

“Getting validity evidence by cognitive interviewing to interpret psychometric results”



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Outline

- ◆ Introduction
 - What “Cognitive Interviewing” is for?
 - Psychometrics and qualitative studies
 - Understanding psychometrics by CI

- ◆ Study 1: Psychometrics of the family support scale.

- ◆ Study 2: Meaning of “family functioning” construct

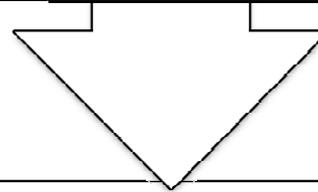
- ◆ Discussion



Introduction

Characteristics

In-Depth (open) Interview	No random sample, but convenience sample	Mix of “probes” used: think aloud, oriented-meaning, paraphrasing...	Interviewees act as “collaborators”.
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Cognitive interviewing objectives

Survey research: To identify potential sources of measurement error.	Psychological testing: Validity evidence on response processes.
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Introduction

Objective: To show how the evidence provided by cognitive interviews can help in understanding traditional psychometric results.

Study 1

Psychometric analysis by comparing residents in single person or multi-person households

Study 2

Evidence of validity obtained through cognitive interviews





Study 1 (Psychometrics): Method

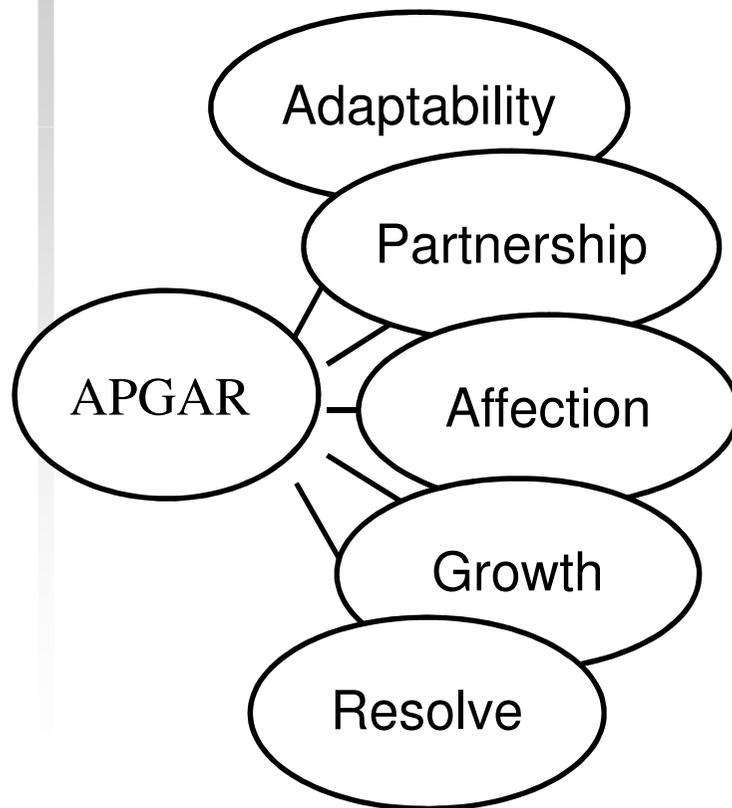
- ◆ Participants: (Data from the Spanish Health Survey, Spanish Ministry of health, 2006)

Description of characteristics of the participants		
Groups	Frequency	Percentage
Gender		
- Male	10298	39.0
- Female	16115	61.0
Household type		
- Single-person (Sph)	10042	38.0
- Multi-person (Mph)	16371	62.0



Study 1: Method (Materials)

The APGAR questionnaire is a useful tool for learning about the family situation



APGAR items	Almost always	Some of the time	Hardly ever
1. ¿Are you satisfied with the help you receive from your family when you have a problem?	0	1	2
2. ¿Are you satisfied with the time you and your family spend together?	0	1	2
3. ¿Do you feel you family loves you?	0	1	2
4. ¿Do you talk together about problems you have in home?	0	1	2
5. ¿Important decisions are made by all of you together in home?	0	1	2



Study 1: Analyses and results

Descriptive analyses

Item	Sph			Mph		
	Mean	SD	DI	Mean	SD	DI
1	1.86	0.429	0.675	1.90	0.344	0.500
2	1.76	0.558	0.726	1.89	0.359	0.554
3	1.70	0.626	0.655	1.87	0.401	0.485
4	1.70	0.582	0.562	1.72	0.548	0.304
5	1.91	0.344	0.655	1.97	0.205	0.515
Alpha	.833			.675		



