Interactive voice response system pre-screening for depression with Spanish-speaking populations

APHA Conference Presentation

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Presenter Disclosures

- Former business relationship (within last 12 months)
- Patents received or pending
- Stock ownership

- NOTE: none of the data utilized for this study was from a former or current employer.

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Overview

Interactive Voice Response (IVR) phone calls gather responses and give real-time feedback to a variety of health-related conditions

Specifically, speech-recognition logic allows for a level of "understanding" through the call flow.

Focus: IVR utilization of the PHQ-2 for Spanish-speaking populations

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Research question

Are (and “how are”) Spanish-speaking populations interacting with IVR technology for PHQ-2 depression screenings?

- Mixed methods – quantitative and qualitative (grounded theory-based) components
- Two-part analysis

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PHQ-2 screening questions

Over the *last 2 weeks*, how often have you been bothered by any of the following problems?	Not at all	Several days	More than half the days	Nearly every day
(a) Little interest or pleasure in doing things	☐	☐	☐	☐
(b) Feeling down, depressed, or hopeless	☐	☐	☐	☐

Analysis Components:

Quantitative component compares phone-participant engagement rates for Spanish speakers with engagement rates of English speakers.

Qualitative component assesses feedback on several translations of the PHQ-2 questions from Spanish-speaking focus group participants.

Background

Analysis of existing depression screening tools in Spanish (those outside of the PHQ set) have shown that “although the inventory has internal consistency, it lacks cultural validity and application due to translations that ignore semantic differences between Spanish and English” (Kerr, p. 350).

The shortened version of the screener (from any major diagnostic tool) is untested with Spanish-speaking populations and may present its own unique cultural-barrier.

The difference in specificity between the English and Spanish versions could “represent true differential item functioning in U.S. Spanish speakers compared with English speakers, an explanation supported by studies suggesting that U.S. Latino patients with similar levels of depression are more likely to endorse anhedonia (the specific question lacking specificity) than non-Hispanic whites (Reuland, Watkins, Bradford, Blanco, & Gaynes, p. 460).

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Is engagement an issue?

Engagement = Staying on the phone for both PHQ-2 questions.

Answers to these clinical screening questions were not collected in the data set.

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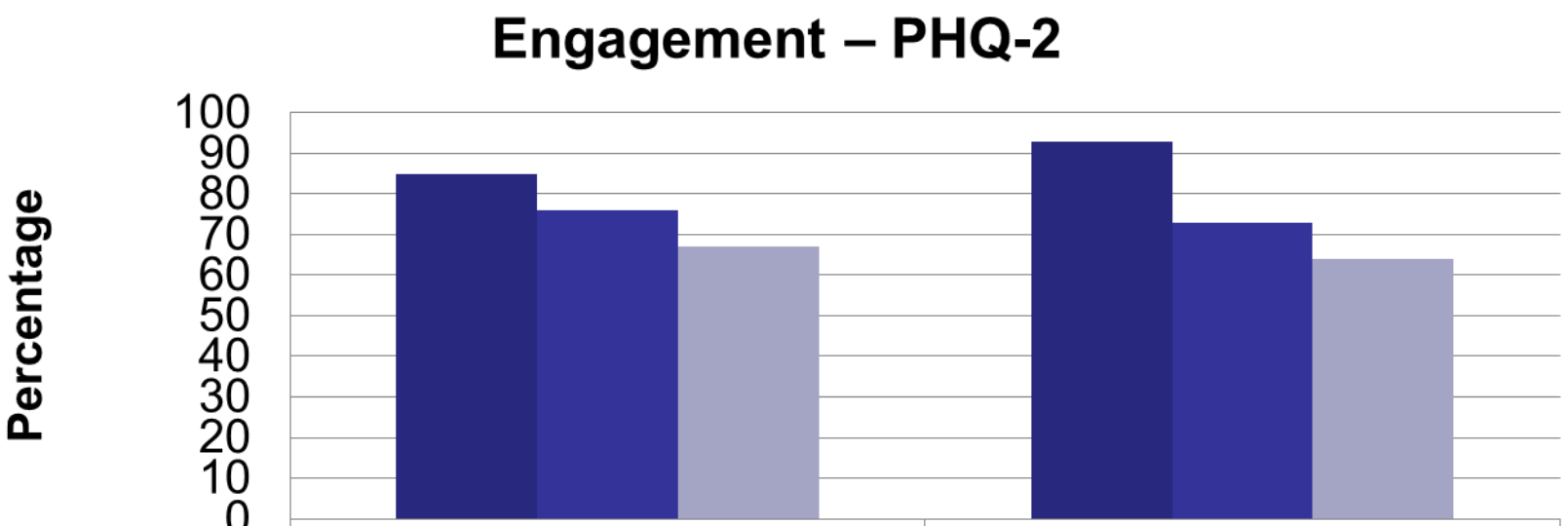
Rates by Language



