

Questionnaires are not like blood tests: the art and craft of measurement in psychotherapy

Chris Evans





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ORIGINAL ARTICLE

WILEY

Clients with different problems are different and questionnaires are not blood tests: A template analysis of psychiatric and psychotherapy clients' experiences of the CORE-OM

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Abstract

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Funding information

Dirección General de Investigación, Universidad de Las Américas, Quito, Ecuador, Grant/Award Number: PSI. CPE.18.05 Aim: To explore the constructions users of mental health services have of outcome and change measures, contrasting those of hospital psychiatric patients with psychotic experiences versus psychotherapy clients in private practice who have not had psychotic experiences.

Method: Twenty-four participants, 12 from each setting, were interviewed about their experiences when answering the Clinical Outcomes in Routine Evaluation-Outcome Measure. Template analysis was used to analyse transcripts from a pragmatic and contextualist position.

Findings: Participants from both settings understood all the items of the CORE-OM and generally saw it as useful to assess the psychological distress and to appreciate the progress within the treatment. However, experience of emotions such as sadness and hopelessness, a focus on functioning and an emphasis on impartiality of the person who offers the questionnaire were themes that emerged only for the hospital participants. This is the first study explicitly comparing the experiences of two types of users of mental health care services when answering the CORE-OM; with the increasing routine use of change measures, reactions of these groups to such measures need to be explored in more detail qualitatively as well as quantitatively. Clinicians in all settings should think carefully about the explanations for the use of change measures, being sure that they address the primary concerns of participants. Scores are not like blood test results, and they arise in the relational context, a construction that includes both local organisational and cultural location.

KEYWORDS

 ${\sf CORE-OM}, {\sf template analysis}, {\sf outcome measurement}, {\sf psychosis}, {\sf care settings}, {\sf patient} \\ {\sf perspective}$

1 | INTRODUCTION

In the last decades, the use of self-report outcome and change measures has increased considerably (Boswell, Kraus, Miller, &

Lambert, 2015), with measures used to evaluate the effects of interventions and increasingly to review change against benchmarks (Fortney et al., 2017). There have been arguments contrasting most such measures, which are "nomothetic", asking the same

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Outline

- In the psych[o|i] fields we implicitly or explicitly equate our measures with blood tests
- ▲I am hoping to persuade you that this is dangerous. The route is:
 - ▲ Epistemology
 - ▲ Methodology
 - MappingsUnits of analysis
 - ▲ Implications

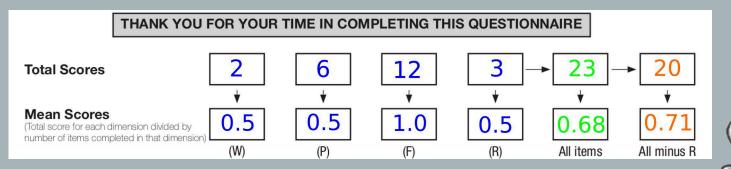




Progress!

Epistemology
 Methodology
 Mappings
 Units of analysis
 Implications
 Summarising









Epistemology

"How is it that we think we know what it is that we think we know?" (Evans, c. 1984)





Epistemology

▲ My position is a mix of:

- ▲ Critical realist: I do think the idea that there is an external world is useful, I just think we can know it other than by discourse about it.
- ▲ Contextual: I see those discourses as located in settings, often professions, with preferred modes of discourse.
- ▲ Pragmatic: I'm largely interested in evidential value in terms of utility.



Differences (epistemologically)

Blood tests

- I think there is an external: blood, with components
- I think we have tools to measure the components
- I think those externals, i.e. blood components are there in all of us ...
- ... and that our components vary importantly

Questionnaires

- I think we have "internal" states that matter, are powerful
- We communicate and leak information about them
- These internals may reflect "external" knowables (fMRI, electrode probes) but that's not usable



Differences (pragmatically)

Blood tests

- Can test the same samples many times
- Can create liquids of known glucose content
- These create referential samples
- Beyond allowing the test (if conscious) the client cannot change the value at the moment of testing

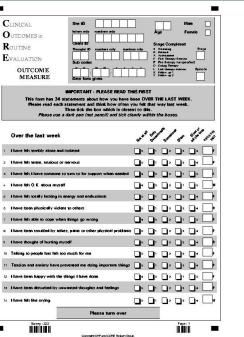
Questionnaires

- One person can only complete one qu'aire once at any one time
- There are no referential values (this is a "1.7 person")
- Clients are active in creating their scores
- They depend on client understanding the text



Progress!

