Quality Circles

a realist approach
DPhil Project
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Quality Circles (QC) in Primary Care

"Small Groups of Health Care Professionals who meet at regular intervals to increase and disseminate knowledge"
practice based small group, peer review group, problem based small group learning, practice based research group, quality circle, CME group, CPD group
Do QCs work?

"overall effect"
- Change in prescription habits
- Change in test ordering (doctors become more specific)
- Systematic Review

"components"
- Facilitation (Dogherty et al., 2010; Baskerville et al., 2012)
- Workshop (O'Brien, 2001; Forsetlund, 2009)
- Outreach visits (O'Brien, 2007)
- Audit and feedback (Ivers, 2012)
- Use of local opinion leaders (Flodgren, 2011)

! performance varies substantially!

Question

Why and How do QCs work???
Philosophies of Knowledge

- Positivism
- Realism
- Constructivism

Research philosophy: **Realism**

Based on a belief that reality exists, independent to human thoughts and beliefs

- Social phenomena, external to or independent of individuals affect the way people perceive their world, whether they are aware of them or not
- Shares some philosophical aspects with positivism
  
  **Realism aims to explain knowledge through theories**

PS: Social research is often a mixture between positivism and interpretivism, reflecting the stance of realism

Realist Approach

- **Systematic Review:**
  Aggregation of data

- **Realist Review:**
  Comparison of mechanisms to develop theories explaining the programme:
  
  when, how and why do they work

  "Mixed Methods Review": parallel convergent design with a realist interpretation
Realist Interpretation of QCs

• Causal power lies in the Mechanism
• Whether the Mechanism is triggered depends on the Context
• The Mechanism generates the Outcome!

What is the use of theory (Funnel and Rogers 2011)

Description
  • Describing a phenomenon or event e.g. 'This is what happened'

Explanation
  • Looking at the reasons for a phenomenon or event e.g. 'This happened because of…'

Prediction
  • Hypothesizing that a phenomenon or event will produce a particular outcome e.g. 'If you do this, then this will be the outcome'

Control
  • Using the pattern between cause and effect to alter a situation to achieve the desired outcome e.g. 'When I choose this variation of the program, then the outcome will be so and so'.

Realist Review: concept

What works for whom under what circumstances?

• Identification of the basic logic (theory) behind QC
• Identification of CMO configurations and patterns
• Identification of Demi-Regularities
• confirmation or refining the theory
Steps of a Realist Review (Pawson, 2006)

- Identifying the review question
- Several phases of search
- Identification / Selection and Quality appraisal
- Extracting the data
  - Analysing the Data
    - Looking for Explanations
    - Comparing and Contrasting Explanations
  - Synthesis

FIRST Step:

- Preliminary Theory
- Focussing the research question
**Time Frame:** History

**Origin and concept:**
- combination of PBL and Principles of CME/CPD/QI
  - Quality Circles
- Two centres: Mc Master 1974 Nijmegen 1979

**Knowledge to Action Cycle**

**Underlying Theories**
- Group and Facilitation Theories
- Theories about Knowledge in Groups
- Quality Improvement
- Theories concerning Knowledge / Evidence
- Theories about Action and Motivation
- Theories concerning the Setting
Stakeholders: 1st Interview

- help me understand the programme
- Stakeholders' view of underlying theories
- Stakeholders’ expectations of the review

