Depression and Latinos

YB & MG

Health Science 503
Dr. Saleem Watson
Depression and Latinos Outline

I. A statement of the research problem
II. A description of the data collection methodology
III. A description of the statistical methodology
IV. A description of the results of the statistical analyses
V. A description of the conclusions from your study
Depression

- Depression may be described as feeling sad, blue, unhappy, miserable or down in the dumps. Most of us feel this way at one time or another for short periods.
- However, true clinical depression is a mood disorder in which feelings of sadness, loss, anger, or frustration interfere with everyday life for an extended period of time.
I. Statement of the Research Problem

- According to the National Institute of Mental Health, depression affects about 10% of American adult population each year.
- It is the leading cause of disability in the United States and developed countries around the world.
- Research indicates that depression rates are higher in people with poor socioeconomic conditions,
- Furthermore low income Latinos are least likely to recognize depression, seek care, or get treatment
- According to the World Health Organization (WHO), depression is the leading cause of years of life lived with disability and can result in serious long-term functional impairment.
Latinos and Depression Statistics

- Latinos are considered a high-risk group for mental health disorders such as depression, anxiety and substance abuse.
- It is estimated that 3% to 5% of all Latinos suffer from depression at least once in their lifetimes.
- Last year, more than 5% of all Hispanics in the United States suffered from an episode of clinical depression.
- More Latina women (46%) have suffered from a clinical or major depression episode than Latino men (20%).
- Only around 10% of all Hispanics who suffer from a mental disorder seek help from mental health specialists.
Risk factors associated with depression:

- Age
- Gender
- Ethnicity
- Marital Status
- Educational Level
- Post-partum Depression
- Hereditary
- Socioeconomic Status
- Migration
  - Acculturation Issues
De Blanco y Negro a Colores: Entendiendo la Depresión

**Funded By:** This project was funded by The Lilly Foundation

**Conducted By:** The National Council of La Raza (NCLR), largest national Hispanic civil rights and advocacy organization in the United States.

**Evaluated By:** The National Council of La Raza/California State University Long Beach Center for Latino Community Health Evaluation, and Leadership Training, the evaluation arm of NCLR.

**Project Overview:** This project was conducted in two phases, formative focus groups and educational sessions (charlas) conducted with three different community collaborators: Abriendo Puertas in Miami, La Fe Care Center in El Paso and Tiburcio Vasquez in Union City, California.
II. Data Collection Methodology

Study Group

- Convenience sample study
- The data was collected during educational sessions in which participants were consented before participating and then asked to complete a one-time questionnaire.
- The questionnaire consisted of 42 questions total - including 10 questions from the validated PHQ-9 Depression Scale.
- The questionnaire was self-administered and project staff was available for questions and assistance if needed.
- Upon completion the completed questionnaires were collected by project staff.
- A total of N=380 participants completed the questionnaire.

Sampling Issues

- This was a convenience sample of participants who were recruited from 3 different community-based organizations.
Data Collection Methodology

Variables

- Age
- Gender
- Country of Origin
- Primary Language
- Marital Status
- Family history of mental illness
- Educational Level
- When was the last time examined by a doctor
- medical insurance
- visit a doctor regularly?
- Health conditions
- PHQ9- Depression scale questions
From Black & White to Colors: Understanding Depression
Project Evaluation

Your opinion is very important to us. Please respond to the following questions.

Mark an “X” by the answer that best fits your response:

