

NewCourtland Center for Transitions and Health  
UNIVERSITY OF PENNSYLVANIA SCHOOL OF NURSING

**Tiempo Juntos por Nuestra Salud**  
**(Time Together for Our Health)**  
A Physical Activity Intervention to Promote Cognitive Health, Cardiovascular Health and Sleep in Older Latinos with MCI

**Adriana Perez, PhD, CRNP, ANP-BC, FAAN, FGSA**  
Anthony Buividas Term Chair in Gerontology  
Associate Professor of Nursing  
Senior Fellow, Leonard Davis Institute of Health Economics  
NewCourtland Center for Transitions and Health  
Population Studies Center | Population Aging Research Center  
University of Pennsylvania, School of Nursing

1

**RESEARCH TEAM**

Antonia M. Villarreal, PhD, RN, FAAN, Co-Investigator  
Norma B. Coe, PhD, Co-Investigator  
Adriana Perez, PhD, CRNP, ANP-BC, FAAN, FGSA, Principal Investigator  
David X. Marquez, PhD, Co-Investigator  
Nalata S. Gooneratne, MD, MSc, Co-Investigator  
Nancy A. Hodgson, PhD, RN, FAAN, Co-Investigator  
James F. Sallis, PhD, Consultant  
Subhash Aryal, PhD, Co-Investigator  
Roy H. Hamilton, MD, MS, FAAN, FANA, Safety Officer

**Grant Source: National Institutes of Health, National Institute on Aging R01AG070351 (2021-2024)**

3

**BACKGROUND & SIGNIFICANCE**

- Physical inactivity:** public health priority for Hispanic/Latinx older adults with mild cognitive impairment (MCI)
  - Risk of developing AD and related dementias (ADRD)
  - Physical activity (PA): enhances cognition
    - Improves sleep
    - Reduces cardiovascular disease (CVD); affects neurocognitive function
- Hispanic/Latinx community:** one of the most sedentary of older racial/ethnic groups; experience significant multi-level barriers to PA
  - Cost, environmental/neighborhood, safety concerns, lack of social networks
  - Few PA interventions are designed for older Latinos with MCI

5

**Disclosure Statement**

*I have no relevant financial relationships to disclose.*  
This study is funded by the National Institutes of Health/National Institute on Aging R01AG070351 (2021-2024).

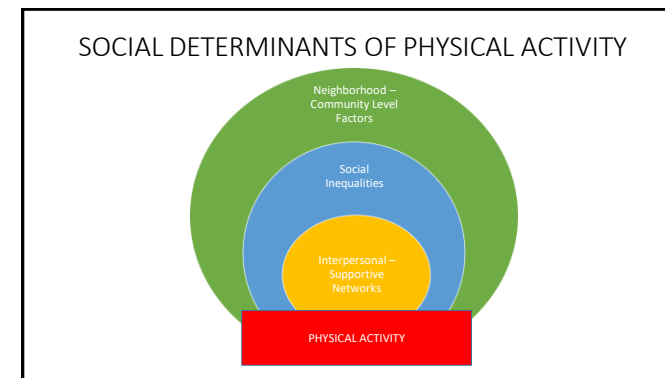
2

**RESEARCH TEAM**

Alexis Singer, Research Assistant  
Bryan Escobar, Research Assistant  
Ashley Duchi, Research Assistant  
Sarah Wetzel, Research Assistant  
Malini Correa, Research Assistant  
Maria Leon, Research Assistant  
Valerie Ramos, Research Assistant  
Paola Rosa, Research Assistant  
Andrew Beltran, Research Assistant  
Mario Rivera, BS, Project Coordinator  
Second, Project Coordinator  
Jessica Moreno, MSW, Project Manager  
Joseph Rhodes, MS, Biostatistician  
Liming Huang, PhD, Biostatistician  
BECCA Lab