**FOCUS THE REVIEW QUESTIONS**

**OFFER A PRELIMINARY PROGRAM THEORY**

<table>
<thead>
<tr>
<th>Questions important to stakeholders</th>
<th>Networks</th>
<th>SAPM</th>
<th>SAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Programme Features</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
</tr>
<tr>
<td>Most stakeholders seem to</td>
<td>have the same understanding</td>
<td>of the programme</td>
<td></td>
</tr>
<tr>
<td>Implementation Chain</td>
<td>+++</td>
<td>+++</td>
<td>++</td>
</tr>
<tr>
<td>All stakeholders want to</td>
<td>know more about variations</td>
<td>of the programme</td>
<td></td>
</tr>
<tr>
<td>Programme is changed by</td>
<td></td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Decision-makers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contextual Influences</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
</tr>
<tr>
<td>IMPORTANT</td>
<td>TO</td>
<td>ALL</td>
<td></td>
</tr>
<tr>
<td>All stakeholders are</td>
<td>shaped by previous or co-existing service delivery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Habituation, self-defeating or self-affirming effects</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Cycle of QC</td>
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**Questions**

*Why and How do QCs work?*

- How do configurations of components and their underlying mechanisms within Quality Circles influence their outcomes?
- How do contextual features surrounding Quality Circles improve individual and/or group performance?
SECOND Step: Search

Search Strategy
- Primary Care TERMS
- Program TERMS
- Quality Improvement TERMS
- Group TERMS
- Grey and Training Literature

1885 Hits (without dup) 57 out of 68 key papers

- Medicine
- EMBASE
- PsycINFO
- CINHAL

Ireland
Scotland
Germany
Switzerland

THIRD Step:
Identification / Selection and Quality appraisal
Relevant Information

• Use of sifting Questions for Identification
  – Suitable article are:
    • context of primary healthcare
    • structured small group work or facilitator

• Use of sifting Questions for Selection
  – Suitable articles are:
    • Information about evaluation OR
    • Qualitative Data about QC

Results

<table>
<thead>
<tr>
<th></th>
<th>Overlap</th>
<th>Discussion</th>
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<tbody>
<tr>
<td>JH</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td>ADR</td>
<td>51</td>
<td>25</td>
</tr>
<tr>
<td>JH/ADR</td>
<td></td>
<td>40</td>
</tr>
<tr>
<td>SM</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>ADR</td>
<td>43</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>49</td>
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Credible and rigorous sources of information

Tool: MMAT (mixed method appraisal tool)
✓ Type of study
✓ Criteria of quality

Theory Coherence:
✓ Reporting of the theory
✓ Analysis according to stated theory
✓ Relation to other papers of the cluster
Concept Description (Booth, Harris 2013)

### Cluster searching
A systematic attempt, using a variety of search techniques, to identify papers or other research outputs that relate to a single study. This relation may be direct (i.e. “sibling” papers produced from the same study) or indirect (“kinship” studies that inform theoretical or contextual elements of the study of interest).

### Key pearl citation
A key work in a topic area, specifically in this context a report of a research study that acts as a retrieval point for related outputs that may help to explicate theory or to understand context.

### Kinship study
A study subsequently identified as being related to an original study of interest. Kinship studies may share a common theoretical origin, links to a common antecedent study or contemporaneous or spatial context.

### Sibling paper
A paper subsequently identified as being an output from the same study as an original paper of interest.

### Study cluster
A group of inter-related papers or other research outputs that relate to the same single research study.

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**Paper Flow: 89 papers**

**Excluded**
- Double reporting 4
- Q Criteria not fulfilled: 32
  - NOT QCI: No relevance!
  - No evaluation
  - Description of the program without data
  - Partial evaluation
  - BG Paper (<reviews>)

**Additional Search**
- «search for kinship»: 23
  - Backward and forward citation «key papers»
    - Web of Science
    - Google Scholar
    - Contacts with stakeholders

*All in all 76 papers*
FOURTH Step: Data Extraction

Data Extraction Sheet
• Author, Year
• Country
• Study design:
  • setting
  • Number in group,
  • professional backgrounds
  • QC Frequency
  • Participation, voluntary, mandatory
  • Financial compensation, link to mandatory
  • Group dynamics
• Didactic and QI technique
  • Facilitator’s role
  • Facilitator skills, training
  • Profession of facilitator
  • Autonomy of re process
  • Autonomy re issue choice
  • Written summary, minutes
  • QC purpose
  • Evaluation purpose
  • Evaluation tool
  • Outcome, results
  • Mechanisms

FIFTH Step: Data Analysis
**1st Level of Analysis**

- Author / Year: circumstances / contextual features
- Activities
- Feelings / activated resources / attitudes (M)
- Outcomes (quant OR qual)

\[
C_{1-x} \quad M_1 \quad M_2 \quad M_3 \quad O_{1-x}
\]

Possible outcome chains and any variations

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**2nd Level of Analysis:**

- Take a key pearl citation to use as a basis for propositional statements!

