Health Care Providers' Recommendations for Physical Activity and Individuals' Adherence: Racial/Ethnic disparities among U.S. Arthritis Population

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2015 APHA – Innovative Approaches to Health Communication Interventions and Research Section

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Research Team

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Background

- About 52.5 million U.S. adults had self-reported physician-diagnosed arthritis according to 2010-2012 National Health Interview Survey and it is projected to be 67 million by 2030.
- With the aging population and rise in obesity, prevalence, health impact, and economic consequences of arthritis is predicted to increase dramatically.
- The 2012 American College of Rheumatology guidelines recommends 30 minutes of light- to moderate-intensity physical activity five days a week.

The issue…

- Despite the known benefits of physical activity, adherence to physical activity (40-50%) is low overall in individuals with arthritis.

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What is known…

- One of the strategies to promote physical activity is recommendations from health care providers.
- Health care providers' recommendations act as catalyst for health promoting behavior.
- Racial/ ethnic minorities tend to receive poorer quality care compared with Whites, even when access-related factors, such as insurance status and income are controlled.

The gap…

- While, previous studies report age-based differences in health care providers' recommendations for physical activity and adherence, we lack information on whether race/ethnicity is associated with providers' recommendations for physical activity or individual's adherence.

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Objectives

- To determine the association between individuals' race/ethnicity and health care providers' recommendations for physical activity.
- To estimate the association between individuals' race/ethnicity and adherence to physical activity guidelines among those who received providers' recommendations.

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Methods

- A retrospective cross-sectional design based on 2011 and 2013 Behavioral Risk Factor Surveillance System Survey.
- Sample includes individuals ≥ 45 years old with self-reported physician-diagnosed arthritis (n=26,186) representing 16 U.S. States.

  North: PA,NY
  Midwest: KS,MI,MN, MS,MO, MT, WI
  West: CA,OR,UT
  South: FL,SC,TN, KY

- A three-level psychosocial framework (individual, interpersonal, and environmental factors) is used to ensure all relevant factors are considered in the analysis.
- Outcome variables were health care providers' recommendations and adherence to physical activity guidelines.

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Outcome Variables Variables and Measurement

Variables	Measurement
Health care providers' recommendations for physical activity	No
	Yes
Adherence to physical activity guidelines (150 minutes of physical activity in a week)	Not Adhered
	Adhered

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Predictors Variables and Measurement

Variables	Measurement
Individual-level factors	
Race	White
	African American
	Hispanic
Age Groups	≥ 65
	45-64
Gender	Female
	Male
Health Coverage	No
	Yes
BMI	Obese
	Non-obese
Health Status	Poor
	Good
Pain level	Mean(SD)
No. of Co-morbidities	Mean(SD)

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Predictors
Variables and Measurement

Variables	Measurement
Interpersonal-level factors	
Marital Status	Others Married
Usual Source of Care	No Yes

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Predictors
Variables and Measurement

Variables	Measurement
Environmental-Level Factors	
Education	< High School High School Some College or technical education 4yr college or higher
Employment	Unemployed Employed Others (Retired, Disabled, Homemaker, Student)
Income	Undisclosed <$50,000 ≥$50,000
Region	Northeast Midwest South West

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Analyses

- Multicollinearity, univariate, and bivariate statistics were examined.
- Associations were examined using two multivariate logistic regression models.
- Used sample weights to account for complex sampling design of survey data.
- Data management and analyses were conducted using SPSS version 21(IBM, Armonk NY) and Microsoft Excel 2007 (Microsoft, Redmond WA).

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Results

Table 1: Characteristics of individuals with physician-diagnosed arthritis from 2011 and 2013 Behavioral Risk Factor Surveillance System Survey

Variables		Overall (n=26,186)	White (22,850)	African American (n=2,799)	Hispanic (n=537)	p-value
Individual Factors						
Race	White	80.9	-	-	-	
	African American	10.7	-	-	-	
	Hispanic of any race	8.4	-	-	-	
Age	45-64	56.1	54.2	60.8	67.6	<.01*
	65 plus	43.9	45.8	39.2	32.4	
Gender	Female	55.8	55.3	53.0	64.9	.01*
	Male	44.2	44.7	47.0	35.1	
Health Coverage	No	8.0	6.6	12.3	15.5	<.001*
	Yes	92.0	93.4	87.7	84.5	
BMI	Obese	40.1	37.6	52.7	48.2	<.001*
	Overweight	36.1	36.7	31.2	36.0	
	Normal/Underweight	23.8	25.7	16.1	15.7	
Health Status	Poor	34.4	30.8	41.4	59.9	<.001*
	Good	65.6	69.2	58.6	40.1	
Pain	Mean(SD)	4.7(2.8)	4.5(2.6)	5.8(3.0)	5.8(2.7)	<.001*
No. of co-morbidities	Mean(SD)	1.5(1.4)	1.5(1.4)	1.5(1.3)	1.5(1.4)	.64
Interpersonal Factors						
Marital Status	Others	41.8	39.0	61.5	42.9	<.001*
	Married	58.2	61.0	38.5	57.1	
Usual source for care	No	14.7	13.5	17.9	21.8	.01*
	Yes	85.3	86.5	82.1	78.2	

