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Self-rated general health question in a multilingual survey

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Linguistic minorities in US

- ▶ **In 2000,**
 - ▶ 47 million (18%) ages 5 and older speak languages other than English at home
 - ▶ 21 million (8%) “linguistically isolated”
- ▶ **In 2000 California,**
 - ▶ 39.5% and 20%
- ▶ **Language accessibility/assistance programs**
 - ▶ Federal: HHS Limited English Proficiency Guidance in 2004 pursuant to Executive Order 13166 in 2002
 - ▶ CA: Senate Bill 853 in 2003
- ▶ **Increased interest to include these population in public health and surveillance research**

Self-rated general health

▶ **In general, would you say your health is**

1) EXCELLENT,

2) VERY GOOD,

3) GOOD,

4) FAIR, OR

5) POOR?

Self-rated general health – cont'd

▶ Widely used

- ▶ National Health Interview Survey (US)
- ▶ Behavioral Risk Factor Surveillance System (US)
- ▶ Medical Expenditure Panel Survey (US)
- ▶ Canadian Community Health Survey
- ▶ Health Survey of England
- ▶ Current Population Survey (US)
- ▶ 2007 International Social Survey Program

Self-rated general health – cont'd

- ▶ **Single strongest predictor of current and subsequent mortality and morbidity**
 - ▶ Clinically proven
 - ▶ Even after accounting for socio-demographic and medical risk factors

- ▶ **Frequently used in epidemiological and other studies**
 - ▶ SF-36
 - ▶ SF-12

Self-rated general health – cont'd

- ▶ **Subjective and general**
- ▶ **Better than objective measures (e.g., health conditions and disability) which can be verified by the external measures**
 - ▶ Captures the full spectrum of health conditions
 - ▶ Adds an extra dimension beyond objective measures
 - ▶ Perception predicts behaviors/mortality