➤ Aim: Comparison of contexts, activities, possible M and outcomes across studies

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?Developing a theory?

- List of process outcomes
- List of activities
- Look for Mechanisms
- Study contexts

Each summary statement is a mini theory

?Developing a program theory? - «process outcome chain»

- People formulate possible improvements and decide on continuous action plan.
- Increased knowledge about applicability of data in own practice
- Implementation of new knowledge is considered
- Increased knowledge about applicability of data in own practice
- Growth in professional role
- Training of communication skills
- Awareness of uncertainty and ability to reflect
- Group meeting takes place
- Regular group meetings take place
- Active participation
- Job satisfaction improved
- Protection against burnout
- Supportive and understanding culture / sense of collegiality / feeling of trust
- Enjoyment in activity increases
- Reflective thinking on how and why something is done
- Learning environment
- Awareness of uncertainty and ability to reflect
- Implementation of new knowledge / CME / CPD / QI
Process outcome: Interactive learning and personal reflection on action

Activities: clinical cases are presented and different opinions discussed. The facilitator involves all QC members with an appropriate balance between comfort and challenge, depending on what level of trust the group has reached.

Mechanisms: “Reasoning”
M1 Previous knowledge is activated through case discussions.
M2 The group supports and rewards exploratory behaviour by giving the feeling of competency, which enables participants to describe what they actually do.
M3 People are motivated to imitate those peers who are more competent and then receive positive feedback.

Summary statement:
Case discussions as a basis of challenging each other’s position enable the group to reflect on their practice and to learn from each other in a cooperative atmosphere of mutual understanding.

If clinical cases are presented and different opinions discussed
then interactive learning and personal reflection on action take place
provided that the facilitator involves all QC members with an appropriate balance between comfort and challenge, depending on what level of trust the group has reached.
Results: Reflection of Knowledge

Knowledge: 
- Knowledge is creational and based on distinction making in observation
- Knowledge is history dependent and thus is context sensitive
- Knowledge is not directly transferable

Participants create their own version of new knowledge (Duality of Knowledge, Hildreth 2002)

Knowledge: 
- Knowledge is representation of a pre-given reality
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Results: Reflection of Knowledge

Knowledge: autopojetic «constructivist»
- Knowledge is creational and based on distinction making in observation
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Participants create their own version of new knowledge (Duality of Knowledge, Hildreth 2002)

Knowledge: representational «positivist»
- Knowledge is representation of a pre-given reality
- Knowledge is unchanging, universal and objective
- Knowledge is directly transferable
Consequences: «what makes people reflect?»

- Own case discussions are key!
- Case discussions with Local opinion leaders
- Videos representing a typical patient
- Diagnostic patterns and prescription habits:
  - often used in studies (measurable results!)
  - Results improve if combined with case discussions!
  - Results improve if people gather own cases!

!Better understanding!

- EQUIP workshop
- Stakeholders: 2nd Interview
  - propositional statements:
    - plausible
    - applicable
3rd level of analysis

- broader social science theories
  - 1) theories of adult learning, social learning (social cognitive theory) and problem-based learning,
  - 2) theories on behaviour change individual practitioner / group
  - 3) theories related to implementing research in health

Interests

- Program Theory for monitoring and evaluation
- Program Theory for evidence based policy
- Program theory to engage colleagues because of shared understanding and improved communication