**Grant Source: National Institutes of Health, National Institute on Aging R01AG070351 (2021-2024)**

4

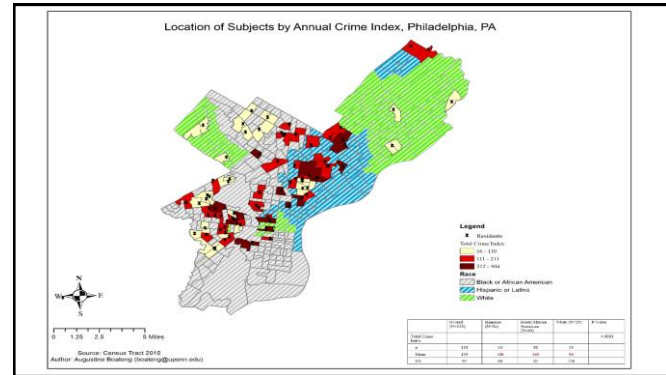


6

## DATA DRIVEN COMMUNITY-BASED APPROACH

- Preliminary research in partnership with community organizations serving Latinx elders
  - Community-based focus groups
    - Memory & sleep health rated as important for Latinx elders and their families
    - High interest in research participation opportunities
    - Limited physical activity programs available in Spanish
    - Neighborhood safety concerns for walking
  - Geographic Information Systems (GIS) Mapping – community level factors
    - Low-income, low-resourced neighborhoods
    - Higher neighborhood-level crime rates compared to White, non-Latinx elders
    - However, distance to green space highlight opportunities to promote group walking

7



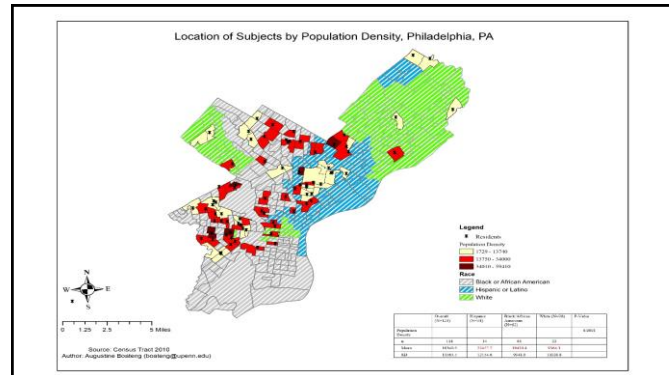
9

## COMMUNITY-BASED PARTNERSHIPS

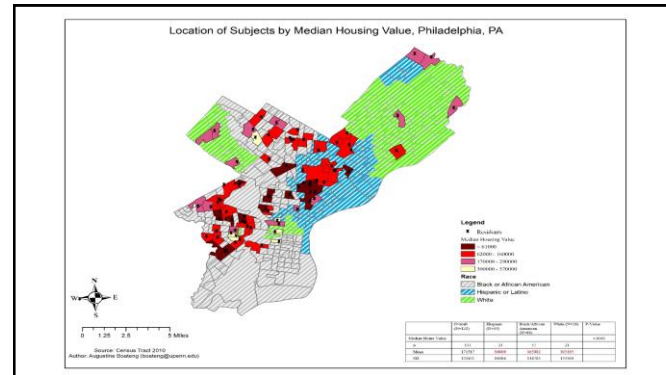
- **Tiempo Juntos Community Advisory Board**
  - Co-Chair, Member Paid Honorarium
- **Esperanza Health Center**
- **Recruitment sites**
  - Congreso de Latinos Unidos
  - Catholic Housing & Community Services (Archdiocese of Philadelphia)
  - HACE
  - Mercy LIFE North Hancock
  - Esperanza Health Center
  - Senior Centers:
    - (Aramingo Adult Day Center, Mann Older Adult Center, Norris Square Senior Community Center, Taller Puertorriqueño)
  - Maria de Los Santos Health Center



