Workshop session: Using Qualitative Research Embedded in Behavioural Trials

Montreal, May 25th 2018

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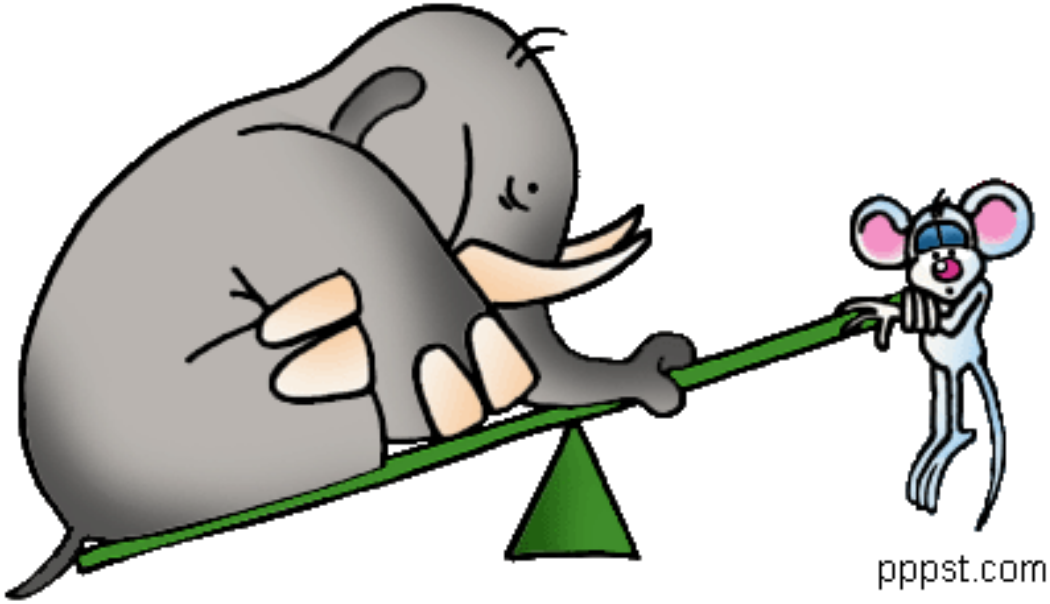
Welcoming agenda

- Introductions and expectations
- Positioning myself
- Topics to be discussed
- Expected interaction during the workshop



Purpose and objectives

Purpose

- To encourage reflective thinking about good practices regarding qualitative (QL) research embedded in behavioural trials

Objectives

- Discuss the strengths and weaknesses of both quantitative and QL research designs
- Consider key decisions and major steps in bringing together quantitative and QL research
- Identify the key components of a QL study embedded in a trial

What is research about?

QUANTITATIVE RESEARCH

Key strengths
• It is useful for studying large populations • Allows testing hypothesis and validating already theories • Data collection is relatively quick • Provides precise, manageable, numerical data • Data analysis is less time consuming • Facilitates the generalisation of findings • May have higher credibility among people in decisional-making positions • Finding are helpful to support informed decisions • Avoids biases related to confounding factors, selection bias, and interpretation bias • Administrated treatments can be compared

(Creswell, 2009)

QUANTITATIVE RESEARCH

Major weaknesses
• Selected theories may not reflect local understandings • Power calculation might demand vast samples sizes • Validity requires multiple sites • Long trial run time may result in the loss of relevance as practice may have moved on by the time the trial is published • Allocation of participants may be predictable and result in selection bias when the study groups are unmasked • Trials which test for efficacy may not be widely applicable; trials which test for effectiveness are larger and more expensive • Results may not always mimic real life treatment situation • Ethically, patients have to receive equal treatment support in the clinical community

(Creswell, 2009)

QL RESEARCH IS…

"Quality is the **essential character or nature** of something; quantity is its amount. Qualitative refers to the **meaning**…while quantitative assumes meaning and refers to the measure of it." (Dabs, 1982)

"The ultimate outcome of qualitative research is to **describe the sense of meaning** that researchers have made of what has been investigated…. "QR is a description of what has been observed plus something special in the nature of the **interpretative emphasis**." (Walcott, 1985, 1992)

"Ethnography is the **description and understanding of a culture** from a native or insiders point of view (emic)." (Spradley, 1980).

In brief

- Qualitative research is **naturalistic inquiry**, because the data collection strategies used are interactive to discover **the natural flow of the events and processes**.

- Most qualitative research deals with **people's individual and collective social actions, beliefs, thoughts, and perceptions**.

