Group 1 – Quantitative methods

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Papers read


Use of Methodology

• In these papers, three different types of quantitative methods have been used
  – Traditional statistical analysis (Lauer, Hanks)
  – Statistics and indicative (Paloheimo)
  – Indicative (Trost, Kemkes)
Lessons learned

• Great care should be taken when planning the experiment
  – Bad experiments produce unusable data
  – In many cases there is no planned experiment and data originally gathered for other purposes is used

• Analysis of data only the beginning. Results are gained from interpreting the results of the analysis and drawing conclusions from it

• What to do when the hypotheses need to be abandoned?
  – Further experiments
  – Other types of analysis (e.g. Lauer paper)
Lessons learned (cont.)

• Care must be taken when reading the results
  – What do averages or standard deviations tell?
  – How to interpret graphs, like in Kemkes paper?
What can be achieved with quantitative methods?

• Statistically verify a hypothesis (true/false)
  – experiment must be well designed
  – verifies a result, but does it tell the reasons?
• Compare several alternatives
  – measuring results in a neutral way
  – collect / classify data in an neutral way
• Answer the question 'how much?'
  – not used in the papers we read
  – relevant in education?
• Quantitative methods can answer true/false, which one and how much questions but what about why?