

Contribution of Neighborhood SES and Physical Activity Resource Quality to Changes in Physical Activity in Minority Women

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Background

- Residence in lower socioeconomic status (SES) neighborhoods has been associated with lower rates of physical activity.
(Boone-Heinonen, Diez Roux, Kiefe et al 2011; Yen, Kaplan 1998)
- Access to high quality physical activity resources may buffer some of the detrimental effects of low SES neighborhoods.
(Lee, Cubbin 2009; Lee, Cubbin, Winkleby 2007; van Lenthe, Brug, Mackenbach 2005; Bauman, Smith, Stoker 1999; Sallis, Hovell, Hofstetter et al 1990)





Research Question

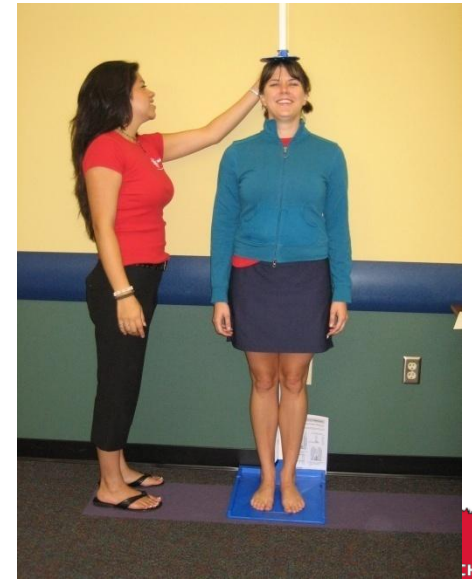
What is the relationship of neighborhood SES and access to quality physical activity resources to physical activity among African American and Hispanic or Latino women over time?

Health Is Power

- Houston and Austin, Texas
- 5-year longitudinal study
- Increase physical activity (walking) or vegetable and fruit consumption
- 6 month social cohesion intervention



Research Design



Participants



- ❑ African American
- ❑ Hispanic
- ❑ Women
- ❑ Age 44.3 ± 11.0
- ❑ BMI 34.0 ± 9.7
- ❑ IPAQ long form
- ❑ Accelerometer

Participant Characteristics

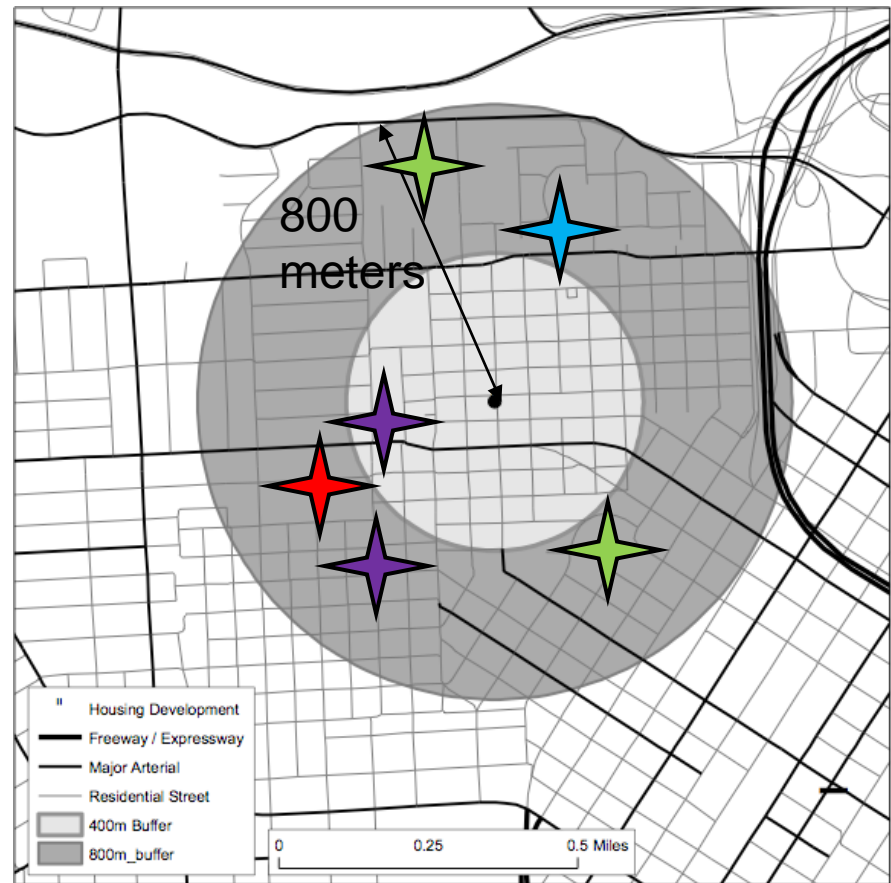
	Total (N=309)	African American (N=202)	Hispanic or Latina (N=107)
	<i>Mean (SD)</i>	<i>Mean (SD)</i>	<i>Mean (SD)</i>
Age	45.8 (9.5)	45.4 (9.2)	46.4 (10.1)
BMI (kg/m ²)	34.2 (8.1)	34.5 (8.0)	33.5 (8.3)
Accelerometer PA (min/day)	19.6 (19.3)	24.3 (21.6)	10.9 (9.4)*
IPAQ Walking (MET-min/day)	716.9 (1692.9)	867.7(2029.0)	432.2 (628.8)*



