

Development and Pilot Testing of the BAILAMOS[©] Dance Program and its Impact on Physical and Cognitive Function in Older Latinos

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Overview

- Background info about Latinos
- Benefits & rates of physical activity
- Older Latino research
 - CAPACES
 - BAILAMOS



Background information: Latinos



Older Latinos in the US

- Older non-Latino Whites
 - From 2000 to 2009
 - 55+: 22% increase
 - 65+: 10% increase
- Older Latinos
 - From 2000 to 2009
 - 55+: 67% increase (now 5.7 million)
 - 65+: 59% increase (now 2.7 million)



Why exercise?



Exercise and the Brain

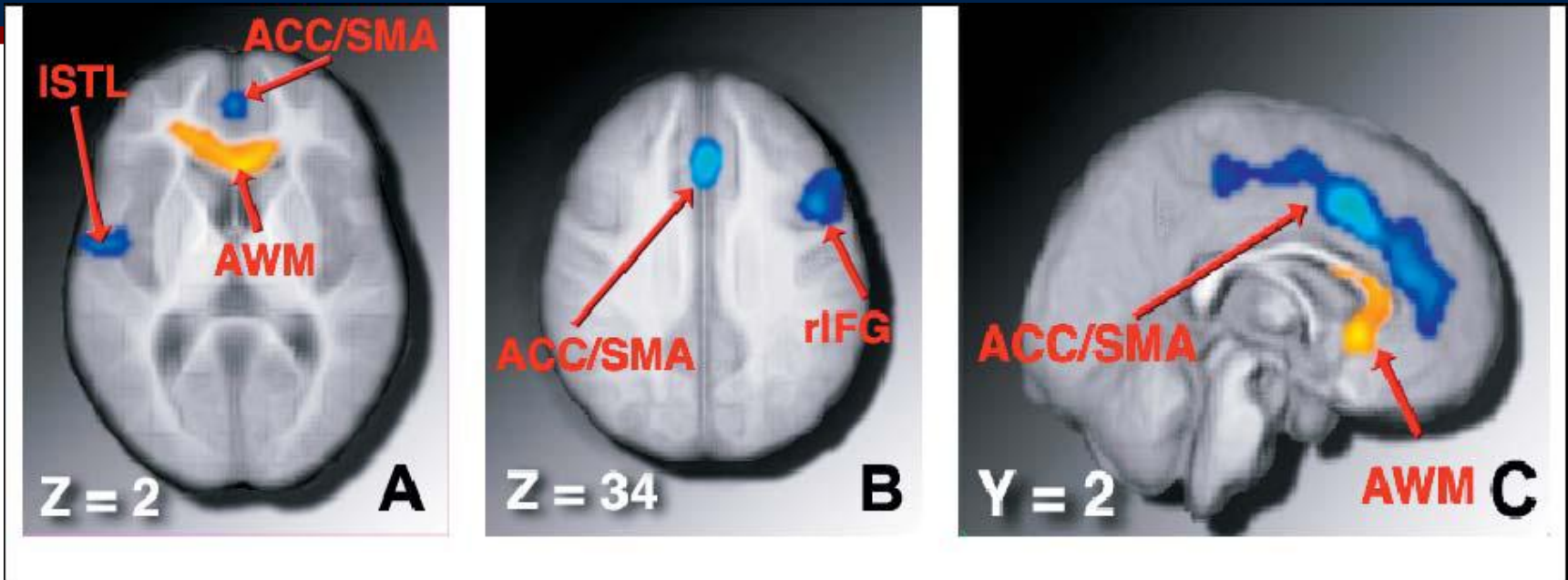


Figure 1. Regions showing a significant increase in volume for older adults who participated in an aerobic fitness training program, compared to nonaerobic (stretching and toning) control older adults.

Blue regions: Gray matter volume was increased for aerobic exercisers, relative to nonaerobic controls.

Yellow regions: White matter volume was increased for aerobic exercisers, relative to controls.

