



Acculturation effects on Body Mass Index and Body Fat Percentage

Luis Alberto Magallanes ², Louis D. Brown, Ph.D. ¹ Denise Vasquez, MPH¹

1. School of public Health, The University of Texas Health Science Center at Houston (UT Health) 2. Department of Psychology, The University of Texas at El Paso



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Background & Purpose

Moving into the United States from Latin America may improve socio economic status and employment (Akresh, 2007). However, previous studies have found a significant relation between acculturation and higher BMI scores, especially among Hispanic immigrants (Van Hook, Quiros, Frisco, & Fikru 2016) (Park, Neckerman, Quinn, Weiss & Rundle, 2008) (Akresh, 2007). The border area might present a unique population due to the frequency of border crossings (Secretariat of Foreign Relations, Mexico, 2014). The purpose of this study was to assess if there is a relationship between acculturation and BMI scores following a nutrition and exercise intervention in a population with low SES located on the US Mexico border.

Methods

Analyzed data collected through the **Healthy Fit Program** from April 2015 through August 2016. **The Healthy Fit program** is a University-Public Health Department partnership supported by Texas' Medicaid 1115 waiver.

The focal population were uninsured individuals and Medicaid beneficiaries who were 18 or older.

However, Insured participants were not excluded from the study.

The interview collected basic demographics and various health-related information to determine eligibility of resources provided by the program.

It also collected body measurements such as:

- blood pressure
- BMI
- body fat percentage
- Muscle mass percentage .

Participants who had a BMI higher than 25 or had high blood pressure received heart health “foto novelas” and referrals to community-based exercise activities .

Our analysis examined how Language preference, English proficiency, SES, and Education level would affect:

- BMI and Body Fat Percentage (BFP) at baseline
- How Referrals for exercise activities, and “foto novelas” would affect their changes on BMI and BFP after twelve months.



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Results

- N=206
- 98% of the participants self-identify as Hispanic, with a mean age of 46 (SD=13.23).

50.49% indicated being in the U.S for less than 10 years, and when asked to indicate how well they spoke English 47.03% reported speaking English poorly, 46% reported writing English poorly, and 45% reading poorly.

At baseline 47.32% of participants were obese, at twelve months 48.51% of participants were obese.

| | English Proficiency | Language Preference | Born in the U.S | Years in the U.S | Home Income | Education Level | Acculturation | |
|---------------|---------------------|---------------------|-----------------|------------------|-------------|-----------------|---------------|---------|
| BMI | -0.19601 | -0.12557 | -0.0335 | 0.06739 | -0.053 | -0.22739 | -0.15719 | R-score |
| | *0.0056 | *0.0764 | 0.6366 | 0.4048 | 0.4572 | *0.0012 | *0.027 | P-Value |
| Change in BMI | 0.20556 | 0.21286 | 0.17714 | -0.0159 | 0.05862 | 0.18307 | 0.11561 | |
| | *0.0039 | *0.0027 | *0.0125 | 0.8458 | 0.4144 | *0.0102 | 0.1075 | |
| BFP | -0.22552 | -0.22175 | -0.0554 | 0.0751 | -0.2759 | -0.19507 | -0.18803 | |
| | *0.0021 | 0.0024 | 0.4528 | 0.3744 | 0.0002 | 0.0078 | 0.0108 | |
| Change in BFP | 0.21539 | 0.28534 | 0.21705 | -0.1313 | 0.12235 | 0.20292 | 0.1737 | |
| | *0.0038 | *<.0001 | *0.0032 | 0.1233 | 0.1018 | *0.0062 | *0.0201 | |

- Acculturation is negatively associated with BMI/BFP at baseline.
- SES negatively associated with BMI/BFP at baseline
- Acculturation positively associated with SES.

| Variable | N | Mean | Std Dev |
|----------|----|---------|---------|
| bmic | 95 | -0.154 | 1.35286 |
| bfpc | 83 | -1.3394 | 3.1915 |

| Variable | N | Mean | Std Dev |
|----------|-----|---------|---------|
| bmic | 100 | 0.16809 | 1.42511 |
| bfpc | 96 | -0.0253 | 4.14905 |

Acculturation positively associated with weight gain
Unacculturated are losing weight but not acculturated.

Conclusion

Previous studies have indicated that the amount of time spent in the United States and the level of acculturation to the U.S has a negative effect on an immigrant’s health, specifically on BMI.

We think the counterintuitive finding that acculturation is negatively related to BMI/BFP is because of the SES confound.

Further analysis into the relationship of acculturation and BMI on a border setting needs to be addressed.

The border provides a unique population especially when looking into acculturation since there appears to be a shared community between the city in the US and the city in Mexico.

- Factors such as time spend in the U.S had no significant correlation with these population, even though previous studies, (Park, Neckerman, Quinn, Weiss & Rundle, 2008) ,found a positive correlation between time in the U.S and BMI

Factors such as time spent in the border city in Mexico could provide greater insight into future studies.

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