

# Differential Item Functioning of the English- and Spanish-Administered HINTS Psychological Distress Scale

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HINTS DATA USER CONFERENCE  
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# Objective

- ❖ To examine the extent to which the psychological distress items exhibiting differential item functioning (DIF) contribute to observed between-group differences in reporting depression
  - » English- vs. Spanish-Administered CATI

# Participants

- ❖ A total of 6,369 respondents (18 years and older) from a national probability sample of general adult population were surveyed
- ❖ All 362 Spanish-administered participants included
- ❖ 362 English-administered participants randomly selected

# Sample Characteristics

		Spanish (n=362)	English (n=362)
<b>Gender</b>	Male	155	177
	Female	207	185
<b>Age</b>	M $\pm$ s.d.	40.2 $\pm$ 16.1	49.4 $\pm$ 18.2
<b>Race</b>	Hispanic	334	40
	Other	28	322

# Measure

- ❖ Self-reported depression was measured by the 6-item Psychological Distress Scale (PDS; 0-12 not-depressed; 13-24 depressed)

# Psychological Distress Scale

- ❖ HS-2. During the past 30 days, how often did you feel [FEELING]?
  - » a. so sad that nothing could cheer you up
  - » b. nervous
  - » c. restless or fidgety
  - » d. hopeless
  - » e. that everything was an effort
  - » f. worthless

1=All of the time; 2=Most of the time; 3=Some of the time; 4=A little of the time; 5=None of the time

# Method

- ❖ Differential Item Functioning (DIF) analysis based on multiple-group partial credit model was conducted
  - » DIF is said to occur when individuals with the same level of latent trait (e.g., depression) being measured but who come from different identifiable subgroups (e.g., English vs. Spanish) do not have the same probability of category endorsement

# Results

## Sample Item Endorsement

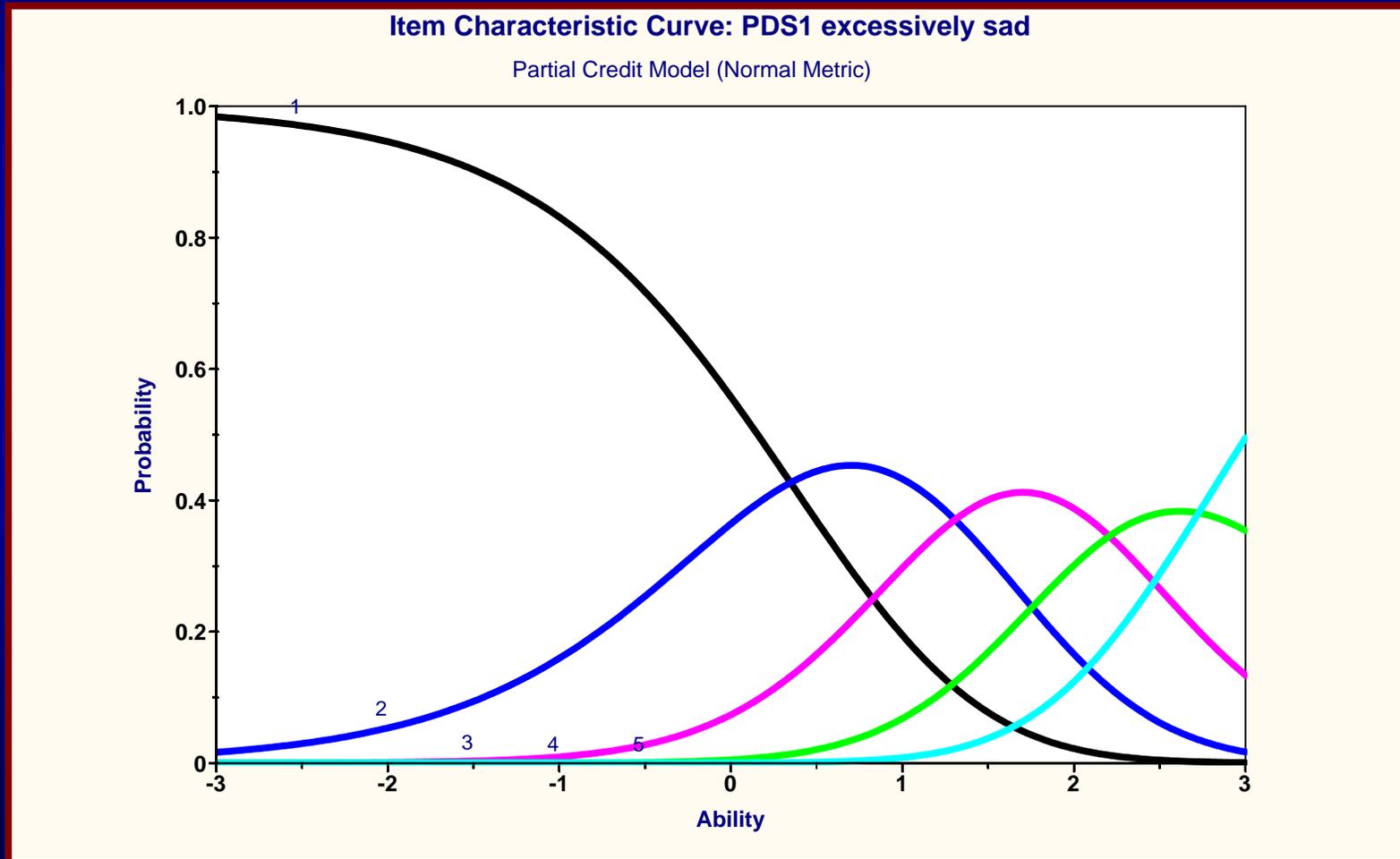
How often did you feel excessively sad? \* Was the interview completed in English or Spanish Crosstabulation