▲ Epistemology ▲ Methodology ▲ Mappings ▲ Units of analysis **▲**Implications ▲ Summarising



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20 My problems have been impossible to put to one side	
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23 I have felt despairing or hopeless	
24 I have thought it would be better if I were dead	
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33 I have felt humiliated or shamed by other people	
34 I have hurt myself physically or taken dangerous risks with my health.	
THANK YOU FOR YOUR TIME IN COMPLETIN	G THIS QUESTIONNAIRE
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Survey : 222	Page:2



Differences (measurement)

Blood tests

- We believe we have methods to map from concentrations to numbers
- Methods might be chemical or immunological
- Might map via colours or electricity
- But end up with numbers that reflect concentrations

Questionnaires

- We have ways to ask people to map from their internal states to numbers:
 - VAS and other single ratings
 - Multi-item scales
 - More complex methods
- We have no idea how the numbers we get map to the internal states
- But we have statistics and psychometrics



Differences (maths)

Blood tests

- We believe we understand the measurement methods (e.g. glucose sticks)
- We know they're not perfect and perhaps nonlinear
- But we have many statistical ways to test their quality

Questionnaires

- We don't know how people map from their internal states to answer q'aires
- So we turn to statistics and psychometrics



Measurement quality (blood)

- Reliability: retest (and again and again to catch calibration drift if a laboratory machine)
- Accuracy/validity: test mean against range of known concentrations
- Linearity: plot against known concentrations (non-linear but regular is fine: pH)



Measurement quality (blood)

- We conclude within whatever epistemological position, that our numbers reflect blood concentrations
 - ▲ We can map cheap measures to referential ones
 - ▲ Where needed (screening) we can achieve very high precision and reliability even in the cheap measure and also use that to step from screening to definitive measurement
 - ▲ We can get predictive validity and utility as we start from very good measures



Measurement quality (q'aires)

- ▲ We seem to have the same:
 - ▲ Reliability
 - ▲ Validity
- ▲ Reliability:
 - ▲ Internal (for multi-item measures)
 - ▲ Test-retest (for any but assume no true change)
 - ▲ Inter-rater (for rater/interview/observer measures)
- ▲ Validity: hm, we have no known values for the internal states so this is messy!
- ▲ Linearity? Impossible to judge?

Validity (psychometric)

- Content (overlaps with construct)
 Face (subset of content, whose face(s)?)
- ▲ Construct
 - ▲ Simple
 - ▲ Sophisticated
- ▲ Convergent/divergent
- Criterion (subset of convergent really)
- Predictive (have you ever seen this explored?)



Validity (psychometric) #2

Internal (within the study)
 External (across studies)
 Ecological (about *practical* generalisability)



Progress!

Epistemology Methodology Mappings Units of analysis Implications Summarising

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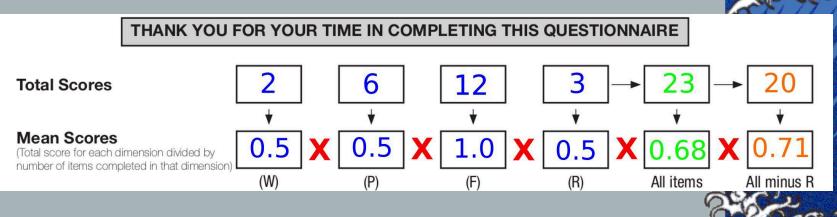
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Progress!