Defining Neighborhoods

Definir Vecindarios

- Radial buffer 800 mtrs
búfer radial 800 mtrs
- All physical activity resources
Todos recursos para actividad física





Physical Activity Resource Assessment (©2010; PARA)

Measures physical activity resource type, size, features, amenities, and incivilities. *Mide actividad física de tipo recurso, el tamaño, las características, los servicios, y las descortesías.*



1) Date _____	2) Data col _____	3) HD/PA Resource ID _____
4) Time start: _____ stop: _____	5) Phone Call departure: _____ arrival: _____	

6) Type of Resource 1 fitness club 2 park 3 sport facility 4 trail 5 community center 6 church 7 school 8 combination _____	7) Approximate Size: 1 sm 2 med 3 lg
	8) Capacity (indoor) _____
	9) Cost 1 Free 2 Pay at the door 3 Pay for only certain programs 4 Other _____

10) Hours a) open _____ b) close _____

11) Signage – Hours yes no

12) Signage – Rules yes no

Feature	Rating				Amenity	Rating			
13) Baseball field	0	1	2	3	26) Access Points	0	1	2	3
14) Basketball courts	0	1	2	3	27) Bathrooms	0	1	2	3
15) Soccer field	0	1	2	3	28) Benches	0	1	2	3
16) Bike Rack	0	1	2	3	29) Drinking fountain	0	1	2	3
17) Exercise Stations	0	1	2	3	30) Fountains	0	1	2	3
18) Play equipment	0	1	2	3	31) Landscaping efforts	0	1	2	3
19) Pool > 3 ft deep	0	1	2	3	32) Lighting	0	1	2	3
20) Sandbox	0	1	2	3	33) Picnic tables shaded	0	1	2	3
21) Sidewalk	0	1	2	3	34) Picnic tables no-shade	0	1	2	3
22) Tennis courts	0	1	2	3	35) Shelters	0	1	2	3
23) Trails – running/biking	0	1	2	3	36) Shower/Locker room	0	1	2	3
24) VB courts	0	1	2	3	37) Trash containers	0	1	2	3
25) Wading Pool < 3 ft.	0	1	2	3					

Incivilities	Rating				Incivilities	Rating			
38) Auditory annoyance	0	1	2	3	44) Graffiti/tagging	0	1	2	3
39) Broken glass	0	1	2	3	45) Litter	0	1	2	3
40) Dog refuse	0	1	2	3	46) No grass	0	1	2	3
41) Dogs Unattended	0	1	2	3	47) Overgrown grass	0	1	2	3
42) Evidence of alcohol use	0	1	2	3	48) Sex paraphernalia	0	1	2	3
43) Evidence of substance use	0	1	2	3	49) Vandalism	0	1	2	3

Comments:

[Http://www.hhp.uh.edu/undo](http://www.hhp.uh.edu/undo)



Quality Physical Activity Resources

- Developed to rank total neighborhood quality
- Can also use at the individual level
- Access to quality PARs was determined by a composite index, aggregated for each neighborhood:

Individual QPAR = Features + Amenities - Incivilities

Neighborhood QPAR = Sum of all individual QPARs



Analyses

- Median household income
- Aggregated US census tract information
- Low vs. high SES neighborhoods
- Neighborhood income and QPAR scores were dichotomized using a median split.
- Repeated measures ANOVA adjusted for individual income, age and ethnicity.