	English-Speakers	Spanish-Speakers
Entry	85	93
Question 1	76	73
Question 2	67	64

Qualitative Detail

- Participants were selected utilizing snowball sampling technique
- Unit of analysis was the individual
- Participants were recruited through word of mouth in the Lawrence, Massachusetts area. Over time, this region grew to include the Metro-West region of Massachusetts.
- **Interviews and focus groups conducted in March – May of 2010 (total n = 32),**
- **Thoughts on personal experience with depression and attitudes toward treatment were also assessed (n=18).**

Characteristic By Percentage	Interview Respondents (n = 18) (%)	Focus Group Respondents (n = 14) (%)
Gender		
Female	86	80
Male	14	20
Age		
Mean Age (standard deviation)	34.42 (9.38)	35.55 (11.10)
Level of Education - Highest Degree Status		
No High School	0.5	0
High School or Equivalent	51	67
Some College	10	11
Associate Degree	17	4
Bachelors Degree	21	14
Other Professional Degree	0.5	4
Ethnicity Self-Definition		
Cuban	1	20
Dominican	8	10
Puerto Rican	86	60
Mexican	3	10
Latin American	2	0

Call types

- Two Spanish call recordings were played for the group:

CALL ONE - Pfizer
• NURSE INTRO: **We'd like to make sure you are staying healthy so we have two questions for you.**
• NURSE (PHQ1): Over the last two weeks, **how often have you been bothered by having little interest or pleasure in doing things? Please say 'not at all', 'several days', 'more than half the days' or 'nearly every day.**
• MEMBER: Nearly every day.
• NURSE (PHQ2): And, over the last two weeks**, how often have you been bothered by feeling down, depressed or hopeless? Please say 'not at all', 'several days', 'more than half the days' or 'nearly every day.**
• MEMBER: Every day.
• NURSE: Very well/good (neutral). Thank you for taking [also literally yourself] the time to speak with us. Have a good day. Goodbye. (fade out)

CALL TWO – Speech-optimized
• NURSE INTRO: **We'd like to help you feel better. To do that, we'd like to ask you two quick questions. Let's get started.**
• NURSE (PHQ1): Over the last two weeks, **with what frequency has having little interest or pleasure in doing things bothered you? Please say 'never', 'some/several days', 'almost every day' or 'every day'.**
• MEMBER: Nearly every day.
• NURSE (PHQ2): And, over the last two weeks**, with what frequency have you been bothered by feeling down, depressed or hopeless [more literal: has feeling down, depressed or hopeless bothered yourself]? Please say 'never', 'some/several days', 'almost every day' or 'every day**'.
• MEMBER: Every day.
• NURSE: Very well/good (neutral). Thank you for taking [also literally yourself] the time to speak with us. Have a good day. Goodbye. (fade out)

Call Differences

CALL ONE - Pfizer	CALL TWO – Speech-optimized
• Friendly female voice • **Neutral Spanish** • **Different response set** • **Less intonation changes**	• **Different friendly female voice** • **Neutral Spanish** • **Different response set** • **Minor Wording changes** • **More intonation changes**

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Results – Theme 1

Results – Theme 1

- Participants suggested that they would feel more comfortable responding to a person (recorded or live) who was of their same ethnic group.

"if you said to me that people around the world have depression – they just call it different things in Cuba, Puerto Rico… You know, hit on everything and everybody, I guess. This would make me say yeah, I'll say yes to that then".

Noting the limitations of this intensely-personal approach, several participants suggested instead that a warm, female voice would suffice as long as she didn't sound too much like a particular ethnic group.

Results – Theme 2

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Results – Theme 2

- Women universally felt that the warm, female voice was key to answering the depression questions honestly
  - Stronger for those women who noted that they had had a personal experience with depression.
- Four participants noted that support should reference their family in the question set.

"You know if you don't have her sounding nice, like she knows, you know, and she cares, I wouldn't say it. She has to be okay with it and you can tell. You really can"

"She sounds mean."

