Combining Normalisation Process Theory and logic modelling to enhance impact in a complex intervention: a critical reflection

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Aim and outline of presentation

To reflect on the background to some of the issues around the theory-practice gap

To talk about:

- How Normalisation Process Theory (NPT) can provide a framework to understand some of these issues
- How NPT can be used with a logic model
- What might be achieved with this approach

What is the problem?

Theory – practice gap

Complex interventions in public health, even when devised from high-quality, trial-based evidence, often fail to achieve expected outcomes and impact in practice.

Why is the research important?

So that finite resources produce the best overall outcomes

What do we already know?

Over-reliance on a positivist ontology and epistemology using trial methodologies to study complex, public health interventions

Fletcher et al., 2016; May, 2006; Moore et al., 2014; Straus, 2009; Walton 2016; Zapka et al., 2004

The research question

How can NPT help explain the theory-practice gap?

Definition of a complex intervention

“What is a complex intervention?

While ‘complex interventions' are most commonly thought of as those which

- contain several interacting components (1),
- ‘complexity’ can also relate to the implementation of the intervention (2)
- and its interaction with its context (3).”

Process evaluation of complex interventions Moore et al. (2014) p19

Dimensions of complexity

"Some dimensions of complexity

- Number of and interactions between components within the experimental and control interventions
- Number and difficulty of behaviours required by those delivering or receiving the intervention
- Number of groups or organisational levels targeted by the intervention
- Number and variability of outcomes
- Degree of flexibility or tailoring of the intervention permitted."

Developing and Evaluating Complex Interventions (update) Craig et al. (2019)

Complexity and research method

"Implications for development and evaluation

- A good theoretical understanding is needed of how the intervention causes change, so that weak links in the causal chain can be identified and strengthened …
- Ensuring strict fidelity to a protocol may be inappropriate; the intervention may work better if adaptation to local setting is allowed."

Craig et al. (2019)

Process evaluation

Key functions of process evaluation:

Context – overarches everything

Description of intervention and its causal assumptions

Implementation – how delivery is achieved

Mechanisms of impact

Outcomes

Process evaluation of complex interventions Moore et al. (2014) p12

Logic Model (Kellogg, 2004)

INPUT PRE-STUDY RESOURCES	ACTIVITIES & PROCEDURES	OUTPUT	SHORT-TERM OUTCOMES	LONG-TERM OUTCOMES
Pilot work Statistics Guidance Money Equipment	Usual care plus the intervention	The expected change	Measure of short-term change	Measure of long-term change

What is NPT?

- Mid-range theory
- A way to understand how new practices become normalised
- Designed to be used in institutional/organisational settings e.g. healthcare
- For use with qualitative and quantitative data

- NPT aims to provide a way to “understand the collaborative ‘work’ that needs to be done for a new intervention to become embedded within a given context” (Finch et al. 2014)

Where did NPT come from?

- Carl May and Tracy Finch co-developed NPT
- First paper – 2003
- Explored NPT in telemedicine, then patient compliance
- Released NPT to be used in whatever way researchers want to apply it, a tool that is still evolving

Core constructs of NPT

Four core constructs within NPT:

- coherence,
- cognitive participation,
- collective action
- reflexive monitoring.

Normalisation is affected by factors that promote or inhibit routine embedding.

Definitions of core constructs

1. Coherence – sense-making work (meaning)
2. Cognitive participation – relationship work (commitment/buy-in)
3. Collective action – enacting work (action)
4. Reflexive monitoring – appraisal (formal and informal)

babyClear© as an example

What is babyClear ©?

Enhanced stop smoking service intervention to support pregnant women to quit

Evaluation used a natural experimental design.

It had two parts: effectiveness/quantitative (Newcastle University);

process/qualitative (Teesside University).

NPT used to inform the process evaluation of the implementation of babyClear©.

What did we find? Using NPT for process evaluation

Coherence ✓

Cognitive participation ✓

Collective action – varied

Reflexive monitoring - varied

“ Conclusion … The ongoing challenge is to identify and maintain the elements of the intervention package which are essential for its effectiveness and how to tailor them to local circumstances and resources without compromising its core ingredients.”

Jones et al. (2019)

Combining logic modelling and NPT (1)

What did I do?

Retrospectively drew up a logic model

Described the contexts

Worked out from the literature what the links or mechanisms were expected to be

Compared the logic model with what actually happened

Identified from the data the actual mechanisms and active ingredients that were essential

Analysed them thematically using NPT core concepts.

Combining logic modelling and NPT (2)

What did I find out?

Logic modelling and NPT are adaptable and flexible and can be combined

Able to reduce theory-practice gap by identifying the detailed theory of change

NPT was not fully able to comprehend the context

Combining logic modelling and NPT (3)

Would I recommend it as a method?

MRC guidance practical and helpful ✓

Logic modelling useful to paint broad picture ✓

BUT … Logic modelling requires more to tease out mechanisms

NPT common sense theory ✓

BUT … NPT requires further development in relation to context

Both are flexible and adaptable and work together

Context and NPT

Context refers to: "factors external to the intervention which may influence its implementation, or whether its mechanisms of impact act as intended."

(Moore et al., 2014, p8)

- Extended NPT (eNPT)

- elasticity

(capacity to mould interventions to fit context)

- plasticity

(capacity to mould environment to allow intervention)

May, Johnson & Finch (2016)

Conclusion

Realist approaches are required to gain a fuller understanding of the process of implementation

Normalisation Process Theory (NPT) can provide a framework to understand the process of embedding

NPT can be used with a logic model

Combining them allows for the detail of the mechanisms and active ingredients to be clarified, practitioners can then be better informed, thus reducing the theory-practice gap

NPT and thinking around understanding the implementation of complex interventions continues to evolve.

References

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Teesside University

Thank you for listening

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How well did it work out in data collection?

Strengths

- Easy flow
- Gave a common-sense structure to interviews
- Leant itself to answering our research questions

  (assessing acceptability, fidelity and sustainability from a staff perspective)
- Created questions that participants had plenty to say about
- Flexible, used it to meet our requirements

Limitations

- Not many similar examples to follow

What about the data analysis stage?

Strengths

- Neat set of *a priori* codes for Framework Analysis (Ritchie et al. 2003)
- No bar to inductive analytical methods

Limitations

- Definitions of sub-categories rather difficult to remember