(Denzin & Lincoln, 2011)

QL RESEARCH

Key strengths
• Small populations studied in-depth • Participants' meaning are at stake • Data is inductively generated • Collects data in naturalistic settings • Description is rich • Provides the grounds to generate a new interpretation • Useful for describing a phenomenon • Allows to better understand the individual experience • A sense of 'story' can be (re)created • Takes interpretation into account • Offers room for reflective thinking • Responds to local challenges

(Creswell, 2009)

QL RESEARCH

Major weaknesses
• Knowledge is local and may not be generalised • It is difficult to make predictions • Theories and hypothesis cannot be tested • It is time consuming • Might have lower credibility among decision makers

(Creswell, 2009)

QUANTITATIVE VS QL RESEARCH

Quantitative Research	Qualitative Research
Prediction	**Understanding**
Starts with hypotheses	**Starts with foreshadowed / tentative question**
- Deductive - Contrived context - Positivist - Often based on a priori theories, empirical results	- Inductive - Naturalistic context - Constructivist: post positivist - Often based on experience
Hypotheses	**Research question about a phenomenon**
- Narrow focus	- Broad focus

(Tashakkori & Teddlie, 2010)

QUANTITATIVE VS QL RESEARCH

Statistical analyses	**Analysis of words and actions** - Thick description based on words of observer and participants
Subjects - Random / Stratified	**Sample of cases (bounded)** - Purposive sampling
Procedures and measures fixed in advance of study	**Unit of analysis relevant to the phenomenon of study** - Language - Activities or Events - Processes
Interpretation based on - Numbers: normal distribution of scores - Statistical significance	**Interpretation based on** - Words, Patterns - Participants' actions / views / memories / inferences / feelings
Reliability of measures **Validity of measures** **Generalizability**	**Reliability of observations** **Trustworthiness of data** **Triangulation of multiple data sources** **Naturalistic generalization**

(Tashakkori & Teddlie, 2010)

IS IT POSSIBLE TO MIX DATA?

Yes, well, I think that is a possible option, but you know, it's hard to say when you don't really tried other options… Do you know what I mean? Do you follow me? I am not sure, I don't know. I think it is possible, but it's hard to be 100% sure.	12387984312165468798798465135132135468798765654321321354649879798435132132135467987921321654654654698765132131354684879876513213464987987654312321654654687987654321321654649879876845313213213546546546546549

Mixing data

Three main arguments

- Compatibility thesis
- Pragmatist philosophy*
- Fundamental principles of mixed methods research

(Tashakkori & Teddlie, 2010)

Rationale for mixing

Practical reasons

- Generating evidence of effectiveness
- Approach the research problem
- Dynamic between mechanism of action and implementation
- Considers the context
- Save time and money
- Provides responses regarding the relevance of a given implementation
- Provides the users' perspective, key to decision-making and policy implementation

(Tashakkori & Teddlie, 2010)

Rationale for mixing

In addition, mixing research methods seeks to achieve…

- Triangulation
- Complementarity
- Development of a new position statement
- Initiation of new perspectives
- Expansion of breath and range of inquiry by using different components

(Tashakkori & Teddlie, 2010)

Do we have a couple?

The research continuum

Mixed model → Mixed methods

(Tashakkori & Teddlie, 2010)

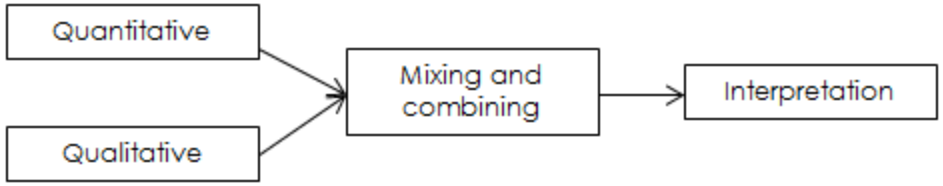
COMMON NOTATION AND MEANING

Notation	Meaning	Example
Upper and lower cases	**Emphasis given to a method**	***qual*** **Qual** **QUAL**
+	**Concurrent methods**	**QUAN + QUAL**
→	**Sequential methods**	**QUAL → *quan***
( )	**Embedded study**	**QUAN (*qual*)**
→ ←	Recursive	Quan →← QUAL
[ ]	Study within a series	QUAL → [QUAN + *qual*]

