

Patient Assessment of Chronic Illness Care (PACIC) instrument: disentangling dimensions using published validation models

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PACIC instrument

- Patient **A**ssessment of **C**hronic **I**llness **C**are
- Developed to assess whether care for chronic disease patients is congruent with the Chronic Care Model
- Patients' perspective
- Self-administered questionnaire
- 20 items, 5-point response scale (1=never, 2=generally not, 3=sometimes, 4=most of the time, 5=always), 5 dimensions
- Dimensions and overall PACIC are scored by simple averaging of items

Five original dimensions

- They emphasize patient-healthcare team interactions, in particular, aspects of self-management support
- They do not consider all elements of the CCM
 - « Patient activation » (3 items)
 - « Delivery system design/decision support » (3 items)
 - « Goal setting/tailoring » (5 items)
 - « Problem solving/contextual counseling » (4 items)
 - « Follow-up/coordination » (5 items)

PACIC: current knowledge

- Versions exist in different languages, and several validation studies were published (*English-2005, Spanish-2008, Dutch-2008, Danish-2010, German-2011*)
- Different statistical methods: not always appropriate
- Structure (dimensions) emerging from validation studies:
 - 5 (original) dimensions
 - 2 dimensions (2 different models)
 - 1 dimension (20-items)
 - 1 dimension (11-items = PACIC short form)

➔ ... **PACIC structure: lack of consensus** ...

Aim of the study

- To understand the structure of the PACIC instrument better
- ➔ To test all published validation models using one same dataset and statistical tools adapted to the ordinal structure of the data

Methods

- **Data:** population-based survey conducted in 2011 (406 adult patients with diabetes in the canton of Vaud, Switzerland)
- **Instrument:** French version of the 20-items PACIC
- **Statistical analyses:**
 - Data quality: means, % missing, floor and ceiling effects
 - Confirmatory factorial analysis (CFA), based on:
 - Polychoric correlation matrix
 - Likelihood estimation with a multinomial distribution for manifest variables
 - Pearson estimator of variance-covariance matrix
 - Evaluation of loadings and goodness of fit

Characteristics of included patients (n=406)

Age	Mean (SD)	64.4 (11.4)
Gender	Women	41%
Type of diabetes	I / II / undetermined	13% / 69% / 19%
Treatment	Oral anti-diabetic drugs	50%
	Insulin	22%
	OAD + insulin	27%
	None / don't know	1%
Duration of diabetes	≤ 10 years	51%
Diabetes complications	≥ 2	19%

Data quality

- Means of item responses: 1.7 - 3.7
- Range of missing values: 5.7% - 12.3% (item 5)
- Floor effect: 7% - 67% (items 10,17)
- Ceiling effect: 4% - 45.5% (items 5,12)

PACIC structure

(CFA based on polychoric correlation matrix)

- Loadings were relatively high (>0.55 , most >0.70)
- The only model showing acceptable to good fits was the 11-items single dimension model (RMSEA $<.08$, SRMR $<.05$, CFI $>.97$)
- This model also appeared to be the only one presenting acceptable fits when performing the two other types of CFA

Lack of consensus on the PACIC structure: possible explanations

- 1) Original 5 dimensions structure may not be the right one
- 2) Inappropriate choice of statistical tools and selection criteria may affect results (retain too many dimensions, may impact loadings)
- 3) Samples too small

Lack of consensus on the PACIC structure: possible explanations

- 4) PACIC versions used not always similar (anchors, response scale)
- 5) Diversity of contexts, cultures and chronic diseases considered

Conclusion

- Model considering 11 items in a single dimension appeared to best fit data.
- Lack of consensus on the PACIC structure linked to statistical problems rather than differences of contexts, cultures, types of chronic diseases, ...
- ➔ To get an overall picture of experiences of people receiving care for chronic diseases, a single score might be used instead of the five original ones. This could be done in complement to the consideration of single item results.

Thank you for your attention !





Assessment of Care for Chronic Conditions

Staying healthy can be difficult when you have a chronic condition. We would like to learn about the type of help with your condition you get from your health care team. This might include your regular doctor, his or her nurse, or physician's assistant who treats your illness. Your answers will be kept confidential and will not be shared with your physician or clinic.

Over the past 6 months, when I received care for my chronic conditions, I was:

	<u>None of the time</u>	<u>A Little of the Time</u>	<u>Some of the Time</u>	<u>Most of the Time</u>	<u>Always</u>
1. Asked for my ideas when we made a treatment plan.	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅
2. Given choices about treatment to think about.	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅
3. Asked to talk about any problems with my medicines or their effects.	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅
4. Given a written list of things I should do to improve my health.	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅
5. Satisfied that my care was well organized.	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅

http://www.improvingchroniccare.org/index.php?p=PACIC_survey&s=36

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