Potential issues of self-rated general health

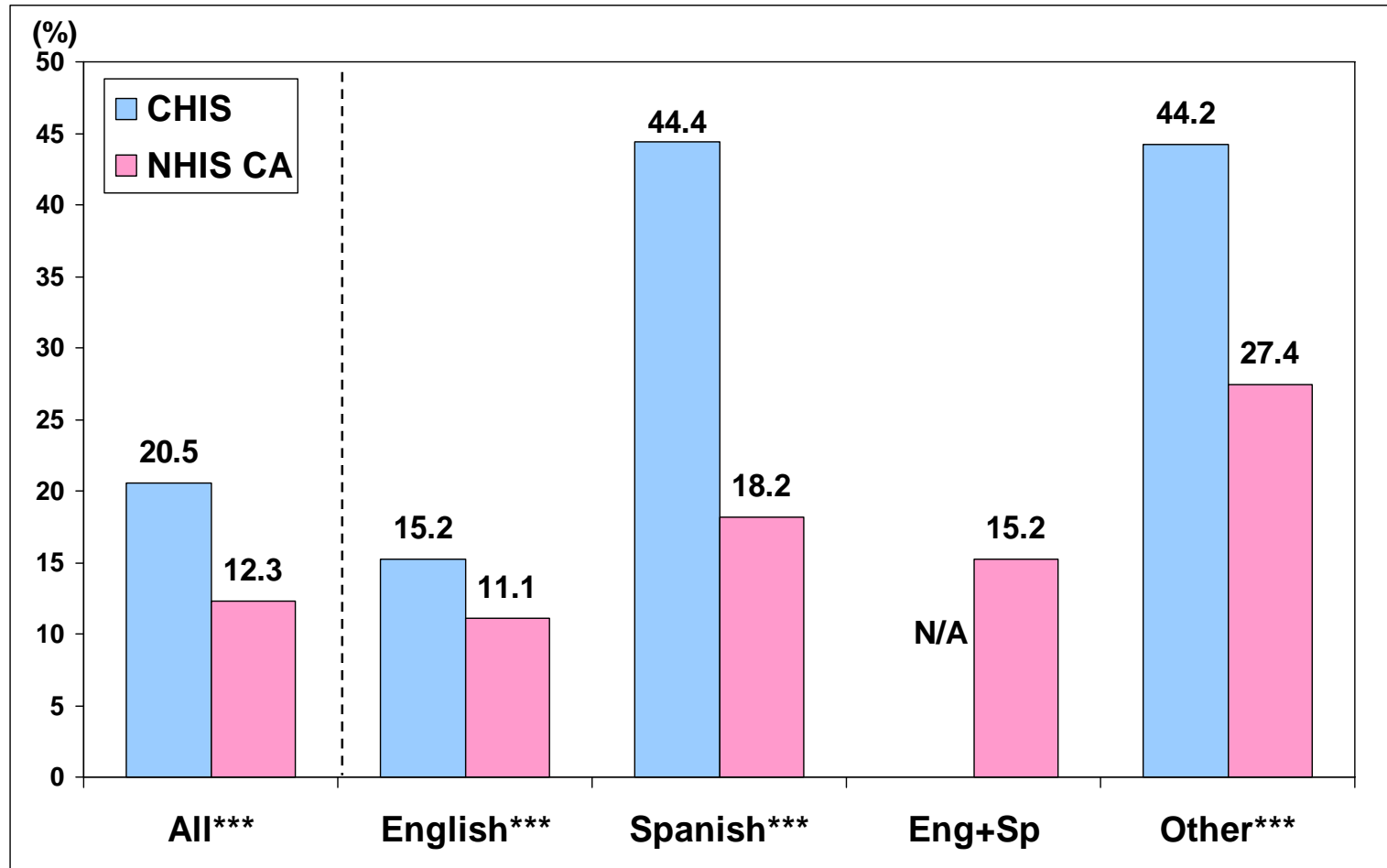
- ▶ **Measurement error**
- ▶ **Comparability in response scale**
 - ▶ very good, good, fair, bad, and very bad
 - ▶ excellent, very good, good, fair and poor
- ▶ **Cross-cultural comparability**
 - ▶ Stewart and Napoles-Springer (2000)
- ▶ **Cross-language comparability**
 - ▶ Translation

California Health Interview Survey

- ▶ **Biennial RDD telephone survey of California**
- ▶ **Adult sample size: 40,000~50,000 (Self-report)**
- ▶ **RR: Low! 40% in 2001 and downhill**
- ▶ **Conducted in English, Spanish, Chinese (Mandarin, Cantonese), Korean, Vietnamese**
- ▶ **Multiple forward questionnaire translation**
- ▶ **Slightly over 10% conducted in non-English**

