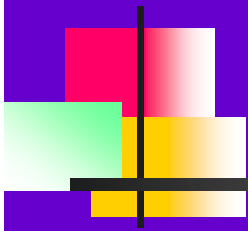


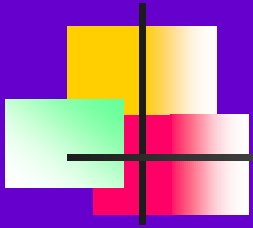
Quantitative and survey methods: an introduction



Dr Karin Ried

PHCRED Research Capacity Building Workshop
11/12 April 2007

Quantitative research



Primary studies

Original research

Experimental / Intervention

RCT
Controlled trial
Experiment

Secondary studies

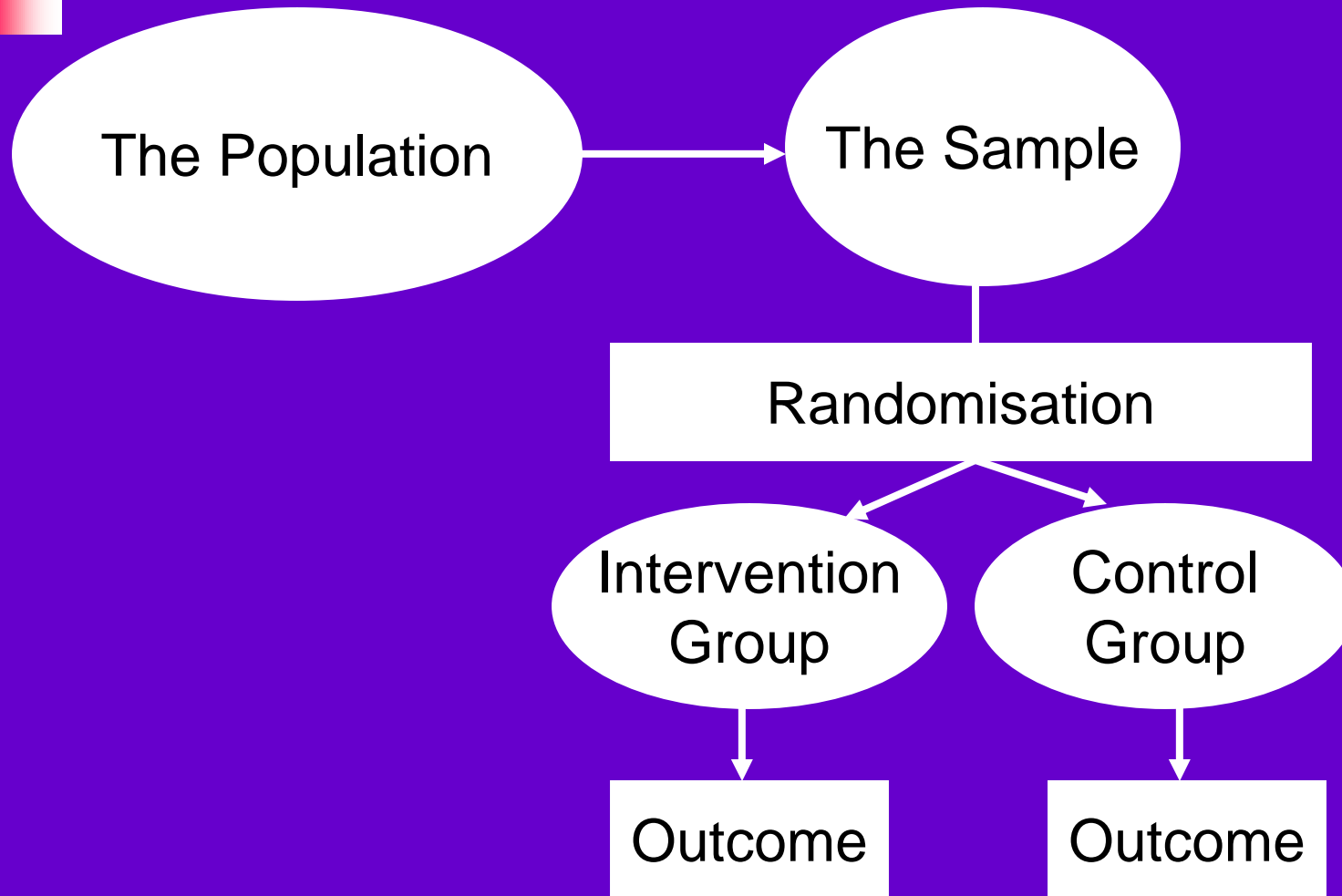
Conclusions from original research

Systematic review
Meta-analysis
Review

Observational

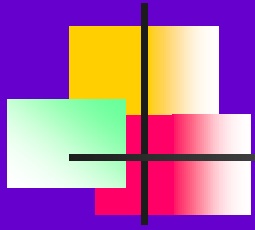
Cohort
Case-control
Cross-sectional
Survey
Case report

