Research Terminology - Design and Methods

What's the difference between research and audit?

"Research is concerned with discovering the right thing to do: audit with ensuring that it is done right"

Smith R. Audit & Research. *BMJ* 1992; 305: 905-6

Research: - A systematic investigation undertaken to discover facts or relationships and reach conclusions using specifically defined robust methods.

Clinical Audit: - A quality improvement process that seeks to improve patient care and outcomes through systematic review of care against explicit criteria and subsequent implementation of change

"Principles of Best Practice in Clinical Audit, 2002"

Research

- Asks what is best practice?

- Systematic approach to producing generalisable ***new*** knowledge
    - Define outcome measure(s) in advance

Audit

- Asks if best practice being met?

(measured against a set standard)

- Systematic review of care
    - Define audit criteria in advance
    - Implement change where necessary
    - Aim – to improve patient care & outcomes

United Bristol Healthcare NHS Trust 'What is Clinical Audit' Guide

Service Evaluation

- Concerned with defining routine practice
- Systematic assessment of service provision and quality
    - Define aims and objectives in advance
    - Should the service be continued or not?
    - Aim – to improve patient care & outcomes

Research, Audit or Evaluation?
Is your study research, audit or service evaluation? If you are doing audit or service evaluation you do not need NHS ethical approval for your study. However, some hosting Trusts may wish to do some research governance checks and procedures. For further assistance on defining the differences between audit, research and service evaluations follow the link to the National Research Ethics Service (previously called COREC)
http://www.nres.npsa.nhs.uk/applicants/help/faqs.htm

Types of research study

- **Basic research** – research just because I want to know
- **Applied research** – research because I want to solve a practical problem
- **Instrumental research** – because I need to show I can do a research project
- **Action research** – I want to change this practice, let's change and research the process and effects

What's the difference between quantitative and qualitative research approaches?

Quantitative	**Qualitative**
Produces numerical data	Produces textual and verbatim data
Study in controlled environment/controlled approach	Study of phenomena in natural settings
Inductive logic: theory generating	Deductive logic: theory testing
Scientific/natural sciences	Social sciences/behavioural

Research designs and methods

Research designs – an overall plan for addressing the research question including specification for enhancing the quality of the study

Methods – the tools, steps and procedures you follow and use to collect and analyse your data

Methodology – not the same as methods. The philosophical evaluation of investigative techniques; a concern with the conceptual, theoretical and research aspects of knowledge

A blueprint to work with a few basic designs

Level III: Experimental
a) Experimental
b) Quasi Experimental

Level II Survey
a) Comparative
b) Correlational

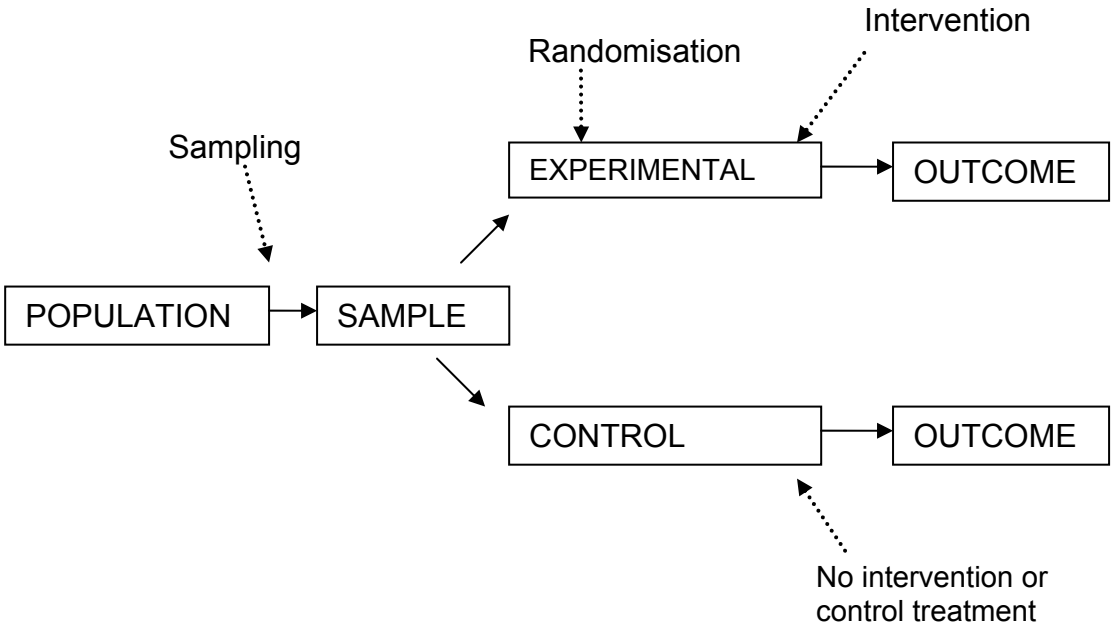
Level I: Exploratory-Descriptive
a) Descriptive
b) Exploratory