1. What is your gender? ☐ Female ☐ Male ☐ Other: ______________________
2. How old are you? ___________
3. What is your primary language? ☐ English ☐ Spanish ☐ Other: ____________________
4. Are you bilingual (English/Spanish)? ☐ Yes ☐ No ☐ Bilingual with another language: ______________________
5. What country were you born in? _____________________________________________
   If born outside the United States, how many years have you lived in the United States? _________
6. What country was your: …mother born in? ___________ ☐ Don’t know
   …father born in? ___________ ☐ Don’t know
7. What is your marital status? ☐ married ☐ single ☐ living with partner
   ☐ widower(e) ☐ divorced ☐ separated
8. If you have children, how many? _____
9. What is your height? ________ meters/centimeters or ________ feet/inches
10. How much do you weigh? ________ kilograms or ________ pounds
11. What are your children’s ages and genders? Age Gender
    ______ ☐ F ☐ M
    ______ ☐ F ☐ M
    ______ ☐ F ☐ M
    ______ ☐ F ☐ M
12. What is the highest education level you achieved? (Please mark one)
    ☐ I have not attended school ☐ High School Equivalency Diploma (GED)
    ☐ Elementary School ☐ Technical/Vocational School
    ☐ Middle School ☐ Some university/Associate Degree
    ☐ High School ☐ University Degree/Licenues
    ☐ High School Diploma ☐ Other: _______________________________________
13. Please choose the option that best describes where you live:
    ☐ house ☐ share house ☐ apartment ☐ garage ☐ hotel
    ☐ hostel ☐ car ☐ share apartment ☐ I don’t have anywhere to live
# Patient Health Questionnaire (PHQ-9)

**NAME:**

Over the last 2 weeks, how often have you been bothered by any of the following problems?

*Use "+" to indicate your answer*

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Little interest or pleasure in doing things</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Feeling down, depressed, or hopeless</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>3. Trouble falling or staying asleep, or sleeping too much</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>4. Feeling tired or having little energy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Poor appetite or overeating</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Feeling bad about yourself—or that you are a failure or have let yourself or your family down</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Trouble concentrating on things, such as reading the newspaper or watching television</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Moving or speaking so slowly that other people could have noticed, or the opposite—being so fidgety or restless that you have been moving around a lot more than usual</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Thoughts that you would be better off dead, or of hurting yourself in some way</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**DATE:**

**TOTAL:**

(add columns: blank)  

(Healthcare professional: For interpretation of PHQ-9, please refer to accompanying scoring card)

**10. If you checked off any problems, how**

**difficult**

**have these problems made it for**

**you**

**to do your work, take care of things at**

**home**, or get along with other people?

<table>
<thead>
<tr>
<th></th>
<th>Not difficult at all</th>
<th>Somewhat difficult</th>
<th>Very difficult</th>
<th>Extremely difficult</th>
</tr>
</thead>
</table>

PHQ-9 is adapted from PRIME MD TODAY, developed by Drs Robert L. Spitzer, Janet B.W. Williams, Kurt Kroenke, and colleagues, with an educational grant from Pfizer Inc. For research information, contact Dr Spitzer at rls@cornell.edu. Use of the PHQ-9 may only be made in accordance with the Terms of Use available at http://www.pfizer.com. Copyright ©1998 Pfizer Inc. All rights reserved. PRIME MD TODAY is a trademark of Pfizer Inc.
Participant Demographics

- The majority of the participants was female (76%) and the mean age was 48 years with a range from 20 to 96 years.
- Spanish was the primary language for 88% of the participants, and the majority (73%) was not born in the U.S.
- Among those who were foreign born, duration of residence within the U.S. varied with 40% living in the U.S. for less than 10 years, 29% for 11 to 20 years, and 31% for greater than 20 years.
• When analyzing mean scores of depression between men and women based on score of PHQ9 scale— we found that the mean was 5.26 for females and 4.35 for males.

• This analysis demonstrates that women are more likely to suffer from depression than men.

• Please note only 179 out of 380 participants completely filled the PHQ9 and were included in this analysis.
SPSS Analysis – T-test

H0: \( \mu_x = \mu_y \)

There is no difference in levels of depression between participants of different education levels.
- High School Diploma
- University Graduate

H1: \( \mu_x \neq \mu_y \)

There is a difference in level of depression between participants of different educational levels.
### Independent T-Test Analysis

#### Group Statistics

<table>
<thead>
<tr>
<th>Q12a. Level of education</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHQ9 Score High School Diploma</td>
<td>22</td>
<td>7.6364</td>
<td>7.49849</td>
<td>1.59890</td>
</tr>
<tr>
<td>PHQ9 Score University Degree/Licensure</td>
<td>16</td>
<td>1.3125</td>
<td>2.62599</td>
<td>.55650</td>
</tr>
</tbody>
</table>