Randomised Controlled Trial (RCT)



Cohort study

Prospective



Present

The Population

Exposure to risk factor
yes / no



Future

The Sample

Disease
yes / no

Case-control study

Retrospective

Past

Present

Exposed to risk factor
yes / no

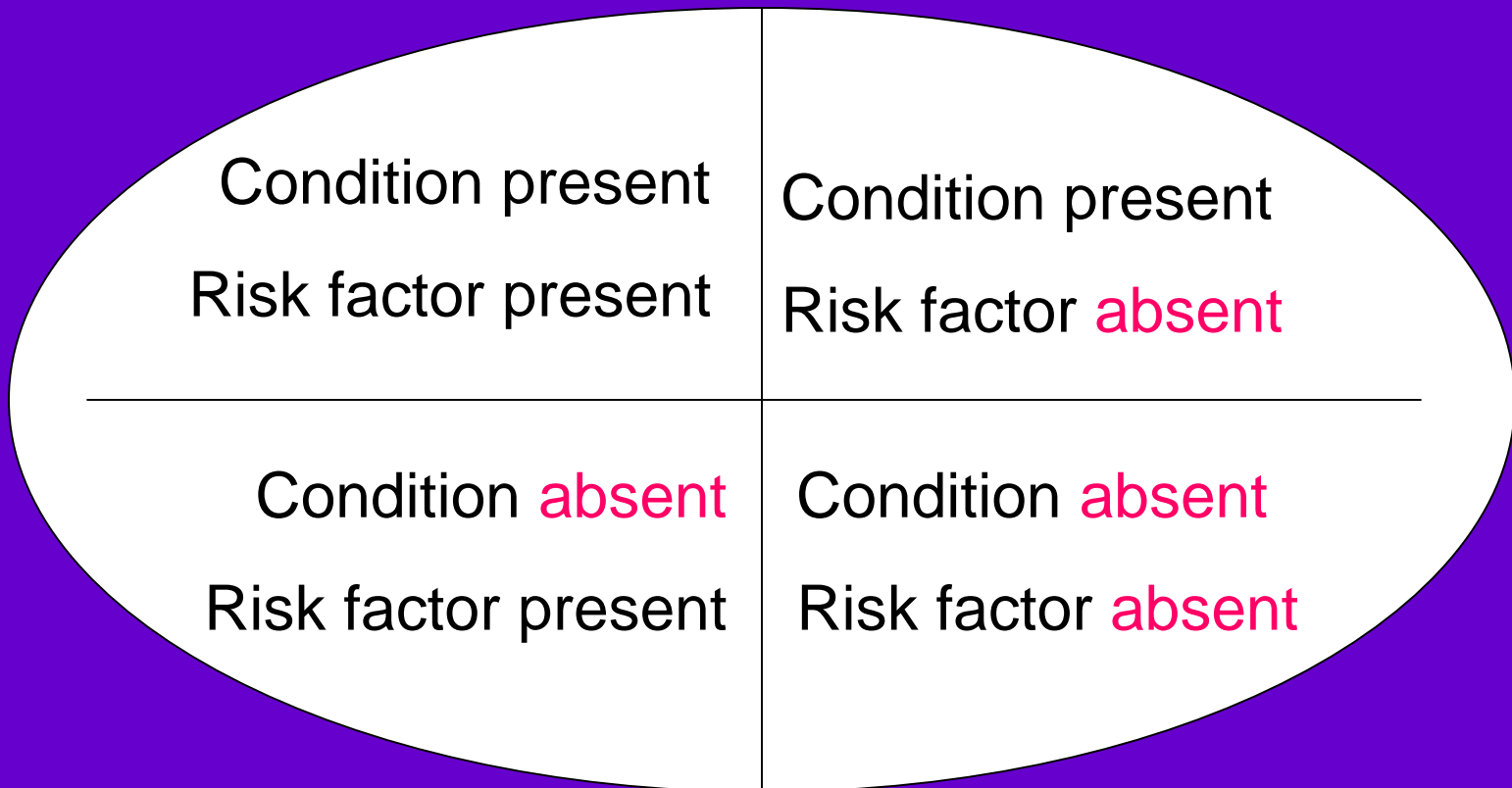
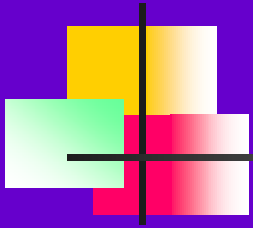
Cases
With condition