Study 1: Analyses and results

Dimensionality

Dimensionality						
Factorial Analyses- Autovalores y Varianza explicada						
Groups	Factor 1		Factor 2		Factor 3	
	Eigenvalues	Explained variance	Eigenvalues	Explained variance	Eigenvalues	Explained variance
Sph	3.127	62.549	0.692	13.830	0.573	11.466
Mph	2.449	48.975	0.855	17.100	0.721	14.416



Study 1: Analyses and results

Dimensionality

Item	Factor loading		Commonalities	
	Sph	Mph	Sph	Mph
1	0.796	0.673	0.730	0.533
2	0.815	0.734	0.760	0.592
3	0.737	0.645	0.657	0.499
4	0.614	0.352	0.409	0.144
5	0.754	0.641	0.655	0.454



Study 1: Conclusions

Groups differences

- Mph scored higher on the scale
- Sph: Greater variability and better discrimination of the items
- Unidimensionality clearer for Sph participants

Groups similarities

- Item 4 obtained the lowest average and discrimination index
- Item 4 lowest factor loading and commonalities



Study 2 (Cognitive Interviewing): Method

◆ Participants: 21

Description of characteristics of the participants	
Groups	Frequency
Gender	
- Male	10
- Female	11
Household type	
- Single-person households	9
- Multi-person households	12