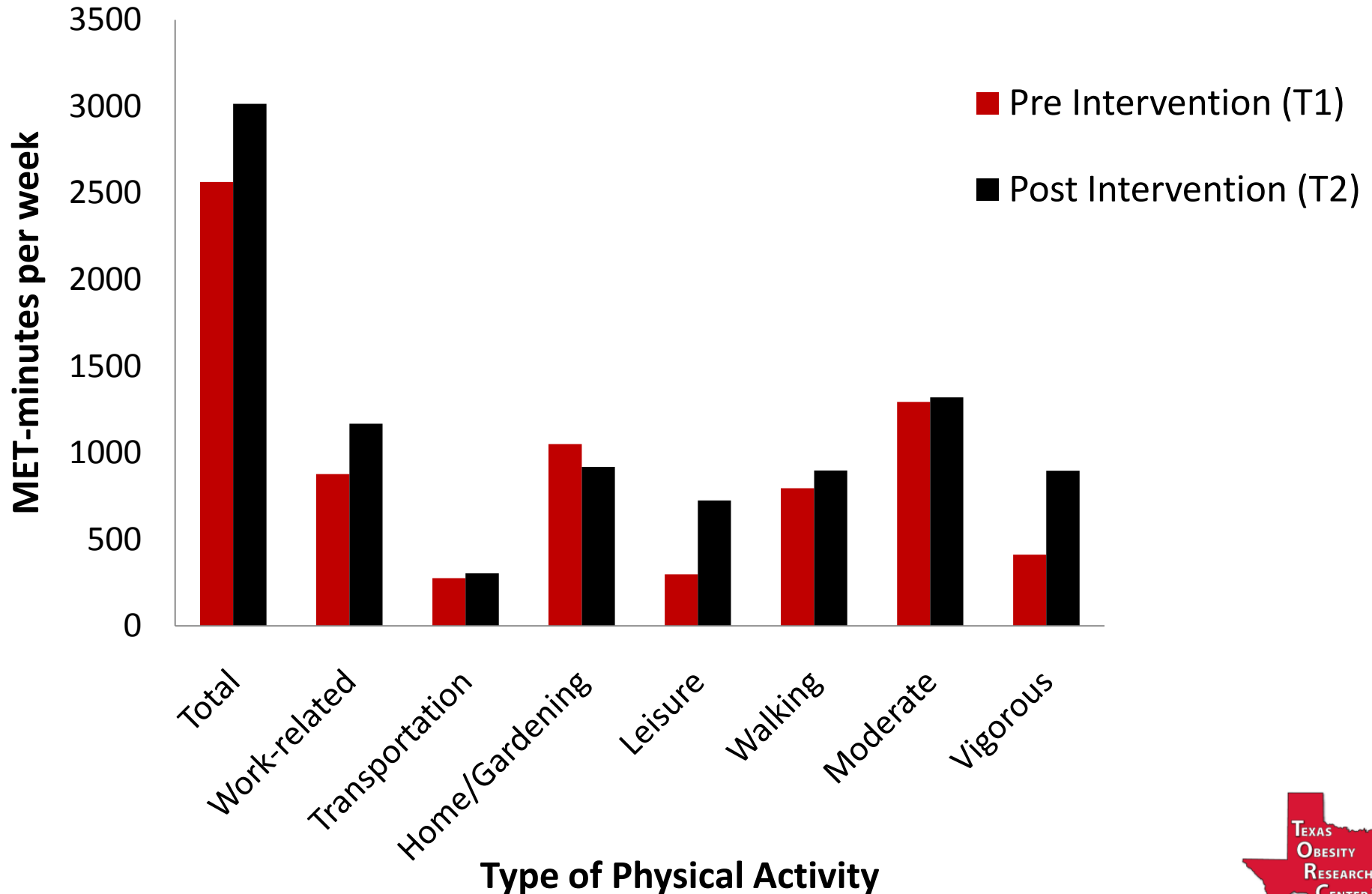


Neighborhood Characteristics

	Median	Mean (SD)	Range
Median Household Income	\$37,739	\$40,587 (17,189)	\$13,421- 119,260
Physical Activity Resources	n/a	3.79 (2.6)	0-17
QPAR Score	15	6.5 (9.7)	-3 - 66