Results – Theme 3

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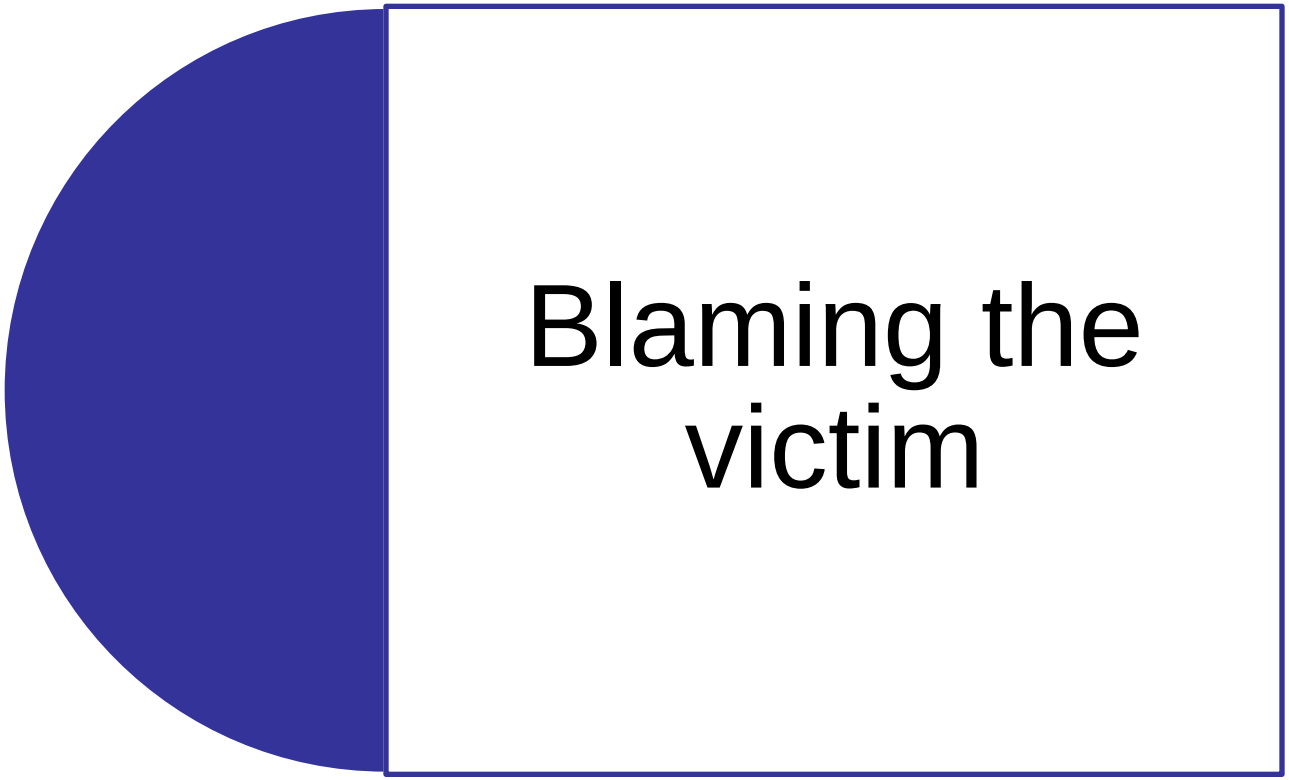
Results – Theme 3

- Stigmatization fell in to three sub-categories:
  - professional (clinical stigmatization)
  - personal alienation
  - cultural stigmatization

"If you ask me, I am not going to say anything about depression – that goes in your record and you can never get rid of it"

"My mother would NEVER answer this. NEVER. She would be scared that you would even ask. I don't know what she would be worried about – you know – she just would think that it was always a thing to worry about. You can't let someone think that you don't have it under control. That God isn't giving you what you need. You have what you need and if you don't – wow do you not say it! My father would just say no, he wouldn't even listen but my mother would worry for weeks about what you even asked. Like 'why did you ask me'. She would pray, pray, pray."

Results – Theme 4



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Results – Theme 4

- Participants in the interview setting (and not in the focus groups) felt that the Pfizer version of the content used a “blame the victim” approach.

“rigid responses”

the “way you have to say something like on a scale like that – what if you don’t know what that scale really means. I mean, what is that meaning anyway like that with ‘more than half days’. Who can count!”.

Summary Findings

- Language matters but maybe not the way we think…
  - Small n = no multivariable regression models (yet)
  - If we control for demographic factors, will self-identified ethnic group be significant?
  - Was it the change to the response set or the change to the voice that mattered?
  - Will this load on the same factors when it is modified?
- Ethnicity matters too but again, maybe not the way we think…
  - Results did not break down universally by “Spanish-speakers”
- What we didn’t ask probably plays a role:
  - Self-identified ethnic group may be a proxy for level of acculturation
  - Where was someone born?
  - Length of time in the country?
  - Co-morbid conditions?

Recommendations

Since engagement is an issue and populations are reporting serious barriers to screening, further work should be done.

Additional models looking at more variables associated with age, gender, support system and language-preference are key.

Limitations

- Small n
- Inter-rater reliability may be a factor
- Regionality
- Limited data set

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