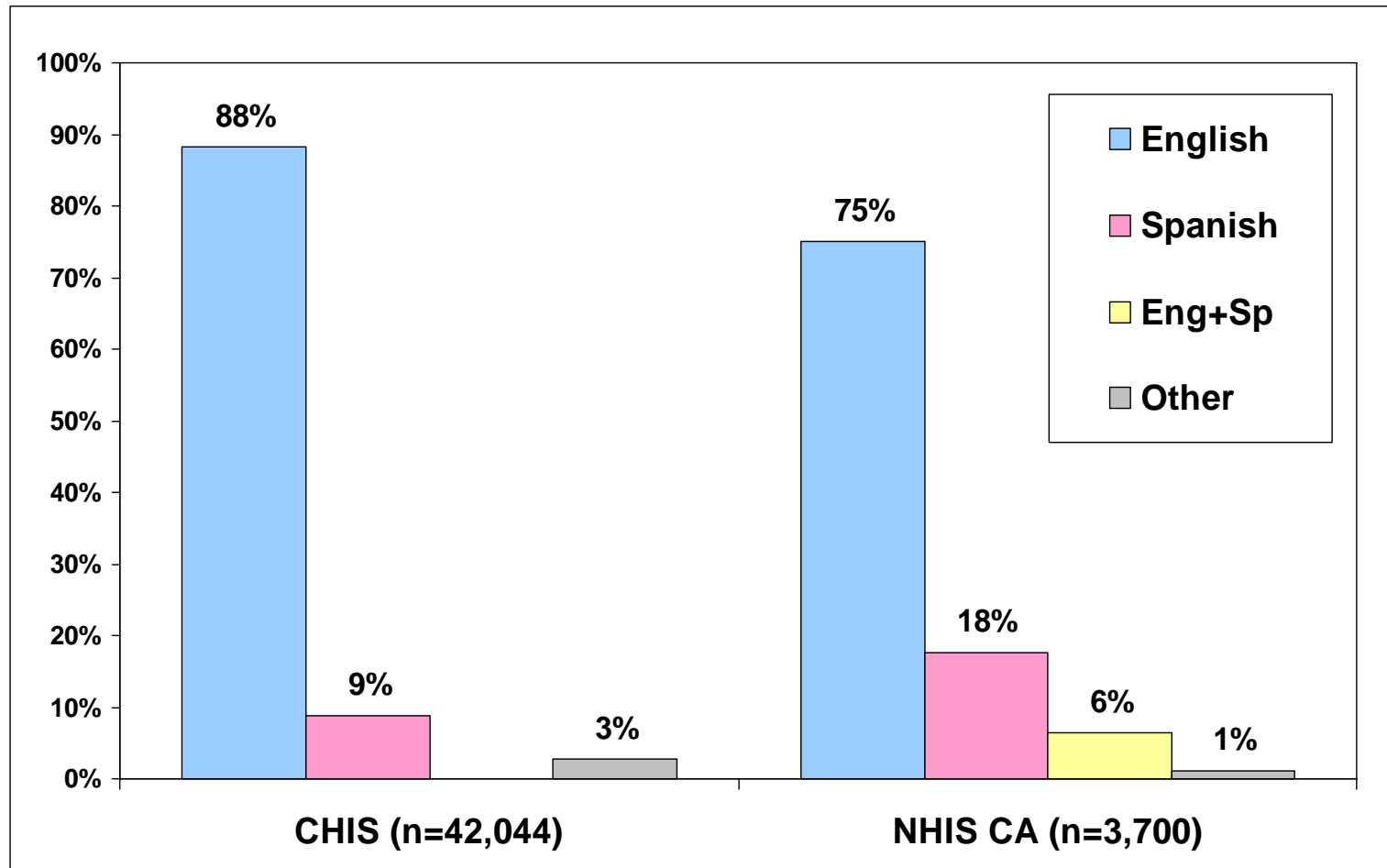
General health between CHIS and NHIS

Wtd dist. of fair/ poor health by language for 18+



General health between CHIS and NHIS – cont'd

Sample size dist. by language for 18+



General health between CHIS and NHIS – cont'd

- ▶ **Differences in between CHIS and NHIS**
 - ▶ Spanish translation?
 - ▶ Identical: Excelente, Muy buena, Bien, Regular, Mala
 - ▶ Self vs. Proxy interviews?
 - ▶ Age-distribution?
 - ▶ Mode effect?
 - ▶ Question location?
 - ▶ CHIS: General health is the first item of all health-related questions
 - ▶ NHIS: General health comes after a series of physical, mental, sensory & developmental limitations & chronic conditions

Location of general health item

▶ Recommended to place before specific questions

- ▶ Keller and Ware (1996) and SF instruments
- ▶ Minimize content effects

▶ Not much evidence

- ▶ Bowling and Windsor (2008)
- ▶ Crossley and Kenney (2002)
- ▶ Only studied in English