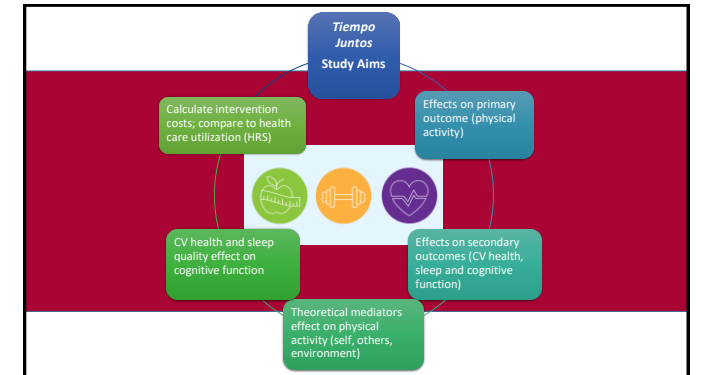
11



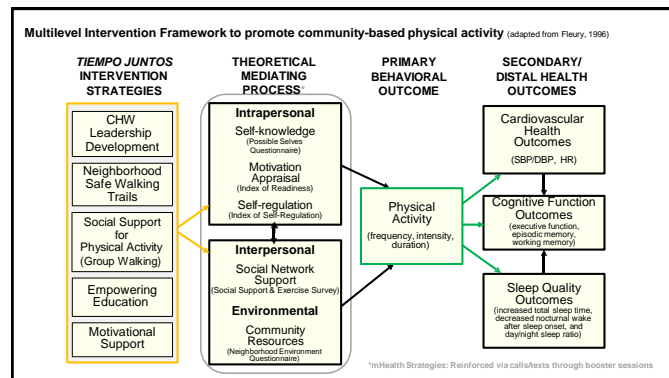
8



10



12



13

**RESEARCH DESIGN OVERVIEW**

- Community-based, RCT
- (1:1) Group walking delivered 2X week for 3 months, followed by bi-weekly mHealth booster sessions for 3 months; or AC, health education group sessions topics adapted from NIA/preliminary research
- RMANOVA 12 months
- Between-participant treatment factor (intervention vs AC group); within-participant time factors (individual differences at each time point)
- Primary & Secondary/Distal Health Outcomes assessed:
  - T1- baseline
  - T2- 3 months, post-intervention
  - T3- 6 months, post mHealth booster sessions
  - T4- 12 months post baseline

Dr. Adriana Perez engages with the local community to encourage physical activity.

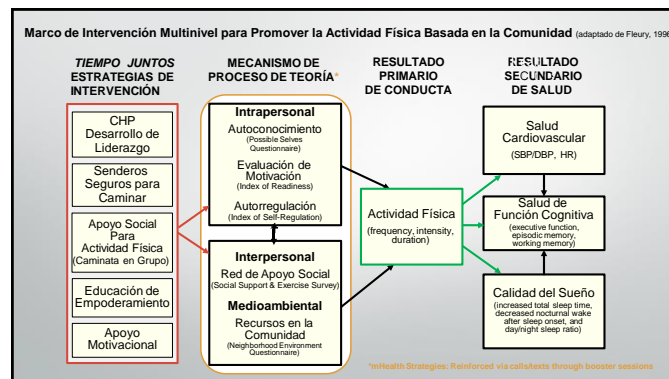
15

**Procedures**

1. Recruitamos a participantes para el estudio.
2. Hacemos una evaluación de salud al inicio.
3. Los participantes son asignados aleatoriamente a los grupos de intervención o de control.
4. Los participantes reciben la intervención o el control.
5. Hacemos evaluaciones de seguimiento.

- Recruitment/ Screening & Enrollment
- Exercise Assessment and Screening for You (EASY)
- Informed Consent
- Objective & Self-Report Measures (Family/Caregiver)
- \$50 Gift Card (T1-T4)

17



14

**216 Participants (108 Per Group)**

- Inclusion criteria:**
  - >= 55 years
  - Hispanic/Latino
  - Spanish as the primary language
  - Access to a phone (landline) or mobile device
  - Vaccinated for COVID-19
  - Do not have a problem that will prevent the participant from walking
  - Physical Activity Stage is less than 5
  - the MoCA score is >= 16 and < 25 and/or CDR is 0.5 or 1
- Exclusion criteria:**
  - Participants who do not meet any one of the inclusion criteria above

16

**Treatment Design**

- Led by Community Health Promoters (*Promotores de Salud*)
- Tailored to the needs/capacity of each participant's goals/abilities
- Focus on "Individual Motivation"
- Social Support Network
- Embedding Technology (mHealth) for booster sessions
- Safe walking trails for older adults
- Building community resources to sustain physical activity

