



Tiempo Juntos Por Nuestra Salud

A intervention to increase physical activity and improve cognitive, cardiovascular, and sleep health in Latinx elders

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Background

- Number of Latinos living with Alzheimer's Disease (AD) to reach 3.5 million by 2060, an increase of over eight-fold
- Older Latinos experience a disproportionate burden of cognitive disease
 - Higher rates of inactivity and sleep-wake disturbances associated with metabolic syndrome, diabetes, and cardiovascular (CV) risk
- "Most sedentary of the older racial/ethnic groups"



Prevalence of Self-Reported Physical Inactivity* Among Non-Hispanic White Adults by State and Territory, BRFSS, 2017–2020



"Adult Physical Inactivity Prevalence Maps by Race/Ethnicity." Centers for Disease Control and Prevention, US Department of Health and Human Services, 17 Feb. 2022, https://www.cdc.gov/physicalactivity/data/inactivity-prevalence-maps/index.html#Race-Ethnicity.



Black Population

Prevalence of Self-Reported Physical Inactivity* Among Non-Hispanic Black Adults by State and Territory, BRFSS, 2017–2020



"Adult Physical Inactivity Prevalence Maps by Race/Ethnicity." Centers for Disease Control and Prevention, US Department of Health and Human Services, 17 Feb. 2022, https://www.cdc.gov/physicalactivity/data/inactivity-prevalence-maps/index.html#Race-Ethnicity.



Hispanic Population

Prevalence of Self-Reported Physical Inactivity* Among Hispanic Adults by State and Territory, BRFSS, 2017–2020



"Adult Physical Inactivity Prevalence Maps by Race/Ethnicity." Centers for Disease Control and Prevention, US Department of Health and Human Services, 17 Feb. 2022, https://www.cdc.gov/physicalactivity/data/inactivity-prevalence-maps/index.html#Race-Ethnicity.

How to improve chosen health indicators for a population increasingly at risk of developing Alzheimer's Disease and Related Dementias (ADRD)?



Intervention Design

- Intervention: Tiempo Juntos Por Nuestra Salud
- Randomized controlled trial will assess impact on:
 - Primary outcome: moderateintensity physical activity
 - Secondary outcomes: cognitive function, CV health and sleep





Participants

- Spanish language-dominant Latinos aged 55 and older with mild cognitive impairment (MCI)
- 116 recruited
 - Goal: 216 participants
- Frequent/reside in senior care centers primarily in North Philadelphia (so far)







Intervention Design

Tiempo Juntos Group

- 1-hour, group walking intervention
- 2x/week for 3 months
- Biweekly booster sessions
 in Months 4-6

Attention Control Group

- 1-hour, Spanish health education class
- 2x/week for 3 months
- Biweekly booster sessions in Months 4-6





1. Examine the immediate and long-term effects of TJ on primary and secondary outcomes

2. Identify theoretical mediators of TJ effects on physical activity.

3. (Exploratory) To evaluate the effect of changes in CV health and sleep quality on cognitive function

4. To evaluate intervention costs.



Aim One

- Measured outcomes at each time point
 - Baseline, 3 months, 6 months, 12 months
- Tools used:
 - Actigraph physical activity
 - CV Health Outcomes Automated blood pressure device
 - Sleep Outcomes Actigraphy monitoring
 - Surveys sleep, physical activity







Aim Two

- Measured outcomes at each time point
 - Baseline, 3 months, 6 months, 12 months
- Assessments:
 - Social support/psychosocial measures PACE, Stages of Change
 - Safety/environmental resources NEWS
 - Self-knowledge of values/fears Possible Selves
 - Motivation Appraisal Index of Readiness
 - Self Regulation Index of Self-Regulation



Impact of Walkability

- Theoretical mediating variable
 - Perceived safety and environmental resources
 - Cannot make any associations yet
- Barriers to walkability
 - Infrastructure & Safety for Walking
 - Aesthetics
 - Crime



Calculation of Walkability Scores

Calculation equation for variable "news_score_f"

Variable Name: *news_score_f*

Field Label: Aesthetics (higher score denoting higher walkability)