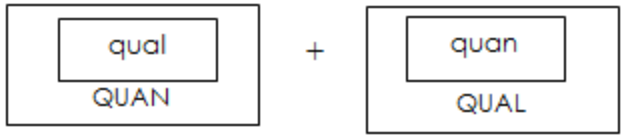
(Creswell & Plano Clark, 2011)

CONCURRENT DESIGNS

(a) Concurrent triangulation design

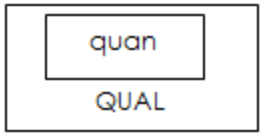


(b) Concurrent embedded design



(c) Concurrent transformative design

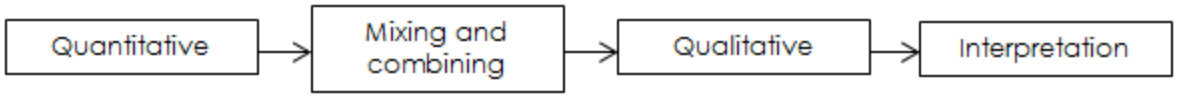
QUAL + *quan* OR



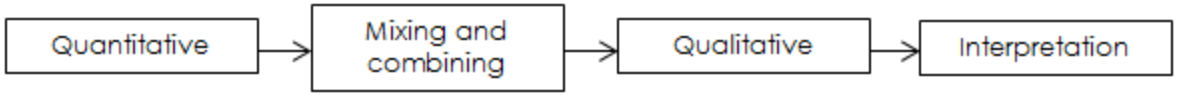
(Creswell, 2009)

SEQUENTIAL DESIGNS

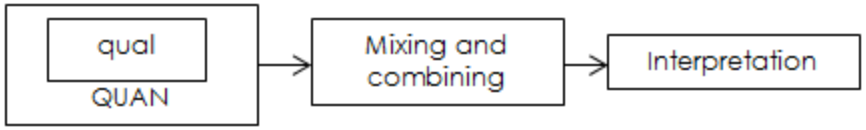
(d) Sequential explanatory design



(e) Sequential explanatory design



(f) Embedded design



(g) Transformative design

QUAL + *quan* OR QUAN + *qual*

(Creswell, 2009)

The research process

Key steps

- Determine the appropriateness of an embedded study
- Determine the rationale for using such a design
- Select the type of research design that will combine quantitative and QL methods
- Collect data
- Analyse data
- Validate data
- Interpret data
- Write the research report

Common QL designs

Phenomenology	Lived experience
Case Study	Detailed account of one ore more cases
Ethnography	Culture of a group
Narrative	Narration of a series of events
Grounded Theory	Understanding of a process & generation of a theory from collected data

Qualitative description
Framework approach

(Creswell, 2013; Neergaard et al., 2009; Ritchie & Spencer, 2002)