Map by Caleb Daffino

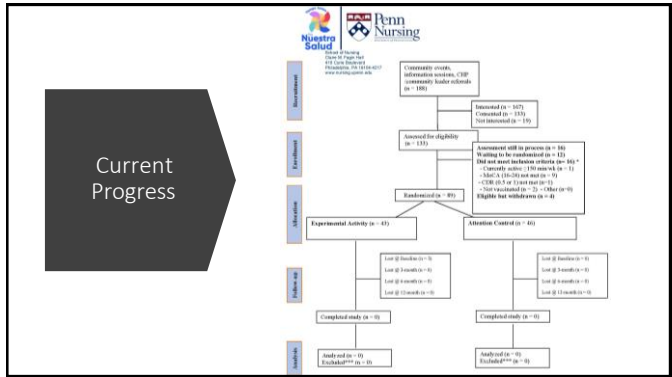
18

## Treatment Delivery

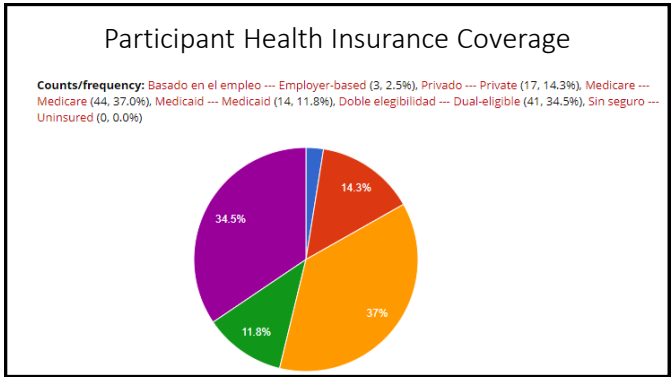
- Manualized procedures
  - Stretching Protocol
  - Wellness Motivation Framework Critical Inputs
- Delivery Methods (COVID-19)
  - 2X weekly group sessions
  - Use of motivational strategies
- Process evaluation forms
- Index of procedural consistency
- NIH Behavior Change Consortium recommendations for enhancing treatment fidelity



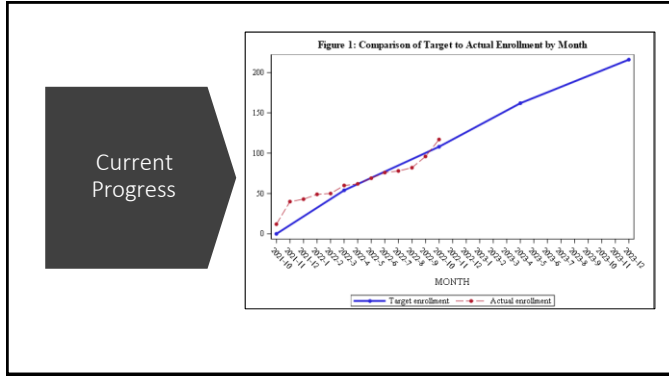
19



21



23



20

## Current Sample

	Overall (N=89)	Education (N=46)	Activity (N=43)
<b>Age</b>			
Mean (SD)	72.1 (7.67)	71.9 (8.18)	72.3 (7.18)
Median	73.00	71.50	73.00
Min, Max	56.00, 86.00	56.00, 86.00	57.00, 83.00
<b>Marital Status</b>			
Casado/a --- Married	17 (19.3%)	6 (13.0%)	11 (26.2%)
Separado/a --- Separated	9 (10.2%)	6 (13.0%)	3 (7.1%)
Divorciado/a --- Divorced	20 (22.7%)	11 (23.9%)	9 (21.4%)
Viuvido/a --- Widowed	32 (36.0%)	18 (39.1%)	14 (32.6%)
Nunca Casado/a --- Never Married	10 (11.4%)	5 (10.9%)	5 (11.9%)
<b>Highest level of education completed</b>			
Did not finish high school	54 (60.7%)	31 (66.9%)	23 (54.8%)
High school graduate / GED	15 (17.0%)	6 (13.3%)	9 (21.4%)
Some college	10 (11.5%)	4 (8.9%)	6 (14.3%)
College/University Degree (i.e., Bachelor's)	7 (8.0%)	4 (8.9%)	3 (7.1%)
<b>Employment status</b>			
Retirado --- Retired	57 (66.3%)	30 (66.7%)	27 (65.9%)
Empleado a tiempo parcial --- Part-time employee	5 (5.8%)	5 (11.1%)	0
Empleado a tiempo completo --- Employed full time	2 (2.3%)	0	2 (4.9%)
Desempleado --- Unemployed	5 (5.8%)	3 (6.7%)	6 (14.6%)
No empleado --- Not employed	13 (15.1%)	7 (15.6%)	6 (14.6%)
<b>Household Monthly Income (including \$5)</b>			
\$100 to \$499	4 (4.8%)	1 (2.2%)	3 (7.7%)
\$500 to \$999	47 (54.0%)	23 (51.3%)	24 (61.5%)
\$1,000 to \$1,999	20 (23.0%)	13 (28.9%)	7 (17.9%)
\$1,500 to \$1,999	7 (8.3%)	7 (15.6%)	0
\$2,000 o más --- or more	6 (7.1%)	1 (2.2%)	5 (12.8%)
<b>Ethnicity/Nationality</b>			
Puertorriqueño/a --- Puerto Rican	66 (76.7%)	36 (77.8%)	31 (75.6%)
Dominicano/a --- Dominican Republic	11 (12.8%)	6 (13.3%)	5 (12.2%)
Colombiano/a --- Colombian	3 (3.5%)	1 (2.2%)	2 (4.9%)
Adicional (Venezolano, Cubo, Ecuador, Panamá, Peru)	4 (4.8%)	3 (6.7%)	3 (7.7%)

