design – Historical

- The goal of historical research is...“ to reconstruct the past systematically and objectively by collecting, evaluating, verifying, and synthesizing evidence to establish facts and reach defensive conclusions.”

Isaac,, S., & Michael, W. B. (1981) Handbook in research and evaluation (2nd ed.) SanDiego, CA Edits Publishers. As found in Barbara Sarter, Educational Paths to Knowledge, Innovative Research Method for Nursing, National League of Nursing, 1988, NY. In The Historical Method in Nursing by Jan L. Lee. Pg 5-17

Criticism of Historical Method

- external criticism is concerned with assessment of the authenticity of sources;
 - internal criticism involves examination of texts to identify error, misrepresentation and inconsistency.
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- The new quantitative history, Social Science or old wine in new bottles? In J.M. Clubb & E.K Scheuch Ed. Historical social research, The use of historical and process-produced data, Stuttgart, German: Ernst Klett. page 20

Historical Research: Potential Problems

- Lack of problem clarity
- Lack of theoretical framework
- Access to source data
- Condition of Source Data
- Difficulty Staying Focused
- Imprecise documentation
- Neglect of context
- The creative challenge
- Researcher preparation

Jan L. Lee "The Historical Method in Nursing" in Barbara Sarter, ed. *Paths to Knowledge: Innovative Research Methods in Nursing*, National League of Nursing 1988. New York.

Historical Method contribution to Theory

- The historical method has three major roles in relation to theory development and testing, First, it is useful in tracing the chronology of knowledge development in nursing. Second, with its context-dependent criteria, it is helpful in clarifying the antecedent factors, philosophical underpinnings and resulting products that have evolved in the field o nursing theory development. Third, tenets of the historical method can be indirectly employed in present-day theory testing studies to ascertain to what degree the theory was utilized in the present study is consistent with the theory as presented traditionally.

Jan L. Lee “The Historical Method in Nursing” in Barbara Sarter, ed. Paths to Knowledge: Innovative Research Methods in Nursing, National League of Nursing 1988. New York.

Qualitative Design- Discourse Analysis

- Written or spoken language are studied for their social significance.
- Looking for themes, patterns, sequences etc.

Qualitative Design - Triangulation

- Uses a combination of the given methods.
- The goal is to get a balance that gets the best of each and counters the weaknesses of each.
- Validates data through cross-verification...121

Harold G. Koenig, Spirituality & Health Research, Templeton Press, West Conshohocken, PA 2011
pg 120-1.

Quantitative Research

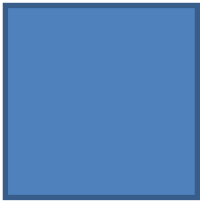
- Tends to deal more with physical things
- Where most funding currently is

Cross-Sectional vs Longitudinal

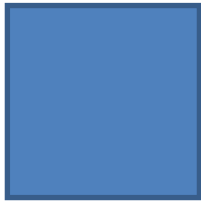
- Cross-sectional: a snapshot
once=case study or interview of many
- Longitudinal: a video
twice = pre-post measure

Design of Cross Sectional Studies

- Case Study



- Comparison



Experimental Group



Control Group

Cross-Sectional Anecdotal/Case Study

- This is usually a reflection paper on something a practitioner has observed that has not been mentioned before in literature.
- An “ah-hah!” moment for the investigator that begins to answer the questions they have been asking.

Anecdotal and Case Study

- To highlight something new
- Share your experience with others
- Challenge group to decide if this issue/concern is important enough to pursue.
- Usually limited to one subject or very small group.