The Bad News

(Neighbors, Marquez, & Marcus, AJPH 2008:
Broken down by Latino subgroup)

Percentages (With Standard Errors) of Socio-Demographic Characteristics by Ethnic/Racial Group							
	Non-Latino White (n = 83,813)		Non-Latino Black (n = 17,533)		Latino (n = 20,696)		
Leisure Time Physical Activity							
No LTPA	35.8	(0.4)	49.3	(0.7)	54.0	(0.5)	
Male	33.7	(0.4)	44.1	(0.9)	51.2	(0.7)	
Female	37.7	(0.4)	53.4	(0.8)	56.7	(0.7)	
Meets Recommendation							
Male	41.7	(0.4)	35.8	(0.9)	29.4	(0.6)	
Female	34.9	(0.3)	23.4	(0.6)	23.1	(0.6)	

Older Latinos' PA & Disability

- Latinos aged 65-74 are 46% less likely to engage in leisure time PA than older non-Latino whites
- Most rapid growth in disability is projected to be African Americans and Latinos
- Of Latinos 65 years and over, 48.5% have a disability
 - High incidence of diabetes and obesity
 - Lack of health care coverage

Why don't Older Latinos exercise?



Barriers

- Personal
 - lack of time (care-giving/work)
- Sociocultural
 - gender roles for activity
 - no history of exercise
- Environmental/Policy
 - lack of programs
 - neighborhood safety concerns



Sample Research



Cognition and Physical Activity Community Elderly Study (*CAPACES*)

- Rush University, College of Nursing
 - JoEllen Wilbur, PhD, Principal Investigator
 - Louis Fogg, PhD
 - Beth Staffileno, PhD
 - Ruby Hoyem, PhD
 - Martha Clare Morris, PhD (Internal Medicine)
 - Robert Wilson, PhD (RADDC)
 - Alexis Manning, MA
- University of Illinois at Chicago, Kinesiology
 - David X. Marquez, PhD
 - Eduardo E. Bustamante, BS



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CAPACES

CHAMPS - Most Frequently Reported LTPA

	Total <i>n</i> (%)	Gender <i>n</i> (%)		Age <i>n</i> (%)		
	(<i>n</i> = 173)	Male (<i>n</i> = 46)	Female (<i>n</i> = 127)	50-59 (<i>n</i> = 53)	60-69 (<i>n</i> = 52)	70+ (<i>n</i> = 68)
Walk to do Errands	123 (71.1%)	39 (88.6%)	84 (66.1%)	39 (73.6%)	34 (65.4%)	50 (73.5%)
Walk Leisurely	117 (67.6%)	32 (72.7%)	85 (66.9%)	38 (71.7%)	33 (63.5%)	46 (67.6%)
Stretching or Flexibility Exercises	97 (56.1%)	24 (54.5%)	73 (57.5%)	25 (47.2%)	30 (57.7%)	42 (61.8%)
Dancing	53 (30.6%)	16 (36.4%)	37 (29.1%)	10 (18.9%)	16 (30.8%)	27 (39.7%)
Walking Fast	53 (30.6%)	17 (38.6%)	36 (28.3%)	20 (37.7%)	16 (30.8%)	17 (25%)