Count

		Was the interview completed in English or Spanish		Total
		English	Spanish	
How often did you feel excessively sad?	All of the time	1	18	19
	Most of the time	18	24	42
	Some of the time	48	65	113
	A little of the time	96	115	211
	None of the time	187	114	301
	Don't know	0	1	1
Total		350	337	687

# Results

## Item Characteristic Curve



# Results

## Differential Item Functioning

	Slope	Location (Spanish)	Location (English)	p
Excessively sad	0.72	1.33	1.65	<b>0.01</b>
Nervous	0.61	1.40	1.23	0.21
Restless	0.74	1.22	0.97	<b>0.03</b>
Hopeless	1.58	1.40	1.62	<b>0.04</b>
Everything is an effort	0.42	1.06	1.01	0.75
Worthless	0.86	1.77	1.69	0.59

# Results

## Serious Psychological Distress

	Spanish (n=362)	English (n=362)
No (PDS score 0-12)	284 (87.1%)	324 (93.6%)
Yes (PDS score 13-24)	42 (12.9%)	22 (6.4%)

# Results

## General Health Status

	Spanish (n=362)	English (n=362)
<b>Excellent</b>	31 (9.2%)	38 (10.9%)
<b>Very Good</b>	35 (10.4%)	107 (30.6%)
<b>Good</b>	86 (25.5%)	133 (38.0%)
<b>Fair</b>	164 (48.7%)	59 (16.9%)
<b>Poor</b>	19 (5.6%)	13 (3.7%)

# Summary

- ❖ The response characteristic curves indicated that the five ordered response categories (ranging from “all of the time” to “none of the time”) worked as expected
- ❖ 3 items (“so sad that nothing could cheer you up”; “restless or fidgety”; “hopeless”) displayed DIF
- ❖ 12.9% Spanish-administered adults reported depressed (PDS score 13-24) and only 6.4% for those English-administered adults

# Conclusions

- ❖ Although Spanish-administered adults reported more depression, our findings suggest that the between-group comparison may be biased by DIF
- ❖ More research is needed to investigate the impact of different language version of other health-related measures, particularly those that use Likert-type response options

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