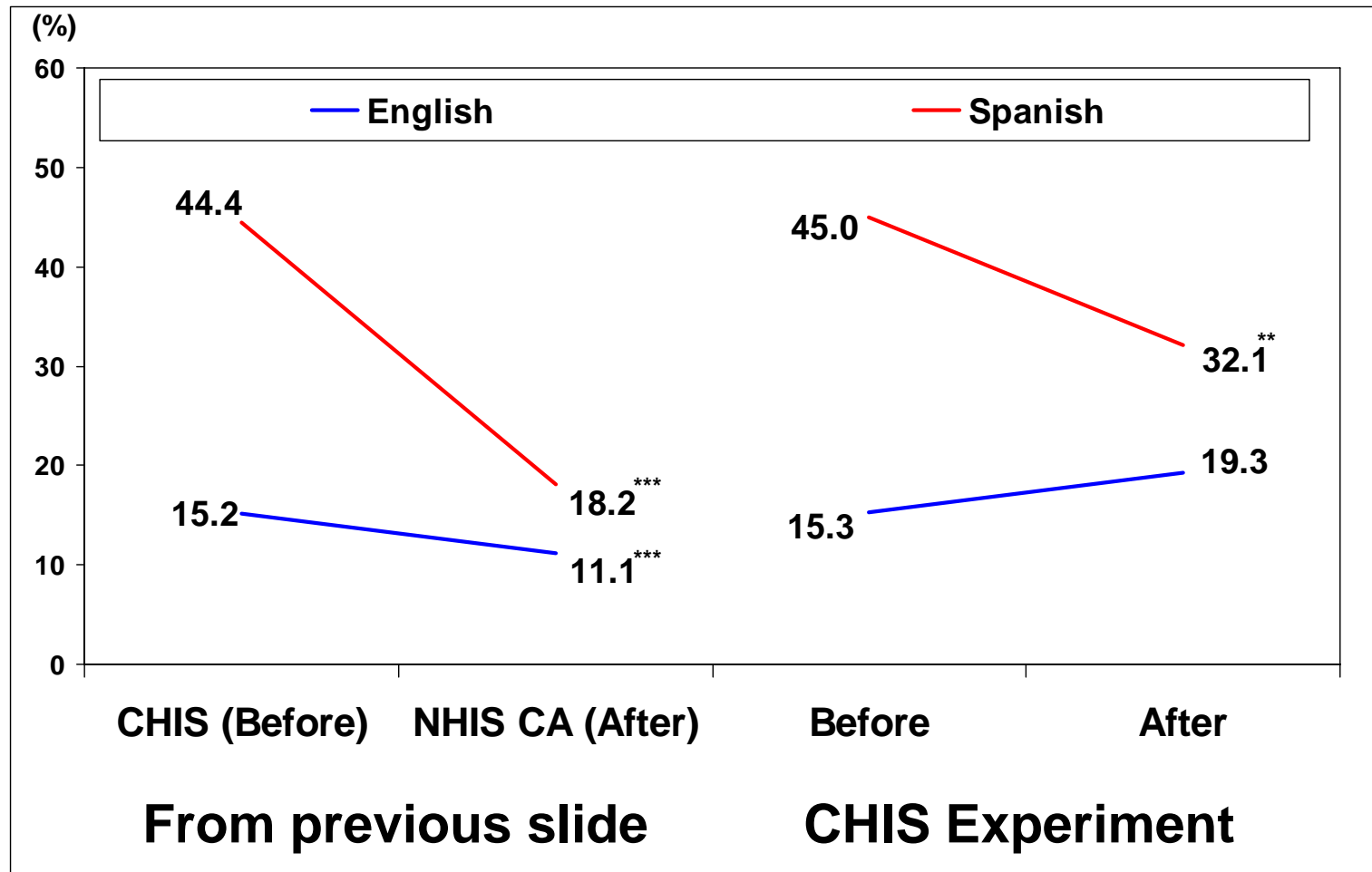
Experiment in CHIS 2007

▶ Question order randomization

- ▶ First health-related question; before chronic condition questions
 - ▶ 574 English
 - ▶ 406 Spanish
 - ▶ 105 Asian languages (Chinese, Korean, Vietnamese)
- ▶ After chronic condition questions
 - ▶ 617 English
 - ▶ 418 Spanish
 - ▶ 102 Asian languages