Dance as Exercise

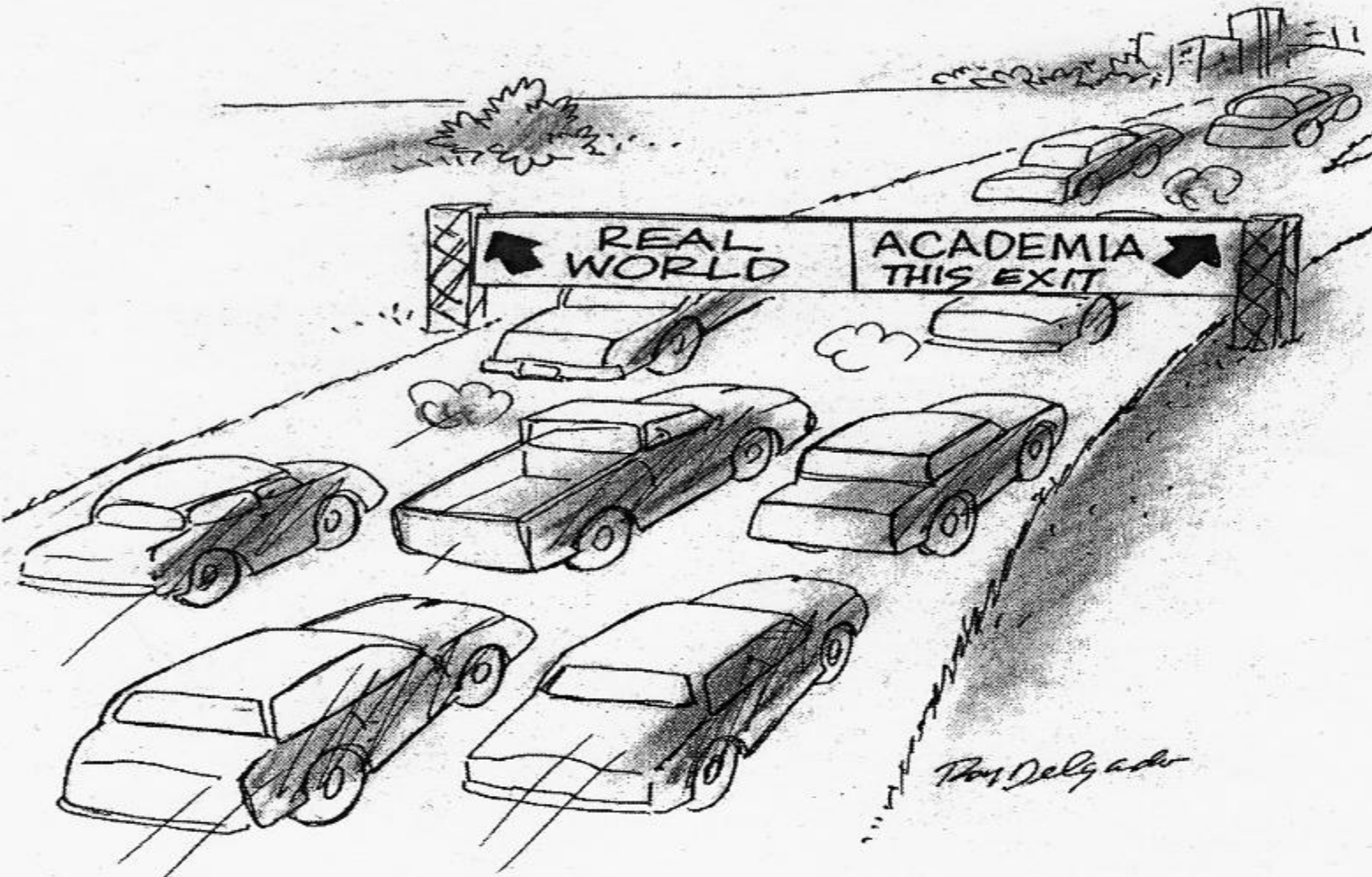


Latinos & Dance

- *Older* Latino adults
 - Higher rates of disease and disability compared to NLW
- Dance - **only** age-appropriate PA for older Latinas
- Documented benefits
- Likely to:
 - challenge physically and cognitively
 - be enjoyable
 - positively impact mood
 - not have the negative associations that “exercise” does (e.g., exercise is hard, boring, and tedious)
 - lead to long-term adherence?

Building up 1

- **Dance Instructors' Perceptions of Dance for Older Latinos.** (8/2008) (Pilot study) (Marquez, D., PI).
- **Methods:** Key informant interviews with 13 Latin dance instructors at studios/centers, senior centers, and parks
- **Results:**
 - Prefer lower impact dance
 - Sessions typically last 1 hour
 - Participants enjoy positive reinforcement & sense of belonging to group
 - Report memory & physical improvements, motivating them to adhere
- **Implications:** We began to design the BAILAMOS[©] (Balance & Activity In Latinos, Addressing Mobility in Older adultS) Latin dance program using this input



Tom DeLong

Building up 2

- **Perceptions of Dance among Older Latinos.** (5/2009- 8/2009) (Marquez, D., PI).
- **Methods:** Two focus groups (1 with six men, 1 with six women) of older Latinos who had mobility limitations and low PA levels.
- **Results:**
 - Dancing is preferred to other PA b/c dancing is not boring but just as beneficial.
 - Indoor dance provided an alternative to outdoor activities.
 - Barriers to dancing included limited availability and access.
 - Preferred dance styles were Salsa and Cha Cha Cha, followed by Merengue.
 - Dancing was seen as a culturally appropriate activity.
- **Implications:** Based on this input, and in collaboration with a professional Latin dance instructor, we created BAILAMOS®.