Focusing the study

P urpose

A im

G oal

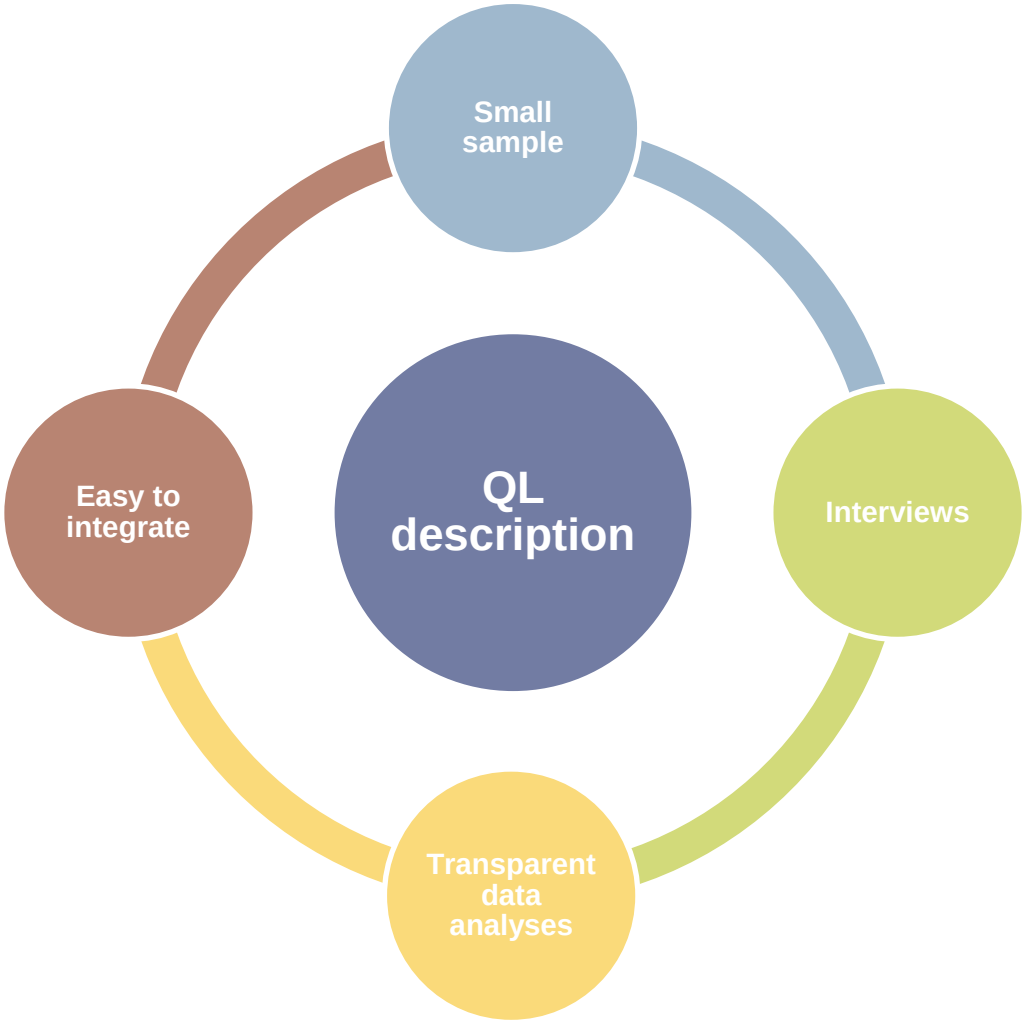
O bjective

- Main study vs. embedded study
- Examples: understand, explore, comprehend, investigate, describe

Research (open-ended) questions

- What? How? Why?

Towards a manageable QL design



(Neergaard et al., 2009)

Data collection and analyses

SAMPLE / PARTICIPANTS

Characteristics

- Purposeful/criterion-based → **purposive sample**

Size

- **Redundancy** and consistency & theoretical saturation
- **A different view** on a certain subject
- **Emergent concepts**

(Neergaard et al., 2009)