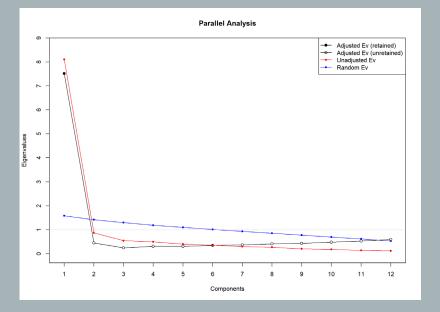
Epistemology
 Methodology
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 Units of analysis
 Implications
 Summarising

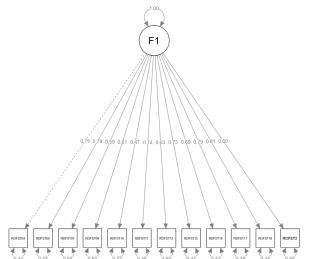






Latent variable models

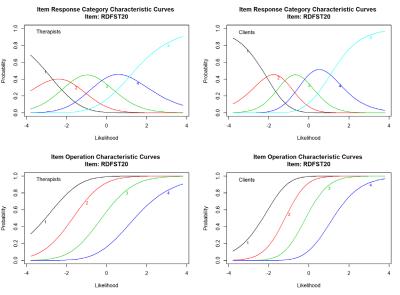






Summarising latent variable models

Our currently dominant methods that seem to map evaluation of questionnaire data to evaluation of physical measurements are large *n* commonality models only



Progress!

Epistemology Methodology (Back to) Mappings Units of analysis Implications

▲ Summarising

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Mapping for how many participants/clients?





n = 1 versus $n \gg 1$

- "Individual vs. group/sample/population"
 "Unit of analysis"
 "Idiographic vs. nomothetic"
- ▲ "Individual vs. aggregated"



n = 1 versus $n \gg 1$

- Statistically these are very different particularly when scores are unreliable
 - ▲ Aggregation, for which we need n ≫ 1, improves reliability as it retrieves signal from noise (hence internal reliability)
 - ▲ So a score for one person is as unreliable as scores can be
 - ▲ But if all scores are from same person we can sidestep some issues (for another talk!)





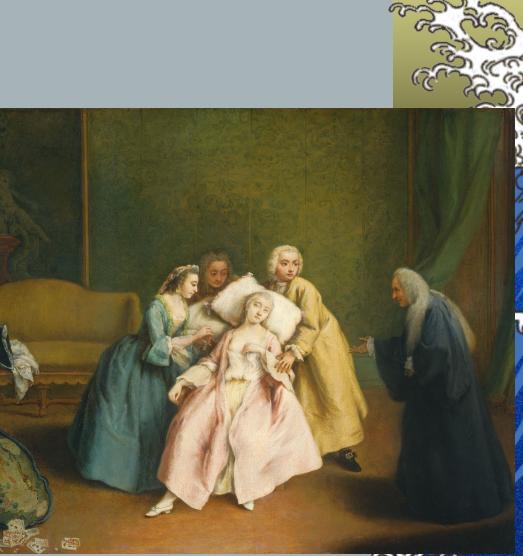
- Psychometric methods try to map analysis of multi-item measures to that of blood tests
- Useful to find commonalities across people for use of measures to rate those commonalities
- Unlike blood tests this tells us nothing about using the measures within individuals for change measurement





Progress!

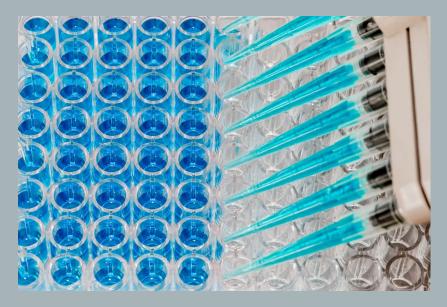
Epistemology
 Methodology
 Mappings
 Units of analysis
 Implications
 Summarising





Does this matter? Pragmatic evidential value

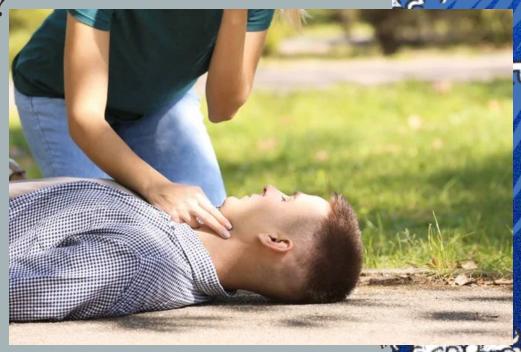
Distinguish use for n = 1 from $n \gg 1$ use





Utility of tests #1: Blood tests

- Someone in a crowd falls over unconscious
- Someone else with diabetes sees the medicalert bracelet saying "diabetes" and does a quick fingerprick "glucostix" test
 What will it tell A&E?