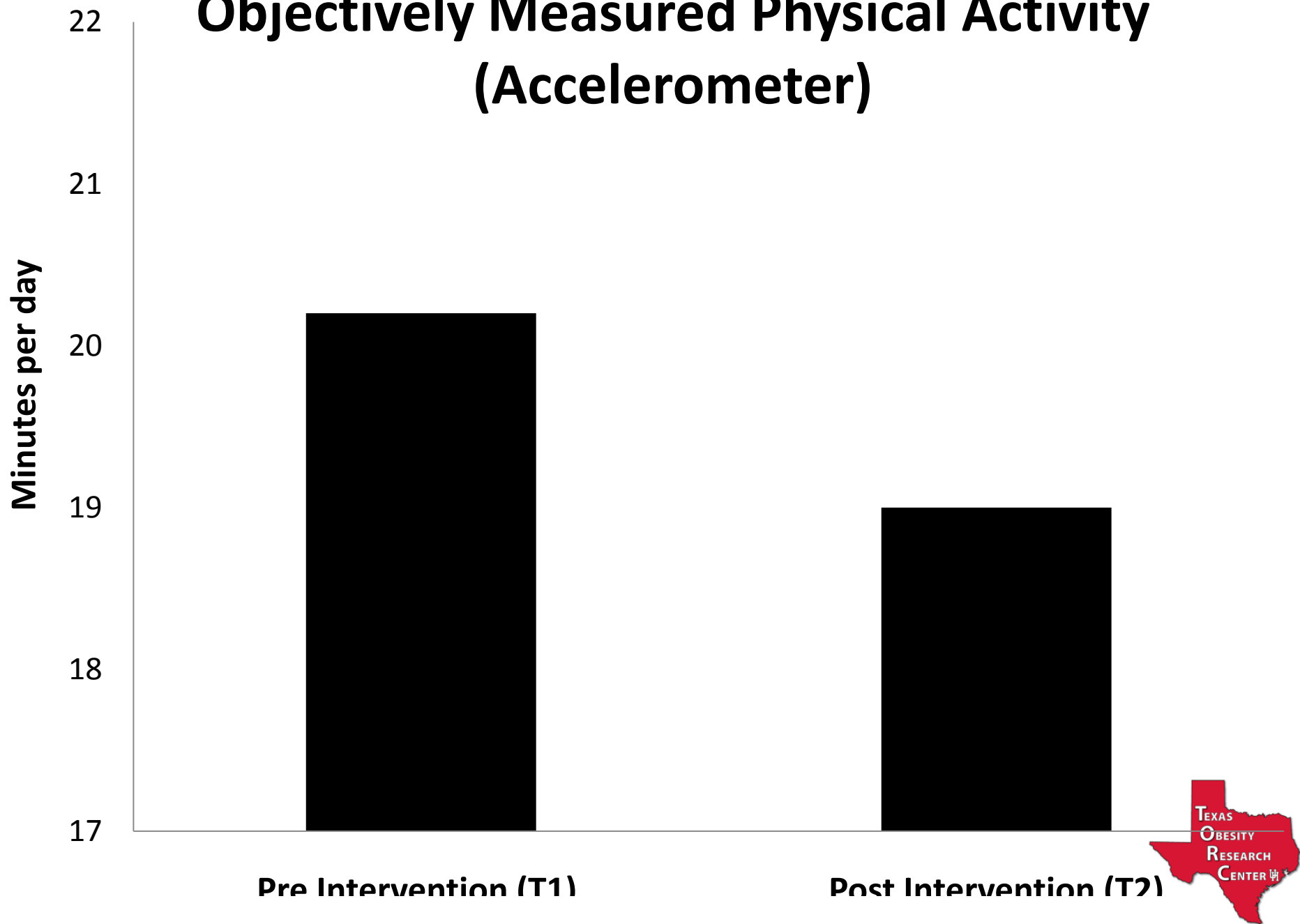
Self-Reported Physical Activity (IPAQ)



