

Are Physical Activity and Sun Safe Behaviors Associated? Evidence from HINTS 2005

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Background

- ✓ National recommendations (CDC; USDA) advocate moderate intensity physical activity for at least 30 minutes on 5 or more days of the week
- ✓ Healthy People 2010 advocates an increased proportion of trips made by walking and bicycling
- ✓ Increased activity outdoors will help reach these goals and in the case of transportation-related physical activity is necessary for increased walking and bicycling
- ✓ Health People 2010 recommends an increase in the proportion of persons avoiding the sun between 10am and 4pm, wearing sun-protective clothing, and using sunscreen
- ✓ Recommendations for increased physical activity and for skin cancer prevention may be at odds. Increased adherence to skin cancer prevention recommendations (e.g., avoiding the sun) may limit physical activity occurring outdoors and may make these activities more difficult or uncomfortable to execute (e.g., wearing hot or uncomfortable sun protective clothing)
- ✓ This study explored the relationship between sun safe behavior and physical activity using HINTS 2005

Hypotheses

- ✓ Higher levels of PA are related to more frequent use of sunscreen
- ✓ Higher levels of PA are related to lower levels of seeking shade and wearing protective clothing (hat, long-sleeve shirts, and long pants)



Method

- Dataset**
- ✓ Health Information National Trends Survey 2005, conducted by NCI
 - ✓ Data obtained by list-assisted random-digit-dial telephone interviews in English or Spanish
 - ✓ Response rates: Household screener 34%; Extended interview 61%
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- Sample**
- ✓ N=5,586 complete responses
 - ✓ Ages: 18 +
 - ✓ Various races and ethnicities
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- Measures**
- ✓ A **PA independent variable** was created based on weekly minutes of moderate activity and coded as: 1) 0 min; 2) 1-149 min; 3) 150+ min
 - ✓ **Covariates:** Demographics - *age, gender, race/ethnicity, education*. Communication variables - *general health, cancer history, internet use* (none, search non-health information, search sun safety/PA information), *social networks* (none, ≥ 1 non-health network, ≥ 1 network providing health information)
 - ✓ **Dependent variables:** Frequency of *wearing hats, long-sleeve shirts, long pants, wearing sunscreen, and using shade*. Variables assessed using 5-point scales - higher numbers represent more of the behavior and treated as continuous.
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- Data Analysis**
- ✓ All statistical analyses conducted in SUDAAN to account for the complex sampling design
 - ✓ Preliminary univariate regression models
 - ✓ Multivariable regression models with entry of predictors (demographics, general health & cancer history, internet & social networks, exercise) in a hierarchical fashion
 - ✓ Separate multivariate regression models for each outcome
 - ✓ Interaction tested between exercise and covariates: cancer history, gender, education & social networks

Main Findings

Predictor	Sunscreen	Shade	Hat
	β	β	β
Age			
18-29	-.04	-.31 ^c	-.66 ^c
30-39	.09	-.26 ^c	-.48 ^c
40-49	.08	-.14 ^c	-.35 ^c
Ref: 50+	.00	.00	.00
Gender			
Male	-.68 ^c	-.26 ^c	.78 ^c
Ref: Female	.00	.00	.00
Race/ethnicity			
Hispanic	-.02	.03	-.28
NH white	.04	-.26 ^c	-.57 ^c
NH black	-.98 ^c	.04	-.32
Ref: NH other	.00	.00	.00
Education			
< HS	-.54 ^c	.09	-.06
HS graduate	-.47 ^c	.02	-.25
Some college	-.37 ^c	-.07	-.12
Bachelor's degree	-.06	.02	-.03
Ref: post-bacc.	.00	.00	.00
General health			
Excellent	.47 ^b	-.04	.07
Very good	.40 ^b	-.03	.13
Good	.23	.04	.04
Fair	.12	.06	.05
Ref: poor	.00	.00	.00
Cancer history			
Non-skin	.01	.22 ^b	.02
Skin	.62 ^a	.16 ^b	.20
Ref: none	.00	.00	.00
Internet use			
Yes – not PA/sun	.07	.01	-.20
Yes – PA/sun	.30 ^a	.11	-.13
Ref: none	.00	.00	.00
Social networks			
None	-.23 ^b	-.02	-.39 ^c
Member/not health	-.07	-.05	-.32 ^c
Ref: member/health	.00	.00	.00
PA			
0 min/wk	-.38 ^c	.21 ^a	-.24 ^a
1-149 min/wk	.04	.02	-.01
Ref: 150+ min/wk	.00	.00	.00

^a p<.05; ^b p<.01; ^c p<.001

Conclusions & Summary of Findings

- ✓ Higher PA associated with higher frequency of sunscreen use & wearing a hat after controlling for covariates
- ✓ Higher PA may limit shade seeking potentially increasing UV exposure
- ✓ Interesting covariate relationships: Social network membership associated with increased use of sunscreen and hats. Skin cancer history and internet use positively associated with use of sunscreen.
- ✓ Interactions were non-significant