Utility of tests #1: Blood tests

▲ Glucose in the ...

- ▲Normal range: coma is probably not diabetic
- ▲Low: start giving glucose (or glucagon)
- ▲ High: start hydrating and bringing glucose down (more complicated than this but that's

a good start)



MAG

Utility of tests #1: Blood tests

- Person who collapsed had a blood glucose level of .2 mmol/l
- ▲ So this was a hypoglycaemic crisis/coma
- What more data/information does the family doctor want?



Meso

Utility #2: someone seeks psychological help ...

▲ What more data do we need/want?

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I have felt optimistic about my future	
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I have felt humiliated or shamed by other people	
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Working with the individual

- ▲ In both cases we will want to explore:
 - ▲ How the person understands the problems.
 - \checkmark The personal resources they have for this.
 - ▲ Their family, intimate, work and social relationships that will help or hinder them.
 - ▲ How all this means I can best work with them.
 - ▲ How we might monitor that work: what data will help us?



Data to monitor this work

PwDM

- ▲ Blood glucose levels
- ▲ HbA1c
- ▲ Weight/BMI
- Many "hard" tests for consequences of DM
- ▲ Diet
- ▲ Lifestyle
- Adherence to agreed regime
- ▲ ... and all of this $\rightarrow \rightarrow \rightarrow$

PwPsyT

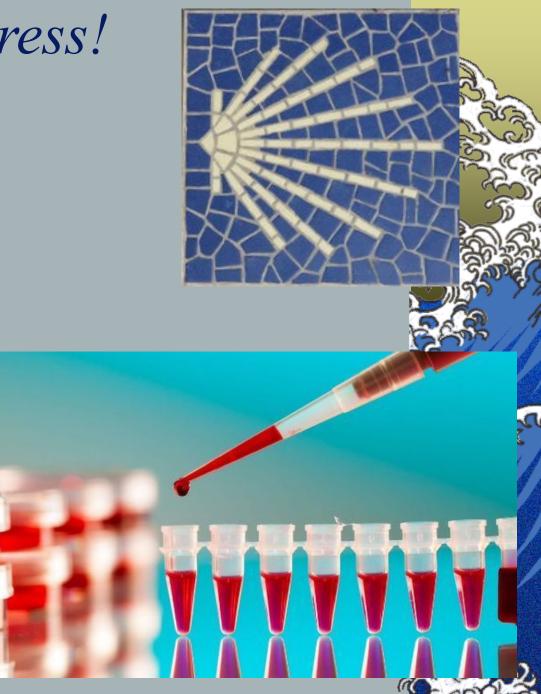
- ▲ Body language
- ▲ Verbal language: form
- ▲ Verbal language: content
- Reported life outside the sessions
- ▲ ? "Collateral" information
- Measures, "psychometric measures"



Progress!

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Both have a shared risk ▲ Can overvalue the numbers and detach

- then from their meaning & utility
 - ▲ Blood tests
 - ▲ Relentless focus on the values can risk losing the whole person and their wishes:
 - ▲Blood glucose but also ...
 - ▲... cancer markers?
 - ▲ Questionnaire scores
 - ▲ Can't assume that what matters to the client is covered by the measure
 - ▲ Can't assume that the client just wants to be completely "honest" in responding





▲ Email me: <u>chris@psyctc.org</u> !



Thanks!

Resources

- OMbook: <u>https://ombook.psyctc.org/book/</u>
- Glossary: <u>https://www.psyctc.org/psyctc/book/glossary/</u>
- CORE site: <u>https://www.coresystemtrust.org.uk/</u> Spanish: <u>https://www.coresystemtrust.org.uk/espanol/</u>
- Rblog: <u>https://www.psyctc.org/Rblog/</u>
- Shiny apps: <u>https://shiny.psyctc.org/</u>
- CECPfuns: <u>https://cecpfuns.psyctc.org/</u>



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