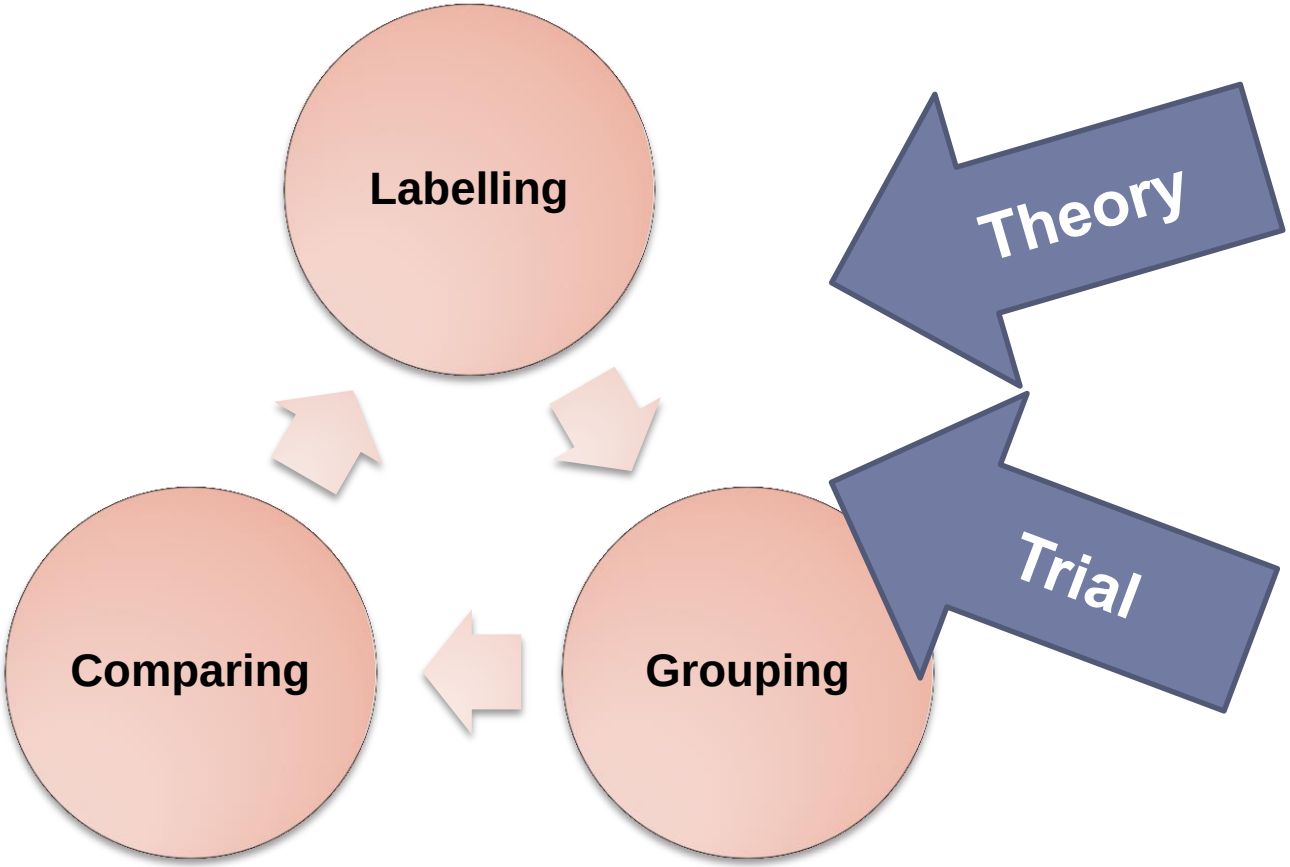
Data collection

Instruments

- **Interviews**: in-depth open-ended, non/semi-structured, informal conversation, **guided approach**
- **Focus groups interviews**
- Observation
- Analyses of documents

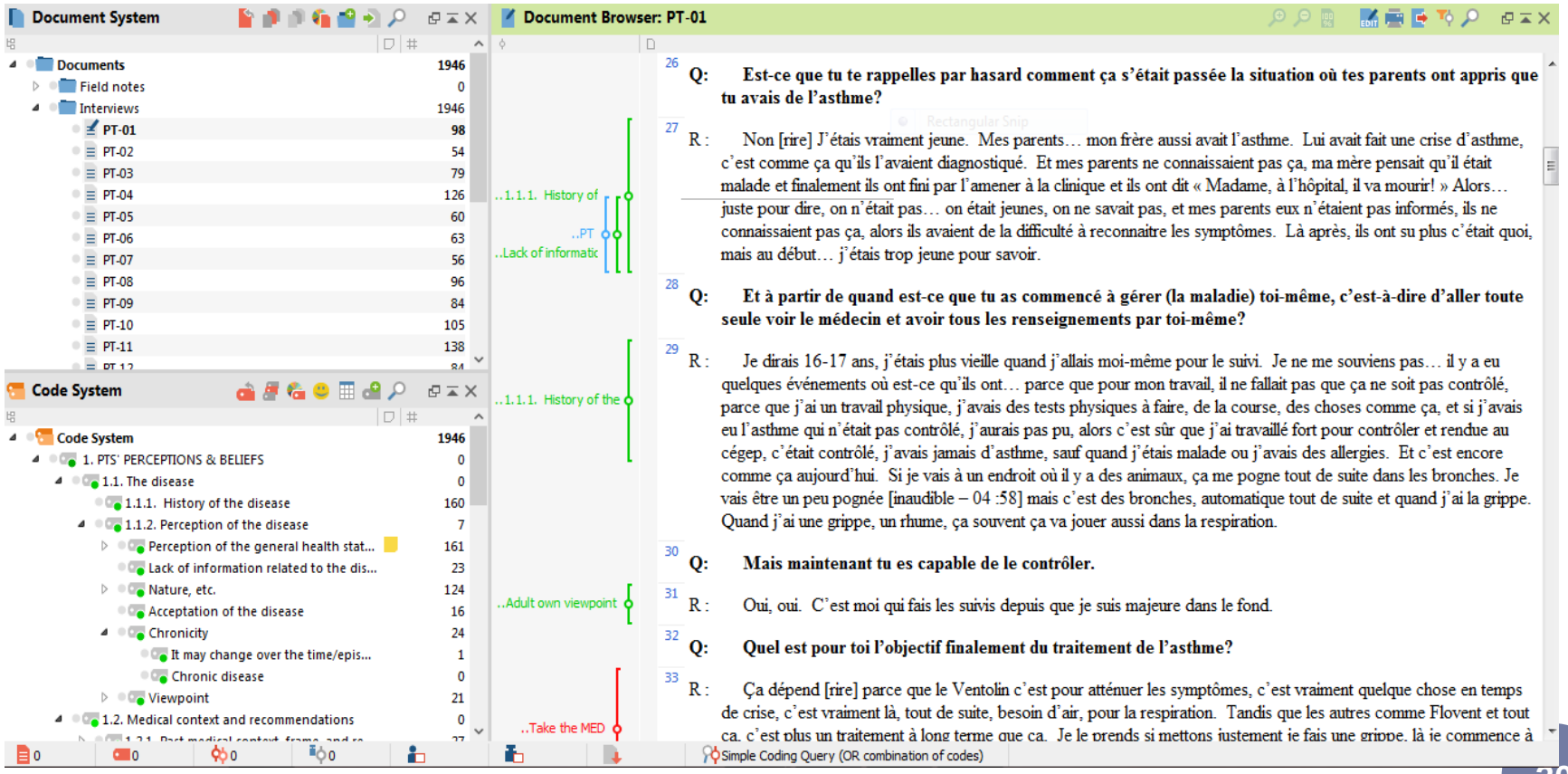
(Neergaard et al., 2009)

