



Physical Activity and Cognitive Function in Latino Adults in the U.S.: A Scoping Review of Evidence, Disparities, and Research Gaps

ILLINOIS

Diana Morales¹, Christian Corral¹, Yuliana Soto, PhD², Jacqueline Guzman, PhD³, Manuel Muñoz II¹, Susan Aguiñaga, PhD¹

¹University of Illinois Urbana-Champaign, ²University of Illinois Chicago, ³Medical College of Wisconsin

INTRODUCTION

- Latino adults are **underrepresented** in research examining the relationship between **physical activity (PA) and cognitive function**.
- Understanding this relationship is **critical** given the **high prevalence of inactivity and Alzheimer's disease and related dementias (ADRD)** in this population.

PURPOSE

- This scoping review synthesizes the existing literature on the association of **PA and cognition among Latino adults**.

METHODS

A comprehensive literature search was conducted following PRISMA guidelines.

- MEDLINE (PubMed), CINAHL (EBSCO), Scopus, SPORTDiscus, and Chicano Database.
- Keywords: “Hispanic” or “Latino”; “physical activity,” “exercise,” or “dance”; and “cognition,” “executive function,” or “brain health.”
- Limits: Peer-reviewed articles published between 2010-2024, involving adults (18+).
- Population: U.S. or included U.S. samples.
- Predictors/Outcomes: PA and Cognition.
- Intervention or observational designs.
- Included >35% Latino participants.
- Data extracted included sample demographics, study design, outcomes, and PA characteristics.
- Articles were organized using the FITT principle (Frequency, Intensity, Time, and Type), providing a structured framework to categorize key physical activity characteristics across studies.

Moderate-to-vigorous physical activity is associated with improvements in executive function among Latino adults.

Evidence remains **limited** and **heterogeneous**, highlighting the need for more **culturally relevant research to better understand PA's role in reducing cognitive health disparities**

RESULTS

Table 1. Data extraction table reporting FITT principles

Study	Frequency (F)	Intensity (I)	Time (T)	Type (T)	Key Findings
BAILA TECH (Aguiñaga et al., 2021)	Twice per week	MVPA (3–6 METs)	16 weeks; 2-hour classes (60 min dance, 60 min tech/SCT)	Latin dance + mHealth technology (Fitbit/texting)	Significant ↑ in MVPA and cardiorespiratory fitness; small effect on EF (d = 0.29).
BAILAMOS™ Pilot (Balbim et al., 2021; Marquez et al., 2017)	Twice per week	Moderate intensity (~4.5 METs)	4 months (16 weeks); 1-hour sessions	Latin dance	Significant ↑ in GC and episodic memory (specifically Logical Memory Delayed).
¡Caminemos! (Piedra et al., 2017; Hernandez et al., 2017)	Weekly sessions (4 weeks core) then monthly/bi-monthly maintenance	Target: Moderate intensity	24 months total duration; 1-hour exercise sessions	Structured exercise (modified EnhanceFitness: strength, endurance, balance, flexibility)	↑cognitive functioning scores at 1-year and 2-year follow-ups.
Project VIVA! (Mama et al., 2015)	Twice per week (home-based)	Personalized based on baseline fitness (ACSM guidelines)	16 weeks intervention	Home-based exercise targeting aerobic, strength, and flexibility training	Significant ↑ in exercise self-efficacy and total PA; barrier self-efficacy led to increased walking.
Seamos Saludables (Marcus et al., 2013)	Individually decided (print-based intervention)	Target: MVPA	6-month intervention	Tailored print-based intervention delivering materials by mail	Significant ↑ in leisure-time MVPA (avg 70 min/week) and ↑ self-efficacy and cognitive processes.
iBAILA Study (Guzman et al., 2021)	Twice per week	Light-to-moderate self-reported intensity	4 months (16 weeks); 1-hour sessions	Latin dance program (BAILAMOS)	No significant changes in hippocampal volume (likely too short), but significant ↑ in self-reported PA.
Madre Sana, Bebé Sano (Gesell et al., 2015)	12 weekly sessions	Intensity not reported	12 weeks; 90-minute group sessions	Cognitive-behavioral lifestyle intervention (nutrition, group exercise, and stress management)	↓proportion of normal-weight women exceeding weight gain recommendations during pregnancy.

Abbreviations: PA = Physical Activity; EF = Executive function; GC = Global Cognition; WM = Working Memory; MVPA = Moderate-to-vigorous physical activity; FITT = Frequency, Intensity, Time, Type

RESULTS

- 251 articles were identified; after removing duplicates, 121 were screened, 27 were assessed, and **9 were included in the review** (6 intervention, 3 observational).

Studies included (n=9)

Executive function (n=3)
Global cognition (n=4)
Working memory (n=2)

MVPA interventions: Latin dance
Structured exercise

6 studies: Structured PA (2x/week, 60–120 min) → Improved executive function in Latino adults

CONCLUSION

- PA appears **beneficial** for cognitive health among Latino adults, **improving EF, GC, and WM**.
- Applying the **FITT framework** suggests that **twice-weekly sessions of 60-120 minutes at MVPA intensity may be effective** and may enhance the design and reporting of future interventions.
- More research is needed to address **health disparities**, including high ADRD rates and low PA.
- Addressing these gaps will be essential to **promote cognitive well-being** and reduce health inequities in this population.

CONTACT INFORMATION

Diana Morales, PhD(c)
dianam3@Illinois.edu
PhD Candidate, Health Equity and Aging Laboratory