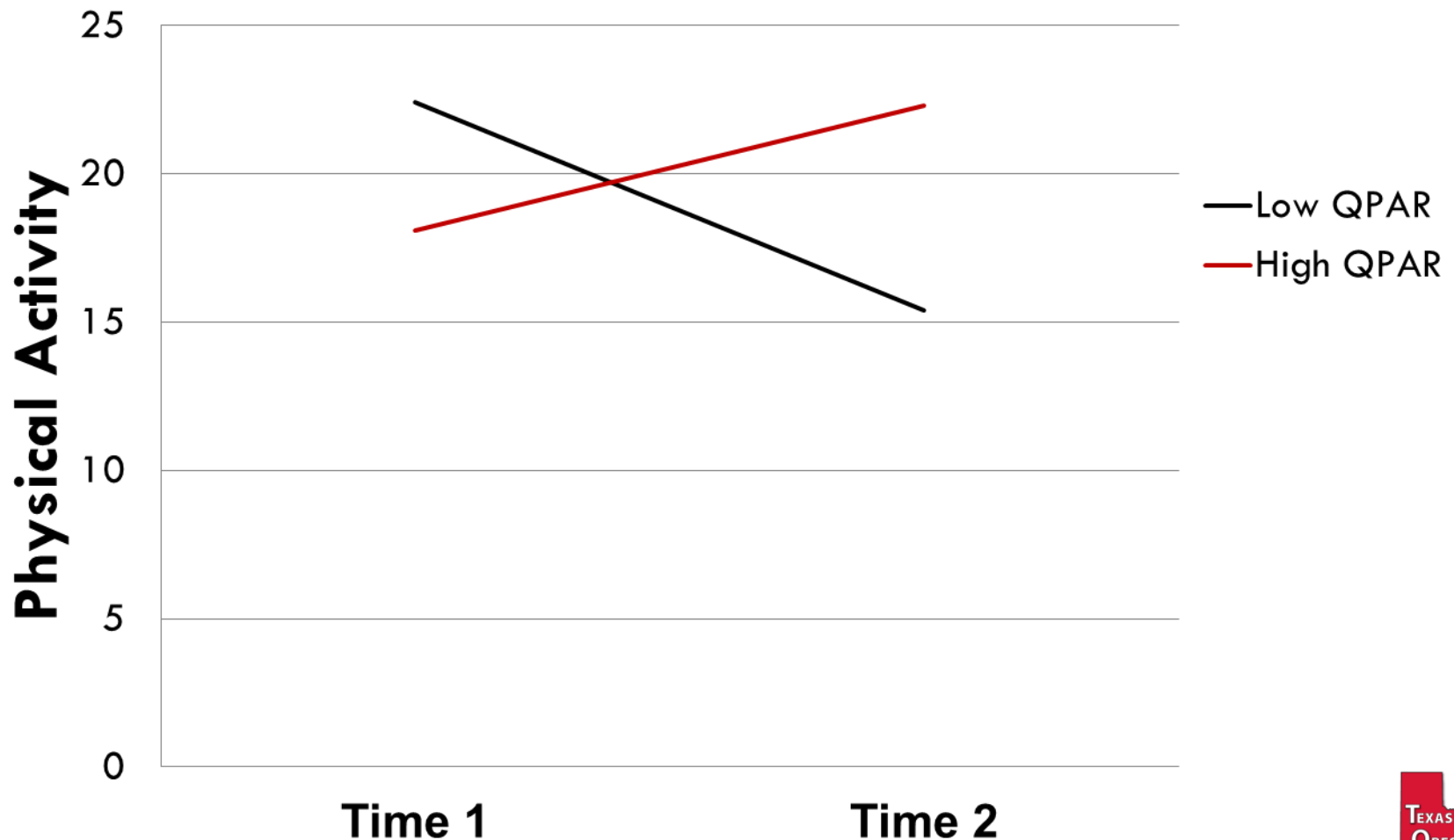
All $p < .001$, except Home/Gardening



Objectively Measured Physical Activity (Accelerometer)



Interaction Between QPAR and Neighborhood SES



Accelerometer Measured PA; Interaction: ($F(1,57)=8.108, p=.006$)