BAILAMOS[©]

(Balance & Activity In Latinos,
Addressing Mobility in Older adultS)



Building up 3

- **BAILAMOS[®] Pilot Study.** (1/2010- 8/2010) (Marquez, D., PI)
- **Methods:** Sedentary older Latinos with mobility limitations (M age=65.2) were recruited at a Latino community center.
- **Results: *Feasibility:***
 - Of the 12 participants who began the program, 9 (1 man, 8 women) completed the program for a 75% retention rate.
 - Participants attended 85% of the sessions.
 - Non-completers ($n=3$) left the program due to change in work status, trauma (non-program related), and leaving the country.
 - Participants enjoyed the program [$M = 6.75$ (.47) across all classes, 1-7 scale].
- ***Implications:*** A community-based Latin dance program is feasible and adherence among sedentary older Latinos was high.

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Sample Descriptives

	Mean (SD) (n = 9)	Range
Age	65.2 (5.3)	55-73
Female %	88.9%	-
Body Mass Index	33.8 (7.3)	24.1-45.8
Married %	55.6%	-
Number of Children	3.2 (2)	1-6
Currently Employed	0%	-
Mexican/Mexican-American	100%	-
Years Lived in U.S.	57.3 (16)	35-73
English as Preferred Lang.	66.7%	-
Years of Education	9.7 (3)	5-13.5
Annual Household Income (<\$25,000)	100%	-
Self-Rated Health (“good” or better)	66.7%	-

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Physical Activity & Physical Function

Measure	Baseline M (SD)	Post-Intervention M (SD)	Effect Size	p-value
CHAMPS Min MVPA	280.00 (212.06)	565.00 (314.59)	1.08	0.15
CHAMPS Min PA	628.33 (331.91)	1235.00 (543.58)	1.39	0.01
LL-FDI				
Disability, Frequency Social	12.56 (2.74)	13.00 (2.78)	0.16	0.35
Disability, Frequency Personal	18.22 (1.99)	18.56 (2.01)	0.17	0.52
Disability, Limitation Social	18.67 (2.06)	19.11 (1.45)	0.25	0.57
Disability, Limitation Personal	18.89 (1.36)	19.44 (1.33)	0.41	0.21
400 Meter Walk (sec)	441.88 (49.10)	415.75 (43.90)	-0.56	0.15
SPPB 4 Meter Gait time	6.11 (1.69)	5.98 (0.89)	-0.10	0.76

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Psychosocial Measures and Cognitive Function

Measure	Baseline M (SD)	Post-intervention M (SD)	Effect size	<i>p</i>- value
Physical Activity Enjoyment Scale	111.11 (11.95)	117.00 (7.43)	0.61	0.05
12-Item Short Form Survey (QoL)				
Physical Health score	49.38 (6.94)	51.46 (6.37)	0.31	0.23
Mental Health score	52.00 (8.17)	50.64 (11.05)	-0.14	0.73
Stroop Neuropsychological Test				
Colors score	18.67 (8.57)	19.67 (10.00)	0.11	0.65
Numbers Comparison Test	24.78 (7.60)	25.78 (8.66)	0.12	0.65

Building up 3

- **BAILAMOS[®] Pilot Study.** (1/2010- 8/2010) (Marquez, D., PI)
- ***Dance class duration/intensity/steps:***
 - PA was assessed with accelerometer during each class.
 - Heart rate was assessed during first and last class of each style.
 - The majority of dance time was light intensity.
 - However, the first class of each dance style versus the last class revealed that time spent in moderate intensity dance and steps taken modestly increased as skill increased.
 - Average heart rate based upon age-predicted maximum heart rate during dancing (56%-67%) was of light/moderate intensity.

Thank You