High levels of control and knowledge

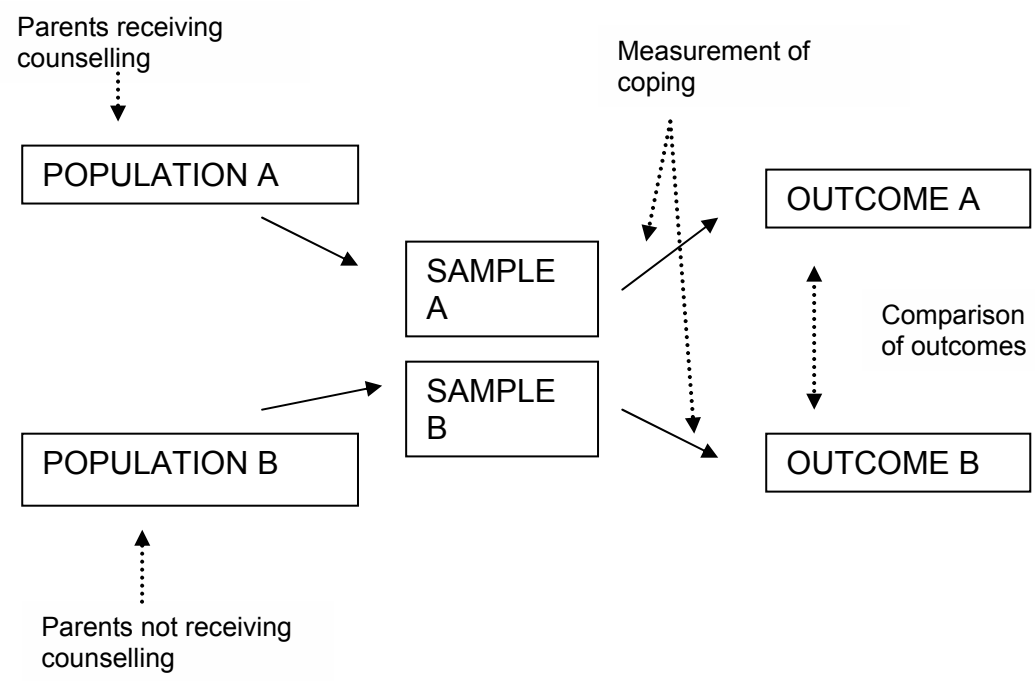
Low level of control and knowledge

"Experiments broadly defined are tests that involve at least one treatment (independent variable), units (e.g. subjects) to be analysed by [random] assignment or non assignment to a treatment [or intervention] and a comparison or inferring effects that may be attributed to the treatment" Buckwalter et al 1998

Level III: Randomised Control Trial



Level II: Comparative Designs



Level I: Exploratory-Descriptive Designs

Type	Research Question	Focus
Ethnography	What are the beliefs and practices of people with Hansen's disease?	Describes experiences within the cultural context
Phenomenology	What is the lived experience of radiotherapy for skin melanomas?	Captures the essence of experiences
Grounded theory	What are the processed by which adolescent with acne achieve sexuality?	Generates concepts leading to theory development

Research Methods and common data collection tools

Instrument / tool – device or techniques used to collect data (questionnaire, scale observation, table, interview

Method categories

a) Self report
b) Observational
c) Biophysiologic
d) Interviews
    a. Unstructured
    b. Semi structured
    c. Structured
    d. Focus group
    e. Life histories/oral histories
e) Diaries
f) Critical incidents
g) Observation
    a. Participant observation
    b. Participant as observer
    c. Non participant observation
h) Questionnaire
    a. Open ended questions
    b. Closed ended/fixed alternatives
    c. Dichotomous questions
    d. Multiple choice
    e. Rank order
    f. Forced choice
    g. Visual analogue scales
    h. Likert scores

Information kindly supplied by Heidi Surridge, University of Southampton, April 2007