Data analyses



(Neergaard et al., 2009)

USING SOFTWARE



(Neergaard et al., 2009)

Reduction of data

VALIDITY

- Trustworthiness
- Coherence and cohesiveness

Criteria	Definition	Techniques
Credibility	Confidence in the 'truth' of the findings	Prolonged engagement Persistent observation Triangulation Peer debriefing Negative case study Referential adequacy Member-checking
Transferability	Applicability in other contexts	Thick description
Dependability	Repetition in other context	Inquiry audit
Confirmability	Neutrality	Confirmability audit Audit trail Triangulation Reflexivity

(Lincoln & Guba, 1985; Sparkes & Smith, 2009)

INTERNAL COHERENCE

1. Research project frame
1.1. (Philosophical assumptions)
1.2. Theoretical framework
1.3. Methodological assumptions

2. Need for the study
2.1. Purpose
2.2. Research question
2.3. Research aims

3. Methods
3.1. Overall design
3.2. Sampling
3.3. Data collection
3.4. Data reduction/analysis
3.5. Data interpretation and warranting conclusions

4. Representing research
4.1. Writing

The written report

An example

Quantitative	QL
8 in 10 Canadians are not active enough	
8 in 10 Canadians think physical inactivity is a serious health issue	
56% of Canadians think they should not change much to be active	
82% of Canadians think that the only way to be active is to turn it into a habit	

https://www.participaction.com/en-ca/pulsereport

Potential value of mixing data

Category	Potential value	Examples
Bias	Avoids measurement bias	Helps test face and content validity of instruments in the relevant patient group
Efficiency	Ensures faster recruitment	Uses observation and interviews to identify problems with recruitment in a specific trial
	Saves money	Stops attempts at full trials of poor or unacceptable interventions, or unacceptable trials designs
Ethics	Ensures sensitivity of trials to human beings in trials	Ensures that recruitment and communication strategies can pay attention to health professionals and patients so that the experience is positive for them
	Improves informed consent	Challenges current assumptions about gold standard informed consent, or value of information vs. value of communication
Implementation	Facilitates replicability of intervention in the real world	Describes components of the intervention so that others can make use of the full intervention in the real world
	Facilitates transferability of findings in the real world	Identifies contextual issues important for success
Interpretation	Explains trial findings	Explains why trials were null; this may prevent another trial of a similar intervention. Contextualises results of successful trial to support dissemination and transferability in real world
Relevance	Ensures interventions meet the needs of health professionals and patients	Identifies value of intervention to important stakeholders. Ensures intervention is culturally appropriate
Success	Makes a trial successful, feasible, viable	Engenders stakeholder support for the trial. Makes a trial locally appropriate to cultural needs
Validity	Improves internal validity	Ensures the correct measures are used to measure the correct outcomes
	Improves external validity	Helps to understand how to broaden recruitment to include hard-to-reach groups

(O'Cathain et al., 2014)

Attention: major challenge

Move: http://vimeo.com/27246366

Fancy a hands-on exercise?

‘Mixing’ is possible

Useful resources

- QuinteT Recruitment Intervention (https://www.bristol.ac.uk/population-health-sciences/research/groups/social-sciences-health/quintet/interventions/)
- Health Research Board – Trials Methodology Research Network (https://www.hrb-tmrn.ie/)

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