*Significant p<0.05

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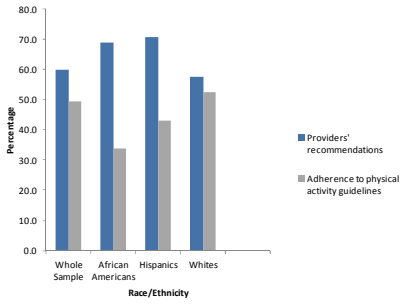
Table 1 contd…

Variables		Overall (n=26,186)	White (22,850)	African American (n=2,799)	Hispanic (n=537)	p-value
Environmental Factors						
Education	< High School	15.3	10.9	24.8	45.4	<.001*
	High School	31.1	32.3	31.8	19.1	
	Some College or technical education	32.1	33.2	29.4	24.8	
	4yr college or higher	21.4	23.5	14.0	1.07	
Employment	Unemployed	5.8	5.2	8.3	8.6	.02*
	Others (Retired Homemakers, Disabled Students)	62.2	61.7	65.0	64.0	
	Employed	31.9	33.1	26.7	27.4	
Income	<$50,000	63.8	60.6	78.3	77.0	<.001*
	≥$50,000	36.2	39.4	21.7	23.0	
Region	Northeast	20.3	19.9	21.5	22.7	
	Midwest	29.8	32.5	26.9	7.9	<.001*
	South	24.6	24.3	32.8	17.4	
	West	25.2	23.3	18.8	51.9	

* Significant p<0.05

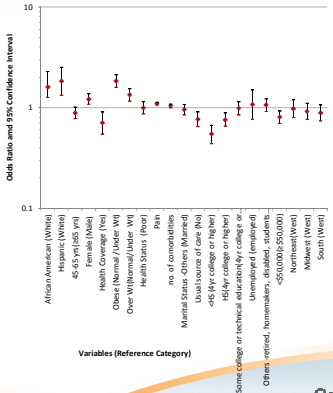
Results Contd…

Figure 1: Adherence and healthcare providers' recommendations by race/ethnicity



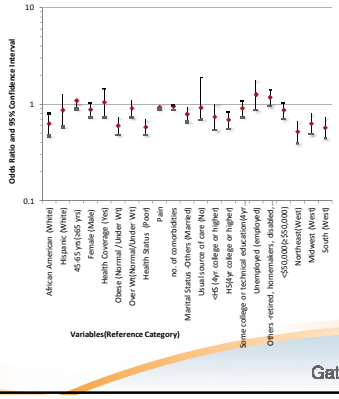
Results Contd…

Figure 1: Results from logistic regression showing association between race/ethnicity and healthcare providers' recommendations for physical activity among individuals with arthritis (n=26,186)



Results Contd…

Figure 3 Results from logistic regression showing association between race/ethnicity and adherence to physical activity guidelines among individuals with arthritis who received healthcare providers' recommendations (n=15,157)



Conclusions

- Despite the evidence that physical activity improves HRQOL, adherence to physical activity guidelines is low in our sample.
- Individual's race /ethnicity was associated with health care providers' recommendations for physical activity.
  - Reverse disparity
  - Quality of care issue
- Among individuals who received physical activity recommendations, African-Americans were less likely to adhere to guidelines compared to Whites.
  - May indicate health care providers' lack of cultural competency
  - No built in environment for physical activity

Limitations

- The responses are self-reports; respondents may under-or over-report their responses. In addition, there is a possibility of social desirability and recall bias.
- The survey excludes individuals in institutions and the military.
- The study could not distinguish the different types of arthritis prevalent in the sample.
- Confounders: Individuals' past exercise behavior, contextual variables, such as time, motivation, availability of recreational facilities, and neighborhood crime rate.
- Causality cannot be inferred due to the cross-sectional design of the study.

Policy Implications

- Incorporation of cultural competency training into medical school curriculum and continuing medical education to improve cultural awareness and sensitivity.
- Health care providers need to provide recommendations to all individuals with arthritis.
- Health literacy among racial and ethnic groups must be strengthened in a culturally and sensitive manner.

Questions