#### Independent Samples Test

<table>
<thead>
<tr>
<th>PHQ9 Score</th>
<th>Levene's Test for Equality of Variances</th>
<th>t-Test for Equality of Means</th>
<th>95% Confidence Interval of the Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>Sig.</td>
<td>t</td>
</tr>
<tr>
<td>Equal variances not assumed</td>
<td>3.659</td>
<td>27.580</td>
<td>.001</td>
</tr>
</tbody>
</table>
We reject the null hypothesis

Based on the 95% confidence interval, there is a significant difference.

(2.34 – 9.87)
Statistical Methodology

- **SPSS Analysis – One-way Anova**
- **H0**: $\mu_1 = \mu_2 = \mu_3 = \mu_4 = \mu_5 = \mu_6 = \mu_7 = \mu_8 = \mu_9 = \mu_{10}$
- **H1**: $\mu_1 \neq \mu_2 \neq \mu_3 \neq \mu_4 \neq \mu_5 \neq \mu_6 \neq \mu_7 \neq \mu_8 \neq \mu_9 \neq \mu_{10}$
- This analysis was used to analyze the within and between group differences of educational levels and level of depression based on the PHQ9 Depression Scale.

- Variables used in assessing Educational Level

```
1 = "No Schooling"
2 = "Elementary School"
3 = "Middle School"
4 = "High School"
5 = "High School Diploma"
6 = "GED - High School Equivalent"
7 = "Technical/Vocational School"
8 = "Some University/AA Degree"
9 = "University Degree/Licentiate"
10 = "Doctor"
999 = "No Answer"
```
### ANOVA

<table>
<thead>
<tr>
<th>PHQ9 Score</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>554.395</td>
<td>9</td>
<td>61.599</td>
<td>1.868</td>
<td>.060</td>
</tr>
<tr>
<td>Within Groups</td>
<td>5639.053</td>
<td>171</td>
<td>32.077</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>5193.448</td>
<td>180</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Education Level</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Some University/AA Degree</td>
<td>.33333</td>
<td>2.34439</td>
<td>1.000</td>
<td>-7.4432 8.1099</td>
</tr>
<tr>
<td>University Degree/Licensure</td>
<td>5.0283</td>
<td>1.97310</td>
<td>.532</td>
<td>-1.5241 11.5658</td>
</tr>
<tr>
<td>Other</td>
<td>-1.3333</td>
<td>3.58111</td>
<td>1.000</td>
<td>-13.2122 10.5455</td>
</tr>
<tr>
<td>High School Diploma</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Schooling</td>
<td>.20779</td>
<td>2.49197</td>
<td>1.000</td>
<td>-3.0583 8.4739</td>
</tr>
<tr>
<td>Elementary School</td>
<td>3.20303</td>
<td>1.43128</td>
<td>1.000</td>
<td>-1.5447 7.9507</td>
</tr>
<tr>
<td>Middle School</td>
<td>1.85859</td>
<td>2.27224</td>
<td>1.000</td>
<td>-5.6786 9.3958</td>
</tr>
<tr>
<td>High School</td>
<td>1.30303</td>
<td>1.82510</td>
<td>1.000</td>
<td>-4.7510 7.3571</td>
</tr>
<tr>
<td>GED - High School Equivalent</td>
<td>4.09091</td>
<td>1.73144</td>
<td>.867</td>
<td>-1.6525 9.6343</td>
</tr>
<tr>
<td>Technical/vocational School</td>
<td>1.83636</td>
<td>1.92287</td>
<td>1.000</td>
<td>-4.5420 8.2147</td>
</tr>
<tr>
<td>Some University/AA Degree</td>
<td>1.63636</td>
<td>2.27224</td>
<td>1.000</td>
<td>-5.9006 9.1736</td>
</tr>
<tr>
<td>University Degree/Licensure</td>
<td>5.32388*</td>
<td>1.88680</td>
<td>.044</td>
<td>.0652 12.5825</td>
</tr>
<tr>
<td>Other</td>
<td>-.03030</td>
<td>3.53430</td>
<td>1.000</td>
<td>-11.7539 11.6933</td>
</tr>
<tr>
<td>GED - High School Equivalent</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Schooling</td>
<td>-3.88312</td>
<td>2.49197</td>
<td>1.000</td>
<td>-12.1492 4.3830</td>
</tr>
<tr>
<td>Elementary School</td>
<td>-3.88758</td>
<td>1.43128</td>
<td>1.000</td>
<td>-5.6366 3.8508</td>
</tr>
<tr>
<td>Middle School</td>
<td>-2.23232</td>
<td>2.27224</td>
<td>1.000</td>
<td>-9.7695 5.3049</td>
</tr>
<tr>
<td>High School</td>
<td>-2.78788</td>
<td>1.82510</td>
<td>1.000</td>
<td>-3.8419 3.2662</td>
</tr>
<tr>
<td>High School Diploma</td>
<td>-4.09091</td>
<td>1.73144</td>
<td>.867</td>
<td>-9.8343 1.6525</td>
</tr>
</tbody>
</table>
One-way Anova Comparison