Exposed to risk factor
yes / no

Controls
Without condition

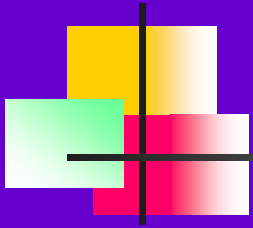
Cross-sectional study

Population Sample



Hierarchy of evidence

for questions on effectiveness of treatment



Systematic review

RCT

Cohort study

Case-control study

Cross-sectional

Case series

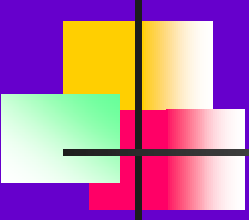
Case report



Study design

Study Design	Use for research on
RCT	Therapy, treatment, prevention
Cohort	Prognosis
Case-control	Causation
Cross-sectional	Diagnosis

Exercise 1

- 
- n What is the preferred study design?
Why?
 - n 10 E. coli cases in Adelaide in Feb 07
 - n Bowel cancer rate in Broken Hill
 - n Effectiveness of new back ache treatment



What is a survey?

For non-experimental, descriptive studies

- n Prevalence or incidence of particular condition
- n Information on attitudes & behaviour

Survey types:

- § Census - entire population
- § Cross-sectional - sample, one point in time
- § Longitudinal - sample, repeated over time
 - § Cohort - same group of individuals
 - § Trend - different people, same questions



Methods of data collection

- n Focus groups
- n Face to face interviews
- n Telephone interviews
- n Questionnaires
 - n Postal survey
 - n Email survey
 - n Web-based survey



Focus groups

- n Individuals with common characteristics
- n Limited resources

- n Study of group interaction
- n Develop questions

- n Tape record
- n Rule of thumb: 1 hour interview requires 10 hours of transcribing & analysis)



Face to face interviews

Preferable if

- n Subject matter sensitive
- n Questions more complex
- n Interview lengthy (> 40 min)
- n Qualitative data (views, attitudes)
- n Limited number of topics
- n Structured or in-depth



Telephone interviews

- n Generally shorter than face to face interview
- n Quantitative & qualitative data
- n Time 20-40 min



Questionnaires

Layout and type of questions depend on:

- n Completion by subject or interviewer
- n Literacy level
- n Response rate
- n Resources
- n Topic & population of interest



Exercise 2

What **survey** method would you choose?

- § Children & diet
- § Women & menopause
- § European immigrants & family violence
- § Medical students & feedback on placements

Types of questions

n Open-ended

--

n Closed

n Binary

yes
no

n Multiple choice

beer
wine
coffee

n Ranking

1, 2, 3, 4

n Scales

Scales

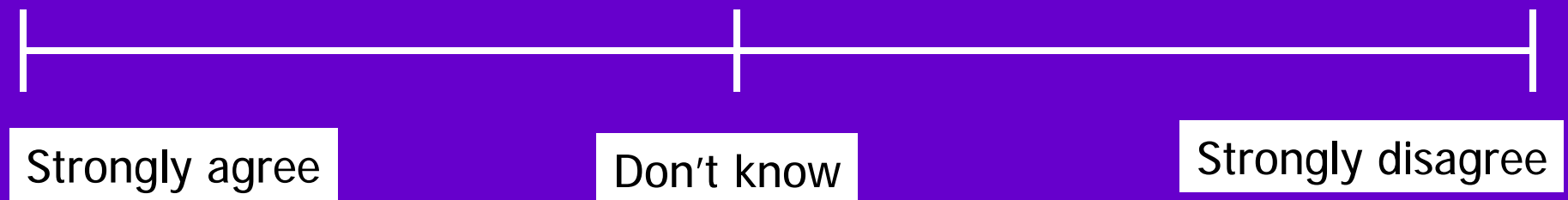
n Likert scale

Question	Strongly agree 5	Agree 4	Neutral 3	Disagree 2	Strongly disagree 1
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n Semantic differential scale

is safe	1	2	3	4	5	is dangerous
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n Visual analogue scale





Question wording

- n KISS: Keep It Simple & Short
- n Avoid jargon
- n Avoid leading questions
- n Avoid double-barrelled questions
- n Ask positive rather than negative questions
- n Provide mutually exclusive questions
- n Be precise
- n Provide all possible alternatives
 - n (+) Other (please describe) _____

Exercises 3

- n What questions should be avoided?
Why?



Dealing with data

- n Editing
- n Coding
- n Data entry
- n Analysis & interpretation
- n Presentation
- n Dissemination (report, publication)



Exercises 4+5

- n Exercise 4

- n Quantitative data analysis
- n Closed-ended questions

- n Exercise 5

- n Qualitative data analysis
- n Open-ended questions

Resources



n BMJ articles by T Greenhalgh et al.

E.g. Getting your bearings 1997; 315: p. 243-246 etc.

Selecting designing and developing your questionnaire 2004;
328: p. 1312 & 1372 & 1433

n Trent Focus resource packs

http://www.trentrdsu.org.uk/triage_resource_surveys.html

n D.A. Dillman (2000) Mail & internet surveys. Wiley & Sons Inc.



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