◆ Protocolo probing based paradigm



Study 2: Method

- Contact
- Information
- Interview
- Reward
- Confidentiality

Recruitment

Trained and
experienced
interviewers

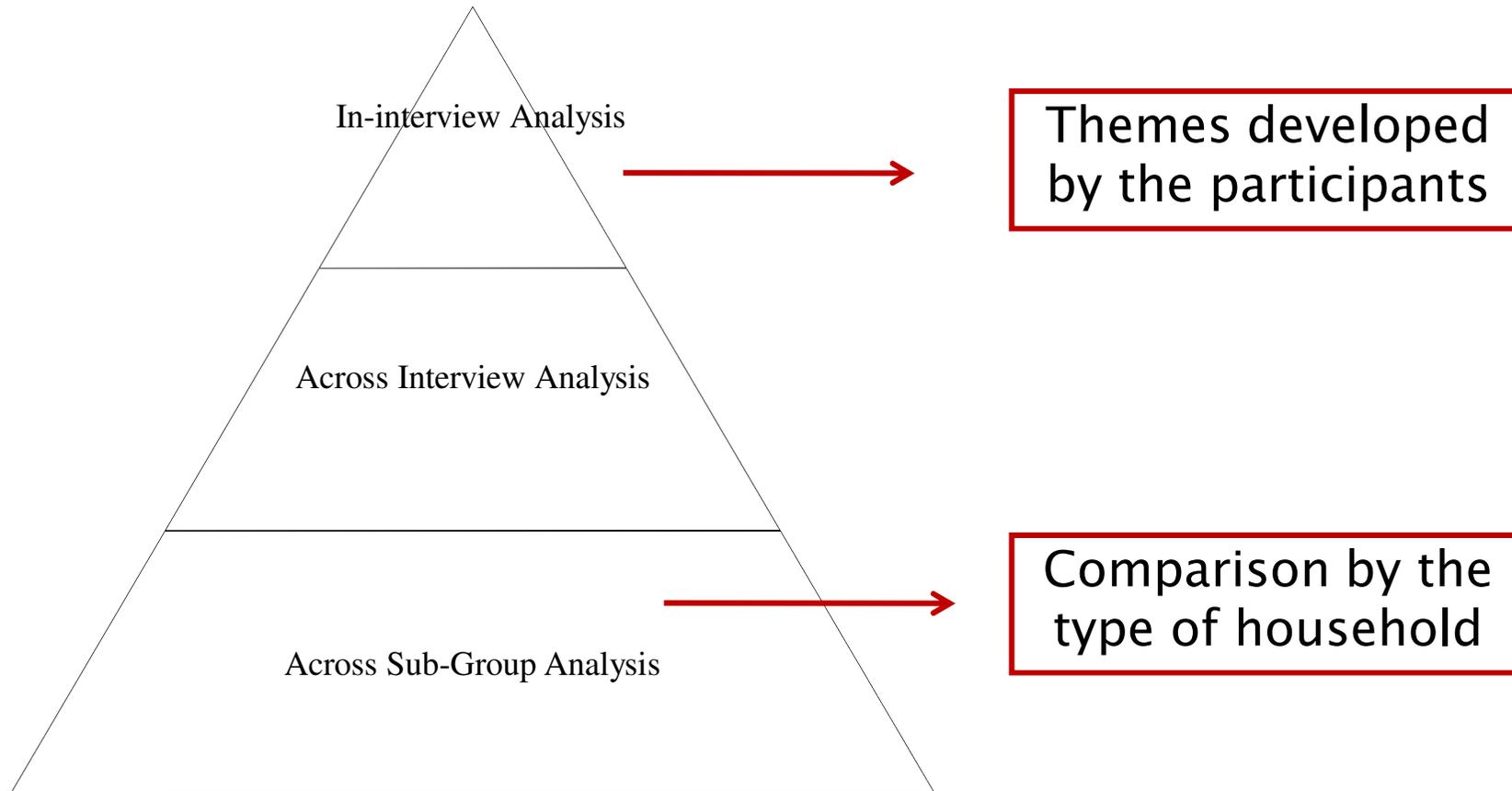
Interviewers

Coders

- Transcripts
- Selecting themes
- Clasify participants



Study 2: Analyses

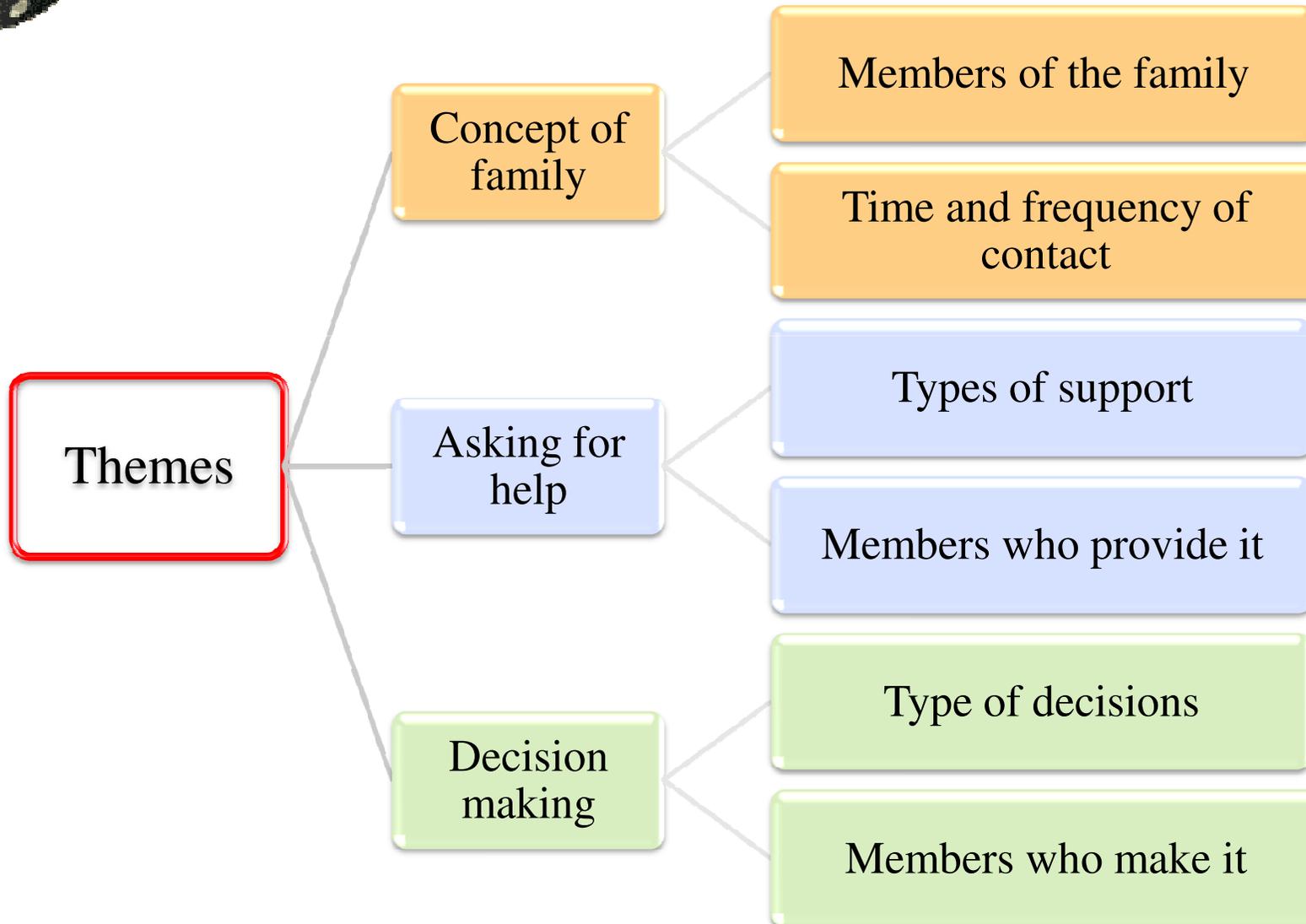


Miller, 2007



Study 2: Results

Sub-themes
(from participants' responses)





Study 2: Results (across groups)

