Background

- Approximately 50% of medications prescribed in the US are not taken as ordered
- Medication non-adherence is complex and threatens overall health
- Medication non-adherence costs the U.S. healthcare system $100-$300 billion annually
- Non-adherence costs are especially high for older adults, often burdened by multiple comorbidities, poor health literacy, and low income
- At an urban senior center in a low-income, bilingual Chicago neighborhood, medication non-adherence was noted to be a problem
- In a community setting, curriculum-based weekly interventions have been shown to improve medication adherence, especially in bilingual individuals

Purpose

To improve medication adherence for older adults at a community-based, bilingual senior center by implementing a weekly educational intervention to decrease barriers

Measures

Design:
- Educational intervention with pre-test post-test evaluation

Framework:
- The Iowa Model for Evidence-Based Practice guided the community assessment, community needs, identification of the problem, and stakeholder collaboration

Setting:
- Community-based, urban meeting center for older adults in Chicago
- Center provides wellness services such as blood pressure screenings, exercise classes, nutrition counseling, and social work services
- Neighborhood demographic of 90% Hispanic residents, largely Spanish-speaking

Participants
- Open to all community members attending the Senior Center or utilizing its services

Demographics
- Assessed via Agency for Healthcare Research and Quality (AHRQ) survey and attendance tracked participation

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Measures, contd.

Adapted Hill-Bone Compliance Scale
- Designed to assess the dynamics of proper adherence to medications
- Reverse scored Likert scale format [range: 8-32]; low score indicating positive health behavior
- Administered pre- and 4-months-post-intervention

CardioSmart Assessment
- Developed by American College of Cardiology (ACC)
- Administered pre- and post-intervention to evaluate knowledge regarding medication adherence and chronic disease
- The topics covered in this assessment reflect the topics of the educational intervention: medication methods, health literacy, healthy lifestyles, and side effects
- Administered pre- and post-intervention

Methods

Development of Intervention
- Developed curriculum for six interactive, weekly sessions with participants, including take-home packets for participants
- Information for content gathered from AHRQ, Centers for Disease Control and Prevention, World Health Organization, and the Food and Drug Administration

Recruitment
- Intervention schedule was confirmed by stakeholder communication
- Marketing began August 2019 with chalkboard advertisements through the center
- Announcements made during blood pressure clinic every Tuesday for four weeks
- A sign-up sheet was used to estimate participation

Educational intervention
- Six one-hour sessions, plus Q&A
- Sessions conducted in English and Spanish
- All materials, tools, scales, and advertisements were translated to Spanish by a native speaker

Educational Intervention Weekly Modules and Content	
Weekly Module	**Content**
1) Chronic Disease Overview	• Introduction of medication adherence • Distribution of CardioSmart pre-learning assessments • Discussion of learning objectives
2) Overcoming Barriers	• Discussion of barriers to proper medication adherence • Introduction and explanation of Walmart $4 medication list
3) Side Effects	• Discussion of common side effects • Encouragement of participants to discuss side effects with health care providers
4) Reminder Methods	• Distribution of pillboxes • Explanation and demonstration of proper pillbox use
5) Using Your Resources	• Discussion about the importance of communication with health care providers • Discussion of CDC and AHRQ strategies to foster trust
6) Written Reminders/Conclusions	• Distribution of individualized medication adherence wallet cards • Distribution of CardioSmart post-learning assessments and final program evaluations

Analysis
- Data were analyzed using standard descriptive statistics and dependent T-tests

Results

Demographics (n=16)	
	(%)
Gender	
Male	56%
Race	
Hispanic	46%
Caucasian	44%
African American	10%
Primary Language	
Spanish-Speaking	46%
Age, [range] M (SD)	[57-79] 64 (5.9)

Results of Hill Bone Compliance Scale (HBCC) and CardioSmart				
	Pre-Intervention M (SD)	Post-Intervention M (SD)	Dependent T statistic	p
HBCC Score (n=10)	25.8 (30.1)	11.2 (19.8)	9.504	<0.05
CardioSmart Score (n=3)	3.9 (2.3)	7.0 (1.7)	--	--

- Self-reported medication adherence showed statistically significant improvement
- Improved knowledge was clinically significant in a small sample (58%)

Conclusion

- Despite a small sample size, this educational intervention was successful at increasing medication adherence and knowledge in older adults
- Weekly evidence-based content was well received by this population
- Similar educational interventions should be tested at this site with larger sample sizes
- Support for sustainability is evident, with stakeholders planning to use content for further programming; but opportunities for further educational interventions remain limited due to population vulnerability and COVID-19 restrictions