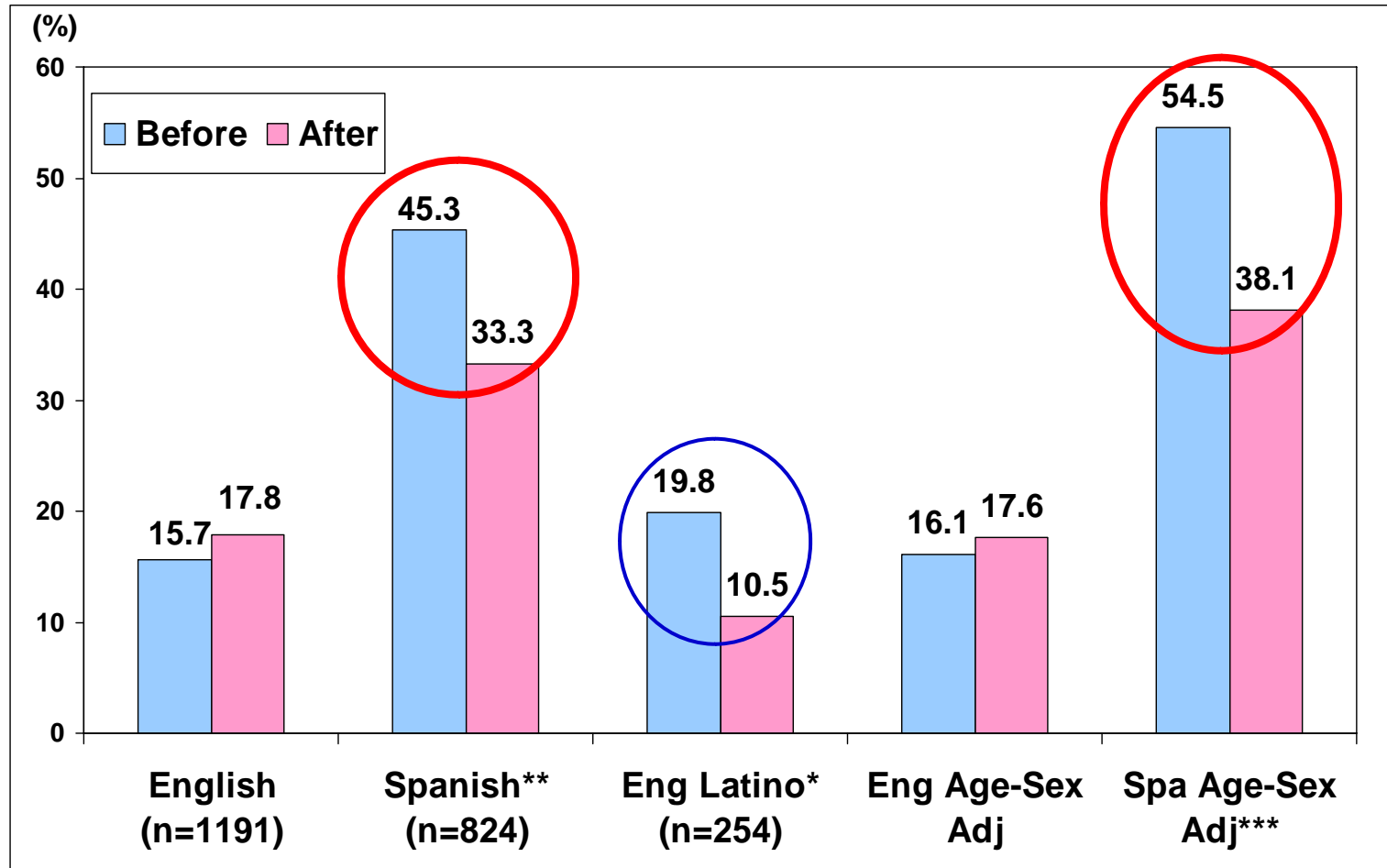
Experiment results - cont'd

Wtd dist. of fair/ poor health by location & language



Experiment results

Unwtd dist. of fair/ poor health by location & language



* p<0.05 ** p<0.01

Experiment results – cont'd

Dist. of general health by location & language

| Language | General health | Before | After | Diff |
|----------|----------------|--------|-------|-------|
| English | Excellent | 21.78 | 22.20 | 1.55 |
| | Very good | 36.06 | 32.90 | 0.06 |
| | Good | 26.48 | 27.07 | 1.60 |
| | Fair | 12.20 | 13.45 | -1.72 |
| | Poor | 3.48 | 4.38 | -1.50 |
| Spanish | Excellent | 6.65 | 8.85 | 2.20 |
| | Very good | 8.13 | 12.44 | 4.31 |
| | Good | 39.90 | 45.45 | 5.55 |
| | Fair | 37.93 | 30.38 | -7.55 |
| | Poor | 7.39 | 2.87 | -4.52 |

Experiment results – cont'd

- ▶ **Relationship w/ chronic conditions:**
Asthma, Diabetes, HBP, Heart Disease
- ▶ **Score: 0~4**
- ▶ **Number of chronic conditions by location and language for fair/ poor health**

| | Q Location | |
|---------|-------------------|--------------|
| | Before | After |
| English | 1.30 (0.11) | 1.24 (0.10) |
| Spanish | 0.80 (0.07) | 0.82 (0.08) |