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Longitudinal Studies

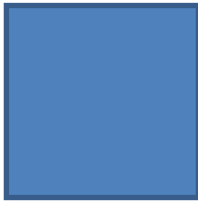
Design of Longitudinal Studies

Past

Present

Future

Retrospective



Prospective

Pre-Post Cross Sectional

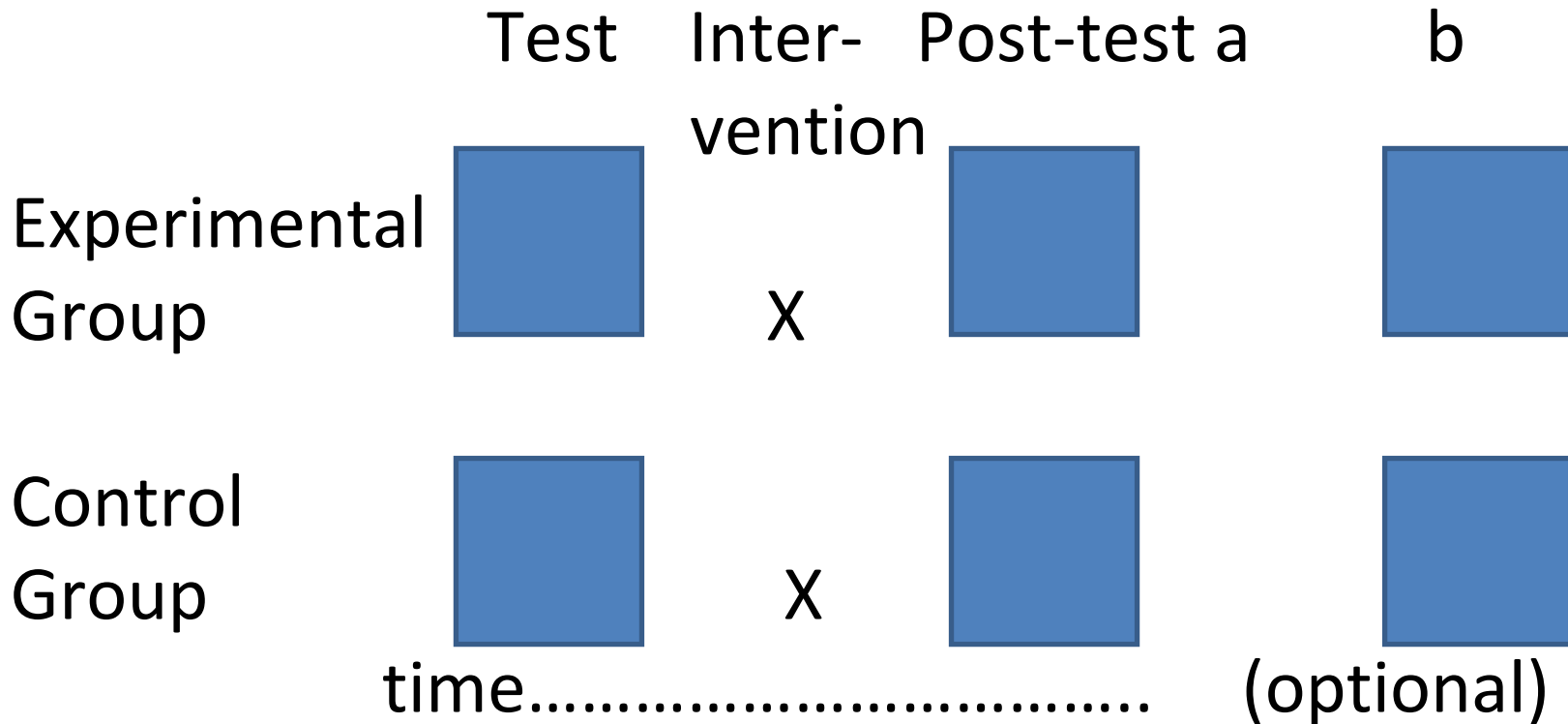
- More sophisticated than anecdotal or case study.
- To get better handle on the frequency, intensity, breadth and depth of the phenomenon.
- Can measure two or more things with or without intervention
- Can do larger numbers
- Can find associations between

Pre-Post Longitudinal

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Design of Longitudinal Experimental Studies

- Longitudinal -Experimental



Retrospective Cohort Studies

Strengths

- Adds the element of time
- Identify if two variable related
- And if so does change in one proceed the change in the other variable.
- Less expensive than prospective studies
- Less time consuming than prospective studies.