Calculation: if(isinteger ([news_f_q1])+ isinteger ([news_f_q2])+ isinteger ([news_f_q3])+ isinteger ([news_f_q4])+ isinteger ([news_f_q5])+ isinteger ([news_f_q6])>= 6*0.75, mean([news_f_q1], [news_f_q2], [news_f_q3], [news_f_q4], [news_f_q5], [news_f_q6]), "")

Fields Utilized in Calculation				
Variable Name	Field Label			
news_f_q1	1. Hay árboles a lo largo de las calles en mi vecindario There are trees along the streets in my neighborhood.	NEWS- CFA		
news_f_q2	2. Los árboles proveen sombra para las banquetas en mi vecindario Trees give shade for the sidewalks in my neighborhood.	NEWS- CFA		
news_f_q3	3. Hay muchas cosas interesantes que puedo ver cuando camino en mi vecindario There are many interesting things to look at while walking in my neighborhood.	NEWS- CFA		
news_f_q4	4. Mi vecindario es generalmente libre de basura My neighborhood is generally free from litter.	NEWS- CFA		
news_f_q5	5. Hay muchas vistas naturales atractivas en mi vecindario (como el paisaje, panoramas) There are many attractive natural sights in my neighborhood (such as landscaping, views).	NEWS- CFA		
news_f_q6	6. Hay edificios/casas atractiv(os/as) en mi vecindario There are attractive buildings/homes in my neighborhood.	NEWS- CFA		



Walkability Scores

	Higher score -> higher walkability		Higher score -> lower walkability
Street Connectivity	3/4	Traffic Hazards	2.83/4
Access to Services	3.25/4	Crime	☆3.25/4
Infrastructure and Safety for Walking	2.7/4		
Aesthetics	2.3/4		



Infrastructure & Safety for Walking

There is a grass/dirt strip that separates the streets from the sidewalks in my neighborhood





Aesthetics

















Future Direction

• Enrollment of Participants

- 216 participants
- Data analysis phase next fall
- Results from first 3 months of participants will be completed
 - · Immediate effects: did they increase their physical activity

Implications

- Use of multi-level strategies:
 - Empowerment education for behavior change and individual motivation, social support networks, and community/cultural centers for safe walking
- Promote scalable physical activity interventions to prevent cognitive decline
- Use results to influence policy
 - Environment: City design policy





- Conducts in-person and telephone interviews in Spanish
- Provide reminders for data collection and intervention appointments
- Assist with data collection procedures
 - Cognitive health questionnaires
 - Blood pressure
 - Sleep/physical activity tracking
 - MoCA, CDR certified
- Enter data into RedCAP
- Assist with recruitment events/carnivals









Lessons Learned

- Technical skills
 - Spanish fluency (medical terminology)
 - Blood pressure, physical activity/sleep tracking, etc.
 - Cognitive assessments
 - RedCAP
- Understanding of topics/problems important to Latinx community in Philadelphia
 - Participants, mentors, peers
- Understanding of multi-level interventions and benefits
- Value of listening



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- Dr. Adriana Perez
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References

- "Adult Physical Inactivity Prevalence Maps by Race/Ethnicity." *Centers for Disease Control and Prevention*, US Department of Health and Human Services, 17 Feb. 2022, https://www.cdc.gov/physicalactivity/data/inactivity-prevalence-maps/index.html#Race-Ethnicity.
- Kabisch, Nadja, et al. "The Health Benefits of Nature-Based Solutions to Urbanization Challenges for Children and the Elderly a Systematic Review." *Environmental Research*, vol. 159, 2017, pp. 362–373., https://doi.org/10.1016/j.envres.2017.08.004.
- Merchant, Gina, et al. "Accelerometer-Measured Sedentary Time among Hispanic Adults: Results from the Hispanic Community Health Study/Study of Latinos (HCHS/Sol)." *Preventive Medicine Reports*, vol. 2, Sept. 2015, pp. 845–853., https://doi.org/10.1016/j.pmedr.2015.09.019.
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Thank you! Questions?







Implications

- Physical factors of walkability:
 - Green spaces
 - Condition of sidewalks
 - Crime (drug use, gun violence)
- Possible pathway
 - Better environment -> increased physical activity -> improved CV health, cognitive function, sleep quality
 - Future direction!
- Multilevel strategy: promotes cultural/community resources for safe walking