Interestingly when comparing the within and between group variance – the only significant difference was between:
- Participants with a High School Diploma
- Participants with a University Degree

(.0652 – 12.5825)
Statistical Methodology

◆ SPSS Analysis – T-test

◆ H0: \( \mu_x = \mu_y \)
  ◆ There is no difference in gender and level of depression.

◆ H1: \( \mu_x \neq \mu_y \)
  ◆ There is a difference in gender and level of depression.
### Independent Sample T-test

**Group Statistics**

<table>
<thead>
<tr>
<th>Q1. Gender</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHQ9 Score</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>145</td>
<td>5.2552</td>
<td>5.88631</td>
<td>.48717</td>
</tr>
<tr>
<td>Male</td>
<td>34</td>
<td>4.3529</td>
<td>5.93930</td>
<td>1.02716</td>
</tr>
</tbody>
</table>

**Independent Samples Test**

<table>
<thead>
<tr>
<th>PHQ9 Score</th>
<th>Levene's Test for Equality of Variances</th>
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<th>95% Confidence Interval of the Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>Sig.</td>
<td>t</td>
</tr>
<tr>
<td>Equal variances assumed</td>
<td>.086</td>
<td>.757</td>
<td>.804</td>
</tr>
<tr>
<td>Equal variances not assumed</td>
<td>.794</td>
<td>48.949</td>
<td>.431</td>
</tr>
</tbody>
</table>
We fail reject the null hypothesis

Based on the sample, there no significant difference between gender and depression.

95% confidence interval

( -1.312, 3.18)

34 males was a small number to compare to 145 females.
Conclusions from this Study

This data was collected to evaluate awareness of depression in the Latino Community.

- The PHQ-9 has traditionally been used in clinical settings and, as such, clinicians are instructed to verify all responses with participants, and to make a diagnosis based on a comprehensive set of clinical findings. Therefore, these results may not adequately capture the prevalence of depression at the community-level and should be interpreted with caution.

- Lower acculturated Latinos may be at increased risk for depression-related symptoms. For example, in this study, individuals born outside of the U.S., those who had been in the U.S. 10 years or less, and those who primarily speak Spanish had significantly higher depression-related scores.

- Finally, the finding that BMI was not associated with depression-related symptoms is very interesting. Over half of this sample (55%) was overweight or obese according to BMI, whereas only 44% indicated they had a weight problem.
This study was not a clinical study with controlled environments, but a community level intervention. With that said, there was no control group to be analyzed or compared.

Also, the educational session environment affected the completeness of the questionnaires analyzed.
Test Questions

1. Which gender is most likely to be diagnosed with depression?

Males or Females

2. Community level interventions with convenience samples should not be used to make inferences about the general population.

True or False