Weaknesses

- Cannot choose how variables were measured
- No control over covariates
- If data collected for other than clinical purposes, requires IRB approval and patient consent
- No common in spiritual/religious and health research

Prospective Cohort Studies

Strengths

- Time helps determine causation
- Control over how they choose to measure
- Easier to generalize than random clinical trials (RCT) because of strict inclusion-exclusion criteria of RCT

Weaknesses

- More expensive
- More time-consuming
- More complex
- Difficulty locating for follow up
- Drop outs effect ability to generalize findings
- * Follow up of 65-85% required for publication

Rules re: Who & How will be selected

Types of Sampling Procedures

- Nonprobability sampling:
 - convenience sample, purposive, quota, and referral or snowball.
- Probability sampling: (where each case in population has equal or known chance of being selected)
 - simple random, stratified random, cluster and systematic.

How a group is selected

- Nonprobability sampling:
 - convenience sample, purposive, quota, and referral or snowball.
- Probability sampling: (where each case in population has equal or known chance of being selected)
 - simple random, stratified random, cluster and systematic.

Convenience Sampling

- Takes the least energy and fewest resources
- Little pressure on subjects to participate
- Difficult to generalize from.

Systematic Sampling

- Systematic Non-random – consecutively admitted pts.
- Systematic Random sampling – consecutively admitted pts, but keep track of non-participants so you can know the response rate.

Random sampling (Probability Sampling)

- Group reflects the population you wish to study.

Simple Random Sampling

- Need a list of all members of the population which the researcher wishes to generalize.
- Randomize selection within that population
 - pick out of a hat
 - computer generated random selection

Stratified Random Sampling (Proportional or Quota Sampling)

- Uses certain characteristics to sub-divide the group. Then randomize selections within each subgroup.

Response Rates

- Is the number of people who respond divided by the number of people approached.
- Adequate response rate depends on methods of collecting data.
 - interviews – 70-80%
 - e-mailings -
 - mailings – 30%
- Bias of non-responders

Where will data be collected?

Qualitative

Observations

or

Participants

Reports

-verbal

-written

Quantitative

controlled

environment

Who will collect the data?

Qualitative

Quantitative

Participant Observer

Test instruments

or

Participant

Blinding Participants

- Types: unblinded, single, double or triple blinded
- Used to eliminate “social desirability” or Placebo Effect contamination (which can be up to 30% of results)

4) Results: What was found

- Each type of data has rules by which it needs to be presented and judged.
- Validity
- Reliability
- Tables, charts, etc.

5) Discussion

- What did the research find?
- What are the weaknesses or limits to the study?
- What further research does this study suggest?

Response Rates

- Replacements
- Adequate response rates
- Weighting

Clinical Trials – Basic Features

1. Standardization of the Intervention
2. Types of control Group: randomized, nonrandomized concurrent, historical, wait-list, Withdrawal
3. Subject Selection
4. Outcomes
5. Types of Consent: Before randomization, after randomization
6. Randomization: Simple, Blocked, Stratified, Unequal
7. Types of Blinding: Unblinded, Single-Blind, Double-Blind, Triple-Blind
8. Analysis of Results: Intent-to-Treat vs Per-Protocol Analysis, Inaccurate findings.

Koenig, Harold G., *Spirituality & Health Research, Methods Measurement, Statistics and Resources*, Templeton Press, West Conshohocken, PA, 2011, Chapter 9, Clinical Trials, pg 149-170.

Clinical Trials-Limitations

1. Feasibility
2. Translation into real world
 - a. Volunteer Bias
 - b. Inclusion Exclusion criteria
 - c. Expensive and Time Consuming

Koenig, Harold G., *Spirituality & Health Research, Methods Measurement, Statistics and Resources*, Templeton Press, West Conshohocken, PA, 2011, Chapter 9, Clinical Trials, pg 149-70.

Ethical Considerations

- Internal Review Board-(IRB)-oversees research on human subjects.
- Consent Forms
- Proper use of funding
- Conflict of Interest

How is the data collected? (Research Design)

- Qualitative
 - Cross sectional
 - Longitudinal (retrospective and prospective)
- Quantitative
 - Cross sectional
 - Longitudinal (retrospective and prospective)