Member who provide the aid	Type of support					
		Economic issues	Psychological support	Economic and pshychologic	Interest	Missing
	Parents	2.M.36.S.S.		18.W.30.S.M.		
	Siblings	6.M.32.S.S.	14.W.38.D.M.		14.W.38.D.M.	
	Parents and siblings		3.M.64.S.S. 11.W.28.D.M. 19.M.20.S.M.	4.M.40.S.S.	3.M.64.S.S.	8.M.36.S.S. 10.M.35.S.M.
	Partner		12.W.46.M.M. 20.M.65.M.M.			
	Children		7.W.67.S.S. 17.W.53.M.M.			
	External		3.M.64.S.S.	9.M.30.S.S.	3.M.64.S.S.	
	Nobody		13.W.67.M.M			
	Missing		15.W.51.M.M	1.W.48.S.US. 21.M.51.M.M		



Study 2: Results (across groups)

	Type of support					
		Economic issues	Psychological support	Economic and psychologic	Interest	Missing
Member who provide the aid	Parents	2.M.36.S.S.				
	Siblings	6.M.32.S.S.	14			
	Parents and siblings					
	Friends					
	Missing		15.W.30.M	1.W.48.S.US. 21.M.51.M.M		



"I try to do things for myself, I try not to have to ask for help, but the times I had to ask have been for economic reasons, for example when we were forming the company(2.M.36.S.S.)"

"They give you advice when you have a problem, help you, support you, they are with you, they don't leave you alone, they are with you when you need it"
(12.W.46.M.M.).

- Greater variety in sph
- Sph mentioned external



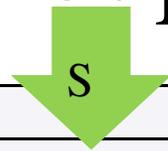


Study 2: Results (across groups)

Type of decisions	Members who makes decisions				
		Participant	Partner and children	Household member	Former homes
	Holidays	1.W.48.S.S. 9.M.30.S.S.		16.W.40.S.M. 19.M.20.S.M.	6.M.32.S.S. 20.M.65.M.M.
	Household services		21.M.51.M.M.		6.M.32.S.S.
	Daily purchase	1.W.48.S.S. 9.M.30.S.S.	21.M.51.M.M.	16.W.40.S.M. 18.W.30.S.M.	4.M.40.S.S. 6.M.32.S.S. 13.W.67.M.M.
	Economic affairs	1.W.48.S.S.	21.M.51.M.M.		
	Important changes				4.M.40.S.S.
	Missing	3.M.64.S.S.	12.W.46.M.M. 15.W.51.M.M.		2.M.36.S.S. 5.W.45.D.S. 7.W.67.S.S. 8.M.36.S.S. 10.M.35.S.M. 17.W.53.M.M.



Study 2: Results (across groups)



Type of decisions	Members who makes decisions			
	Participant	Partner and children	Household member	Former homes
Economic	<p><i>"I suppose my parents make the decisions together. I guess my brother is also involved now, I'm further out, but there are cases in which decisions are made together" (4.M.40.S.S.)</i></p>			
	9.M.30.S.S.		18.W.30.S.M.	6.M.32.S.S. 13.W.67.M.M.
				4.M.40.S.S. 5.M.M.
MIS.	<p><i>"My daughter wants to buy a house and asks my opinion and that I go with her. With my husband,, we speak before doing anything. The decisions are usually taken by my oldest son, my husband, me and our daughter"(12.W.46.M.M.)</i></p>			
				8.M.36.S.S. 10.M.35.S.M. 17.W.53.M.M.
				7.S.S.

"I suppose my parents make the decisions together. I guess my brother is also involved now, I'm further out, but there are cases in which decisions are made together" (4.M.40.S.S.)

"My daughter wants to buy a house and asks my opinion and that I go with her. With my husband,, we speak before doing anything. The decisions are usually taken by my oldest son, my husband, me and our daughter"(12.W.46.M.M.)

Sph referred to former homes





Study 2: Conclusions

Sph

- Greater variety in the themes
- Referred to past situations

Mph

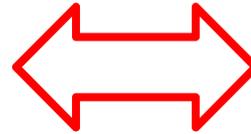
- Experiences in their current home

Different frameworks to respond to the scale, and different weight to the aspects considered



Discussion

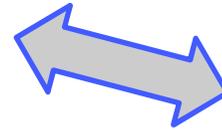
Psychometrics
results



CI results

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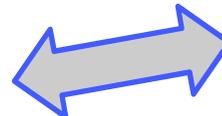
Higher values of
discrimination indices



Higher internal consistency



Clearer unidimensionality



Greater variety in the
interpretation of the
types of assistance and
the people who share
or shared decision
making



Discussion

Usefulness

- Ability to provide evidence of validity
- To understand differences in the psychometrics results

Limitations

- Lack of objectivity and consistency
- Absence of a theoretical basis to guide the analysis

Thanks for your attention



Don't hesitate to contact me for comments, doubts, or suggestions.

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