

# Do journal clubs support evidence based practice in health care?



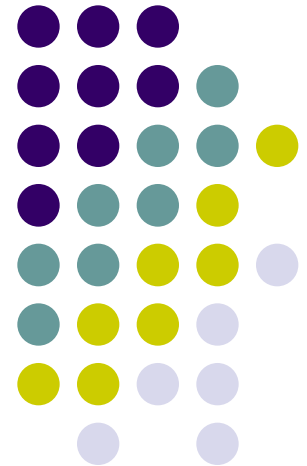
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# Objectives of the review

- To determine the effectiveness of the journal club as an educational intervention in supporting evidence-based practice in terms of
  - Learner reaction
  - Change in knowledge
  - Change in skills
  - Change in attitudes
  - Change in behaviour
  - Change in outcomes



# Underlying assumptions for the review question



- There is a relationship between
  - attitudes toward learning
  - acquisition of knowledge, and
  - development of skills
- Leading to
  - a change in clinical behaviour, and
  - improved patient outcomes

**Ask**

**Acquire**

**Appraise**

**Apply**

**A causal model or causal pathway**



# Inclusion and exclusion criteria

	Inclusion	Exclusion
<b>Population</b>	Health care professionals	Librarians
<b>Intervention</b>	Regular meetings Interactive discussion Aims to consider clinical applicability	One-off interventions Video/internet meetings Passive presentation with no discussion No focus on clinical applicability
<b>Outcome</b>	Learner reaction, change in knowledge, skills, attitudes, behaviour or patient outcomes	No assessment of these outcomes Reporting only on publication of appraised topic
<b>Study type</b>	Quan/qual evaluation studies, all languages	Surveys describing prevalence; opinion papers

# What did we actually find?



You can't get there from here...

# Different definitions of the intervention.

## *A journal club is...*



What is a group?  
8? 15? 42?

'A group of individuals

Every week?  
Every month?

who meet regularly

What kind of  
discussion?  
participation?

to discuss critically

Was this  
covered??

the clinical applicability

of articles in the current [medical] journals.'

Linzer 1987

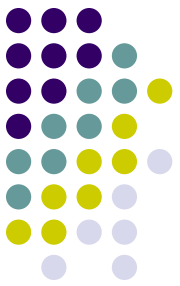


# No common terminology for educational variables



- Learner reaction
- Knowledge
- Skills
- Attitudes
- Behaviour
- Outcomes

# Operationalising variables: Definitions for learner reaction



Variable	Definition (referenced papers)
Learner reaction	Satisfaction <sup>3,12, 18</sup> ; interest <sup>7</sup> ; clinical interest <sup>18</sup> ; academic interest <sup>18</sup> ; enjoyment <sup>14, 18</sup> ; collegiality <sup>7</sup> ; social forum <sup>17</sup> ; discussion of issues <sup>7</sup> ; perceived value of teaching appraisal <sup>3,13</sup> preparation value <sup>13</sup> ; perceived clinical value <sup>13</sup> ; perceived impact on work <sup>6</sup> ; appropriate timing <sup>13</sup> ; effectiveness of teaching modality <sup>16,17</sup> ; mentor system <sup>17</sup> ; teaching objectives met <sup>16</sup> ; attendance <sup>18</sup>



# Validity of learner reaction



- Most learner reaction variables were defined by the researchers, so do they reflect what participants thing is really important?
- Descriptive (Qualitative?) research lacked empirical data

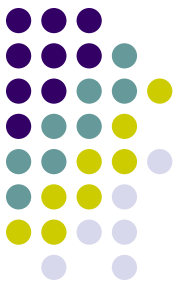


# Missing variables?

“What makes a journal club successful?”

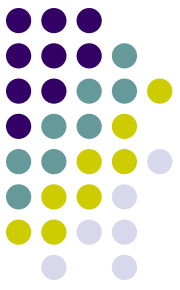
- Interest among residents → Social and professional context
- Selection of articles → Relevance
- Interest among faculty → Mentoring support
- Discussion of complex/controversial issues → Promoting expression of uncertainty
- Research experience of the leader and the participants → Quality and level of participation

# Operationalising variables: Definitions for knowledge and skills



Change in knowledge	Clinical epidemiology and biostatistics (offered prior to or integrated with club) <sup>4,9,10,17</sup> ; principles of EBM; knowledge of research methodology <sup>9</sup> ; keeping up with current literature <sup>1</sup> ; expansion of knowledge base <sup>5</sup> ; development of an area of expertise <sup>15</sup> .
Change in skills	Access literature <sup>5</sup> ; understand literature <sup>5</sup> ; formulate questions <sup>5</sup> ; Critical appraisal skills <sup>6,8,10,11,12,16,17</sup> ; self assessment of critical reading skills <sup>10</sup> ; apply reading to a clinical case scenario <sup>6</sup> ; ability to determine clinical usefulness of a study <sup>15</sup> ; analytic skills <sup>15</sup> ; Presentation skills <sup>15</sup>

