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”

Merchant, Gina, et al., Wu, Shinyi, et al.
Adult Physical Inactivity - White Population

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

Black Population

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


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

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: moderate-intensity 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
Aims

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]), "")

<table>
<thead>
<tr>
<th>Variable Name</th>
<th>Field Label</th>
<th>Form Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>news_f_q1</td>
<td>1. Hay árboles a lo largo de las calles en mi vecindario. --- There are trees along the streets in my neighborhood.</td>
<td>NEWS-CFA</td>
</tr>
<tr>
<td>news_f_q2</td>
<td>2. Los árboles proveen sombra para las banquetas en mi vecindario. --- Trees give shade for the sidewalks in my neighborhood.</td>
<td>NEWS-CFA</td>
</tr>
<tr>
<td>news_f_q3</td>
<td>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.</td>
<td>NEWS-CFA</td>
</tr>
<tr>
<td>news_f_q4</td>
<td>4. Mi vecindario es generalmente libre de basura. --- My neighborhood is generally free from litter.</td>
<td>NEWS-CFA</td>
</tr>
<tr>
<td>news_f_q5</td>
<td>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).</td>
<td>NEWS-CFA</td>
</tr>
<tr>
<td>news_f_q6</td>
<td>6. Hay edificios/casas atractivos en mi vecindario. --- There are attractive buildings/homes in my neighborhood.</td>
<td>NEWS-CFA</td>
</tr>
</tbody>
</table>
## Walkability Scores

<table>
<thead>
<tr>
<th></th>
<th>Higher score -&gt; higher walkability</th>
<th>Higher score -&gt; lower walkability</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Street Connectivity</strong></td>
<td>3/4</td>
<td>Traffic Hazards</td>
</tr>
<tr>
<td><strong>Access to Services</strong></td>
<td>3.25/4</td>
<td>Crime</td>
</tr>
<tr>
<td><strong>Infrastructure and Safety for Walking</strong></td>
<td>2.7/4</td>
<td></td>
</tr>
<tr>
<td><strong>Aesthetics</strong></td>
<td>2.3/4</td>
<td></td>
</tr>
</tbody>
</table>
There is a grass/dirt strip that separates the streets from the sidewalks in my neighborhood
Aesthetics

There are many attractive natural sights in my neighborhood (such as landscaping, views)

My neighborhood is generally free from litter

Kabisch, Nadja, et al.
There is a high crime rate in my neighborhood

The crime rate in my neighborhood makes it unsafe to go on walks during the day
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
Role

- 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
Acknowledgements

• Dr. Adriana Perez
• Tiempo Juntos Team
• Joanne Levy
• SUMR Cohort
References


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