PERCEIVED NEIGHBORHOOD SAFETY AND HEALTH BEHAVIORS: A CROSS-SECTIONAL STUDY

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Data Source: Survey of Community, Crime, and Health, 1995, 1998 [United States]

IMPORTANCE OF PHYSICAL ACTIVITY

Serves as primary and secondary prevention to chronic disease

(Gomez-Carera, Domenech & Viña, 2007)

Decreases risk of falls and fall injuries in older adults

(Lee & Buchner, 2008).

Increased long-term energy throughout the day

(Thayer, 1987)

Improve cognitive function while reducing anxiety

(Piercy, 2018)

POSSIBLE EFFECTS OF PERCEIVED NEIGHBORHOOD SAFETY (PNS) ON HEALTH BEHAVIORS

Shigematsu et al., 2020

- Examined age-related differences in walking frequency and PNS
- Found walking for transportation was significantly related to PNS
- Positive association
- Looked at attributes of neighborhoods as well as safety

Humpel, Owen, & Leslie, 2002

- PNS associated with residents performing moderate activity
- Positive association between moderate activity and residents feeling that their neighborhood was friendly and safe from crime
- Supporting environment necessary to increase activity levels

Balfour & Kaplan, 2002

- A neighborhood perceived as unsafe by older adults has been shown to significantly decrease their physical activity
- Reporting of multiple incidents by individuals was associated with poorer health

GAPS IN THE RESEARCH

LIMITED SAFETY VARIABLE

- Kerr at al., (2015) used only 2 items when scoring safety
- Leslie, Cerin and Kremer (2010) study contained only one item labeled "crime"
- Goal is to create a more comprehensive safety index

AGE GAP

- Majority of moderate exercise research is completed on younger and older populations
- Typically, at risk for not getting enough energy and see increased benefits
- Bulk of population 18-65 still benefit from physical activity

#1

Is there an association between perceived neighborhood safety and frequency of walking among Illinois adults?

Hypothesis: There will be a positive association between perceived neighborhood safety and the number of walks a person takes weekly.

#2

Will the level of perceived neighborhood safety affect whether an Illinois adult gets enough weekly moderate exercise?

Hypothesis: Participants who score higher on the perceived neighborhood safety index will be less likely to meet American College of Sports Medicine (ACSM) recommended guidelines.

PERCEIVED NEIGHBORHOOD SAFETY INDEX

My neighborhood is safe:
1 2 3 4 5

1	Neighborhood is safe	1 2 3 4 5
2	People watch out for each other	1 2 3 4 5
3	Has adequate police	1 2 3 4 5
4	Can trust people	1 2 3 4 5
5	Has people hanging around	1 2 3 4 5
6	Has a lot of crime	1 2 3 4 5
7	Has too much drug use	1 2 3 4 5
8	Has too much alcohol use	1 2 3 4 5
9	Has a lot of graffiti	1 2 3 4 5
10	Is noisy	1 2 3 4 5
11	Has a lot of abandoned buildings	1 2 3 4 5
12	Is clean	1 2 3 4 5
13	Afraid to walk at night near home	1 2 3 4 5
14	Vandalism is common in neighborhood	1 2 3 4 5
15	Has trouble with neighbors	1 2 3 4 5
16	People take care of homes in neighborhood	1 2 3 4 5

WALKING FREQUENCY

- Was initially reported as two responses
  - Code for numeric value
  - Code for day/week/month/year
- In final report: number of walks/week
- Participants were only included if they answered this question

MODERATE/STRENUOUS ACTIVITY

- Reported as moderate and strenuous exercise
- Also reported as two answers: numeric and unit
  - Handled the same way as walking frequency
- ACSM recommends 150 minutes per week of moderate exercise
- Moderate/Strenuous exercise was categorized as one
- If participant reported 3 times a week or more, they were classified as “meets the exercise requirement”

Descriptive Statistics

Gender of Respondent

Gender	Frequency	Percent
Male	426	40.88
Female	615	59.02
Do Not Know	1	0.10

Highest Education Level of Respondent

Education Level	Frequency	Percent
Less than High School Graduate	39	4.43
Some College	445	50.57
Undergraduate grad or higher	396	45.00

152 missing

Marital Status of Respondent

Marital Status	Frequency	Percent
Married	695	66.96
Separated	188	18.11
Single	155	14.93

4 missing

Race of Respondent

Race	Frequency	Percent
White	918	88.44
Black	64	6.17
Hispanic/Spanish	26	2.50
Other	30	2.89

4 missing

Age of Respondent

N	Mean	Std Dev	Min	Max
1042	47.9	15.5	21	94

CRUDE ESTIMATE
WALKING FREQUENCY VS PNS INDEX

Parameter Estimate: 0.51779
P value: 0.3568
95% Confidence Interval: (0.484, 0.552)

Conclusion: No statistically significant relationship between walking frequency and PNS Index

ADJUSTED ESTIMATE
WALKING FREQUENCY VS PNS INDEX

Confounders Adjusted For:
Race, Marital Status, Education

Point Estimate: 0.473
P value: 0.40
95% Confidence Interval: (0.439, 0.507)

Conclusion: No statistically significant relationship between walking frequency and PNS index

CRUDE ESTIMATE MEETING EXERCISE REQUIREMENT VS PNS INDEX

Odd Ratio Estimate: 1.858
P value: <.0001
Confidence Intervals: (1.394, 2.477)

Conclusion: There is a statistically significant relationship between individuals meeting the ACSM exercise requirement and their PNS index.

ADJUSTED ESTIMATE MEETING EXERCISE REQUIREMENT VS PNS INDEX

Confounders Adjusted For:
Education

Odds Ratio Estimate: 1.626
P value: 0.0033
Confidence Intervals: (1.175, 2.249)

Conclusion: There is a statistically significant relationship between individuals meeting the ACSM exercise requirement and their PNS index.

CONCLUSIONS

There was no statistically significant relationship found between walking frequency and individuals perceived neighborhood safety index

For every 1 unit increase in safety index, the probability of not meeting the ACSM exercise requirement is 1.626 times larger

LIMITATIONS

- Lack of a diverse sample population
- Data assumptions because of ”per week” format for walking and exercise
- Removal of income as possible confounder due to lack of response

Potential policies/actions to increase physical activity in communities that may be perceived as unsafe

Parks/Public Sector

- Increase in community/recreational centers
- Increase in parks/trails
- Funding designated to maintaining these areas
- “Connection Policy”

(Pray, 2015)

Healthcare Sector

- Educate practicing physicians on the importance of physical activity
- Make a diagnostic code for physical activity counseling
- Funding to increase practicing physicians and facilities

Workplace Sector

- Installation of bike racks
- Encouraging physical activity with gym memberships/incentives
- Encouraging “movement breaks”

Community Sector

- Strengthening sense of community
- Addition of supportive activities such as organized running clubs/exercise walks

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QUESTIONS?