Conclusions

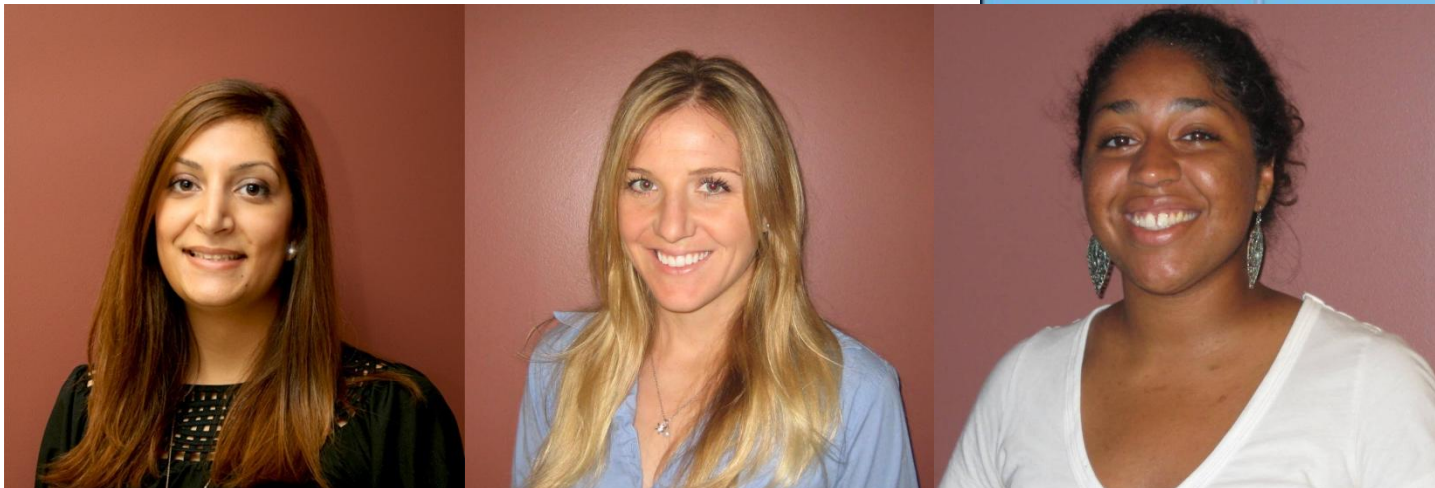
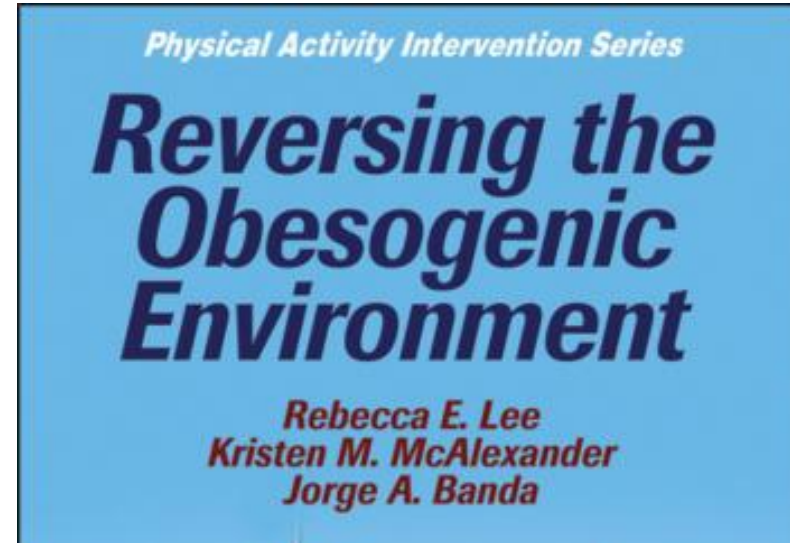
- Access to more, higher quality resources may positively influence changes in objectively measured physical activity regardless of neighborhood SES.
- Simply having access to a resource may not be sufficient to impact physical activity activity.
- Improving the quality of existing resources may be a good strategy to increase physical activity.



Gracias y Pocito Mas...



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www.hhp.uh.edu/obesity



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