22

## Attention to Sociocultural Implications

- Community Advisory Board ongoing review and recommendations
- Community Health Promoter testing of procedures and ongoing input
- Small pilot/group of participants tested procedures and provided critical feedback

- Sub-cultural and linguistic differences that impact assessments, including differences in education attainment and education systems in native countries
- Refine recruitment and retention procedures by considering diversity of religious preferences
  - Preparation and support for students, interns, scholars going out in the field
- Consider outreach to those isolated (not served/not aware of community partners/resources)
- Work with community partners to address potential barriers to participation (i.e. transportation)
- Embedding participant preferences for celebrating milestones

24

*Guineo o plátano de canarias*

*Plátano verde o macho*

*Plátano maduro*

**Regional variations**  
Taking into account language and sub-cultural differences

Country of origin	Vegetable	Fruit
Dominican Republic	Plátano	Guineo
Mexico	Plátano macho	Plátano
Colombia	Plátano	Banano
Puerto Rico	Banana Plátano	Guineo

25

**¡Feliz Día de las Madres!**

**Diversity of Cultural Traditions**

Mayo 10 — Mexico, Guatemala, and El Salvador  
El segundo domingo de mayo — EE.UU, Brazil, Chile, Colombia, Cuba, Ecuador, Honduras, Peru, Puerto Rico, Uruguay, Venezuela  
Mayo 15 — Paraguay  
Mayo 27 — Bolivia  
El último domingo de mayo — La República Dominicana  
Mayo 30 — Nicaragua  
Agosto 15 — Costa Rica  
Octubre 17 — Argentina  
Diciembre 8 — Panamá

27

**Opportunity for Mentoring an Inclusive Scientific Workforce**

- Next generation of nurses, scientists who reflect the community
- Providing "real world" hands-on research experiences, acknowledging both challenges and strengths
- Opportunity to learn/conduct research focused on the needs, values & priorities of minoritized elders
  - Learning with faculty from community partners, leaders and participants themselves

29

**Counts/frequency:** Protestant (4, 7.3%), Christian (8, 14.5%), Catholic (26, 47.3%), Jehovah's Witness (6, 10.9%), Muslim (0, 0.0%), Jewish (0, 0.0%), Agnostic (0, 0.0%), Mormon (0, 0.0%), Buddhist (0, 0.0%), Indigenous (0, 0.0%), None (2, 3.6%), Other (9, 16.4%)

**Religious Preferences**

26

**Social Media Pilot**

28

**Nuestra Salud**  
Tel: 215.746.4448

**Tiempo Juntos**  
Por Nuestra Salud

**Penn Nursing**  
UNIVERSITY OF PENNSYLVANIA

**GRACIAS**  
Email: [tiempojuntos@nursing.upenn.edu](mailto:tiempojuntos@nursing.upenn.edu)

30