# Operationalising variables: Definitions for attitude, behaviour and outcomes



Change in attitude	Attitudes toward medical literature <sup>7</sup> ; workload <sup>3</sup> ; confidence to critically evaluate papers <sup>1,8,14</sup> ;
Change in behaviour	Change in reading habits <sup>15</sup> : Enhancement in reading habits <sup>1</sup> ; Number of assigned articles that were read <sup>3</sup> ; Time spent reading <sup>2,16</sup> ; number of journals read <sup>2,10,12</sup> ; different journals read <sup>10</sup> ; journals most frequently read <sup>16</sup> ; number read vs skimmed <sup>10</sup> ; time taken to review an article; use of literature in clinical practice <sup>11</sup> Change in sources of knowledge used <sup>6</sup>
Change in outcomes	No patient outcomes measured

# Operationalising variables: Level of measurement



Variable	Type of measure	
Learner reaction	Self-reported (10) 3, 6,7,10,12,13,14,16,17,18	Observed attendance (2) 3,18
Knowledge	Self-reported (4) 1, 5,15,17	Objective tests (3) BUT Not validated 4,9,10
Skills	Self-reported (7) 5,8,10,11,12,14,15	Critical appraisal tests (4) 2, 6,8,12  Case scenario test (1) <sup>6</sup>
Attitudes	Self-reported (5) 1, 3, 7, 8, 14	
Behaviour	Self-reported (9) 1,2, 3, 6,10,11,12,15,16	

# Was the ability of journal clubs to support clinical applicability evaluated?



- Clinical applicability includes
  - the process of discussing whether journal information is applicable to a clinical situation (Appraise)
  - the ability to apply literature to clinical practice (Apply)
- 10 studies included clinical applicability as an aim of the journal club
- 12 studies included it in the evaluation





- **Appraise: applicability evaluated during critical appraisal**

- The attending coordinator and other faculty summarize the lessons to be learned both in terms of study design and clinical practice 3
- Appraise and assimilate evidence leading to improvement in patient care 10
- Ability to determine clinical usefulness of an article 4, 7,15
- Evidence sufficient enough to influence practice 8,9

- **Apply: self reported changes in practice**

- Improved ability to apply reading to patient care 5, 11
- Taught 'analysis of clinical practice' 3
- 'It provided me with information that I have been able to apply in my clinical practice' 13
- Self-reported change in utilising literature in practice 11
- Self-reported alteration in clinical practice: 'It had an impact on my work' 6,17

# Levels of educational effectiveness: time for a new approach



1. Reaction or satisfaction
2. Participation and/or completion
3. Learning or knowledge
4. Health professionals' behaviour or performance
5. Healthcare outcomes

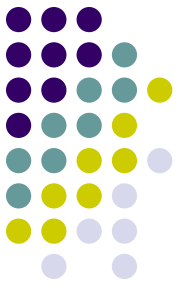
Belfield et al 2001 Adapted version of Fitzpatrick's hierarchy



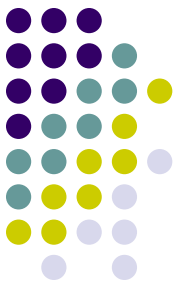
# Recommendations for better research on journal clubs



- Provide a justification for the effectiveness measures
- Explicitly describe the effectiveness measures
- Match the research question to the aim of the intervention, to the effectiveness measure, and to the level of effect
- Relate the study design, findings and discussion to pedagogical models and theory
- Clarify the relationship between learning and performance
- In quasi-experimental studies, discuss the threats to internal validity
- In qualitative studies, support conclusions with data



<http://www.norphoto.com/r/nor20.php>



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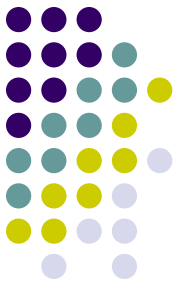
# A different focus for evaluation of getting evidence into practice



- What works for whom in what circumstances? (Pawson & Tilley)
  - The impact of educational interventions will vary depending on the conditions where they are introduced
  - How and under what circumstances will an educational intervention have an impact?
  - What are the right conditions for introducing a journal club?



# How might a journal club support learning and evidence based decision making?



- Two part question
  - 1. Supporting learning
    - Context
    - Mechanism
    - Outcome
  - 2. Learning that supports evidence based decision making
    - Context
    - Mechanism
    - Outcome
- Assumed causal pathway