→ **Similar number of conditions reported by location**

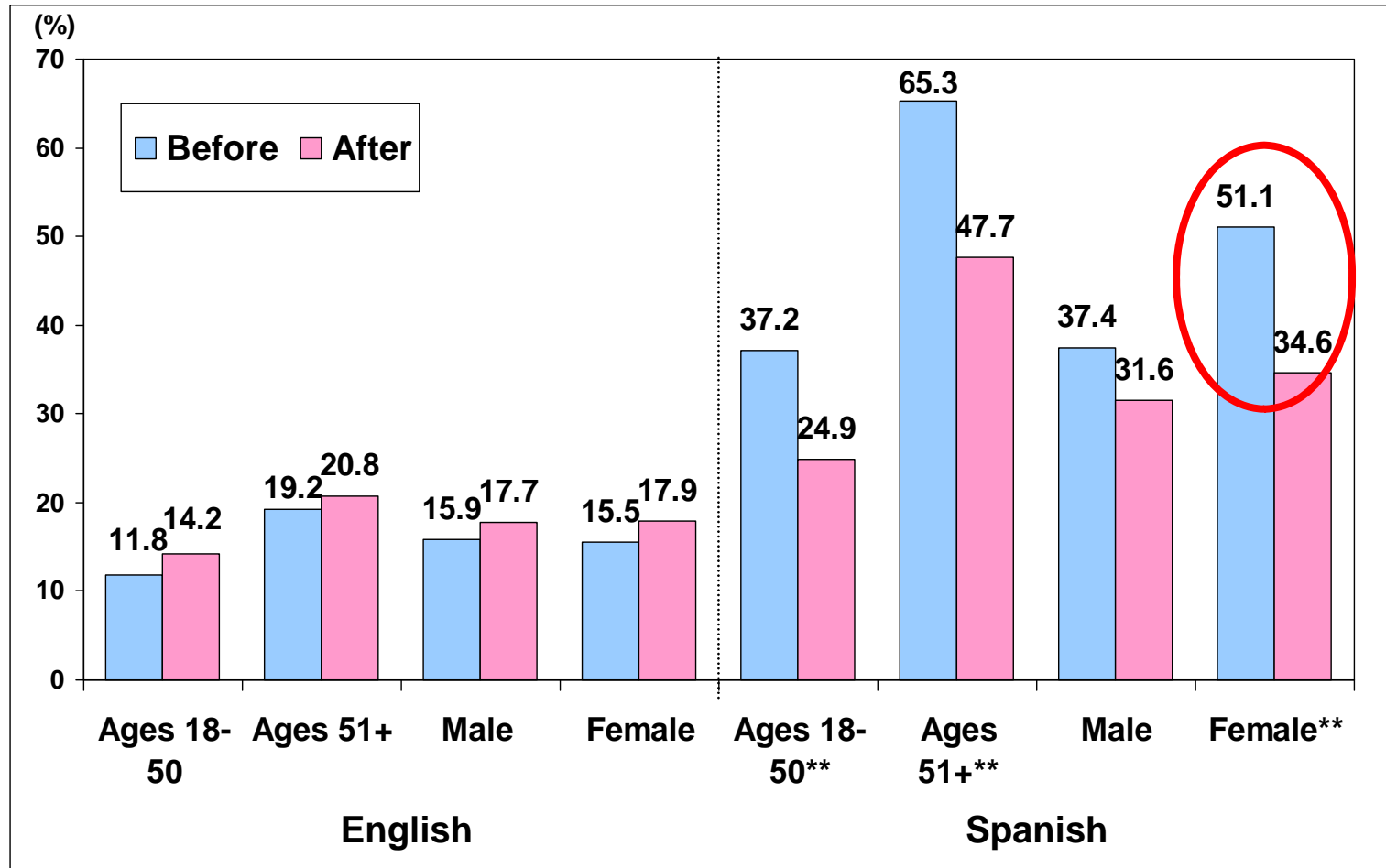
Experiment results – cont'd

Logistic regression of fair/poor health

| Effect | Odds ratio | |
|---------------------------|-----------------|----------------|
| | Wo/ interaction | W/ interaction |
| Intercept | 0.350 *** | 0.310 *** |
| Age (yrs) | 1.004 | 1.005 |
| Gender (Male) | 0.827 | 0.828 |
| Education (Some college+) | 0.528 *** | 0.528 *** |
| Asthma | 2.110 *** | 2.095 *** |
| Diabetes | 3.671 *** | 3.627 *** |
| Hypertension | 2.080 *** | 2.078 *** |
| Heart disease | 2.778 *** | 2.715 *** |
| Language (English) | 0.259 *** | 0.328 *** |
| Location (Before) | 1.358 ** | 1.650 *** |
| Language*Location (E*B) | - | 0.619 * |

Experiment results – cont'd

Dist. of fair/ poor health by location, language, age & gender



Implications

- ▶ **Question order may affect estimates differently by language**
 - ▶ English interviews vs. Spanish interviews
 - ▶ Gender difference in order effect for Spanish
 - ▶ No age difference in order effect (c.f., Knauper, Schwarz, Park and Fritsch, 2007)
- ▶ **Health disparity magnitudes?**

Implications – cont'd

- ▶ **Cultural equivalence is more than translational equivalence**
 - ▶ Conventions in one language do not hold in another
- ▶ **Why?**
 - ▶ Not sure...
 - ▶ Cultural differences?
 - ▶ Familiarity with the item?
 - ▶ Need frames of reference to evaluate general health?
- ▶ **Where to place general health?**

Future research

- ▶ **Where can we find the other half of differences?**
 - ▶ What if asked after more conditions?
 - ▶ Mode effect?
 - ▶ True difference?
- ▶ **Scale translation?**
 - ▶ Equivalent implicature and functionality across languages
 - ▶ Culturally appropriate scales
 - ▶ **Excellent**, Very good, Good, **Fair**, Poor
- ▶ **Quantitative approach**
 - ▶ Psychometrics

Thank you!

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