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Keep It Moving: Factors to Consider in Establishing an Interprofessional Approach to Promote Physical Activity Among US Adults in the Northeast

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Abstract: Physical inactivity is a major public health concern. In the United States (US), only 21% of adults meet the established guidelines [1]. Recommendations for adults aged 18 to 64 years include 150 minutes of moderate activity, with 2 days of muscle-strengthening to improve overall health and to lower the risk for diseases such as diabetes, heart disease, and stroke [1]. Sedentary and inactive lifestyles increase the risks for developing many chronic and cardiovascular diseases and some cancers [1]. A growing body of literature focuses on built environments and its impact on physical activity using multilevel models. However, limited published research exists on cross level interaction effects between individual characteristics and environments. The purpose of this study was to examine environmental factors associated with physical activity for adults living in the Northeastern region of the United States (US) and to investigate whether these influences differ by subgroups of the population. The current study employed a cross-sectional research design among 45,251 adults, aged 18 years and older living in approximately 66 US counties. The dependent variable was physical activity level, measured as a dichotomous variable based on CDC's recommended physical activity guidelines. Data from the 2007 Behavioral Risk Factor Surveillance System (BRFSS) was linked with the US Census Bureau, the US Department of Agriculture (USDA), and the National Outdoor Recreation Supply Information System (NORSIS) databases. Multilevel logistic regression was used to examine direct effects of five environmental factors and to examine cross level interactions between individual characteristics and environmental influences. Findings from this study indicate that effective interprofessional solutions and appropriate interventions are needed to promote regular physical activity among adults.

Keywords: Physical Activity, Built Environments, Multilevel Models

1. Introduction

Physical inactivity is a major public health concern. In the United States (US), only 21% of adults meet the established guidelines [1]. Recommendations for adults aged 18 to 64 years include 150 minutes of moderate activity, with 2 days of muscle-strengthening to improve overall health and prevents the onset of diseases such as diabetes, heart disease, and stroke [1]. Sedentary and inactive lifestyles increase the risks for developing many chronic and cardiovascular diseases and some cancers [1]. Physical activity is a complex behavior related to many factors inclusive of individual characteristics [2-5] and environmental conditions [2-7]. Moreover, its phenomenon is a dynamic nature, involving the interaction of several variables and between cross level factors [8].

Recently, there has been an increase in research related to the effect of environments and their relationship to physical activity using multilevel models [9-12]. Results from the 2007 Behavioral Risk Factor Surveillance System (BRFSS) showed regional geographical disparities in physical activity [13]. Limited published research exists on cross level

interaction effects between individual characteristics and environments [9-10]. The purpose of this study was to examine environmental factors associated with physical activity for adults living in the Northeastern region of the US and to investigate whether these influences differ by subgroups of the population. The current study investigated environmental factors and how those environments influence subgroups.

Social ecological models assert that environmental settings influences human behavior; further, the same environment may affect individuals differently, depending on factors such as background to include socio-demographic characteristics, attitude toward physical activity, and health condition [8]. The current study applies the social ecological model as a theoretical framework to understand the major environmental settings (built environment, natural amenity, crime, urban level, and socioeconomic environment), controlling for individual covariates, that influence the physical activity behaviors of adults living in the Northeastern region in the US. Physical inactivity as a public concern will allow for appropriate interventions and interprofessional solutions needed to optimize resources and increase physical activity among adults. The current study addresses the following research question: What environmental factors are associated with physical activity among adults living in the Northeastern region of the US?

2. Methodology

Data was extracted from the BRFSS and linked with external environmental data sources. Missing data were excluded from the statistical calculations [13]. The quantitative data for this study was analyzed using the Statistical Package for Social Science (SPSS), version 19.0 [14]. Descriptive and inferential statistics were conducted to include multilevel logistic regression analyses. A p-value of <0.05 was considered statistically significant. The final sample for this study included approximately 66 counties and 45,251 adults, aged 18 years or older, living in the Northeastern region of the US.

The dependent variable in this study was physical activity level, measured as a dichotomous variable based on meeting national recommended exercise guidelines for adults, aged 18 years and older. Recommended levels of exercise for this group include participating in either moderate physical activity defined as 30 or more minutes per day for 5 or more days per week, or vigorous activity for 20 or more minutes per day on 3 or more days. Independent variables and covariates included gender, race, income, education, age, diet, self-reported overall life satisfaction and health status. County-level characteristics included five variables: the availability of physical activity built environments, the county characteristic for level of urbanization, SES indicator, the natural amenity environment, and the crime environment.

Individual Level Data. The current study uses data from that BRFSS Selected Metropolitan/Micropolitan Area Risks Trends (SMART) Data, a nationally representative sample of the US assessing data at local levels. The BRFSS assess health behaviors, prevention practices, and the accessibility of health care among adults each year [13]. Individual-level data measures were extracted.

County Level Data. Environmental level variables were measured using a county scale. In this study, the roles of physical activity built environments, natural amenities, socio-economic conditions, violent crime, and level of urbanization as metropolitan and non-metropolitan are representative of the respective county in which participants reside.

Physical activity built environment. The physical activity built environment variable is the summation of the availability of park and local facilities, public open space and green areas, and outdoor activity resources. The data were obtained from the National Outdoor Recreation Supply Information System (NORSIS) database [15]. The NORSIS assesses available outdoor recreation resources available in the US as part of the Renewable Resources Planning Act [15]. The database provides data at the county level [15].

Socio-economic factor. Level of education was identified as the socio-economic factor for the purposes of this study. These data were extracted from the US Census Bureau's 2007 County and City Data Book [16]. The County and City Data Book provides a comprehensive review of US counties and cities for localities with a population minimum of 25,000 [16]. Individuals with a Bachelor's degree or higher were included in the final analysis.

Crime environment. The number of violent crimes per population by county were extracted from the US Census Bureau's 2007 County and City Data Book as described above [16]. The summation of murder and non-negligent man slaughter, forcible rape, robbery, and aggravated assault was operationalized as crime for the purposes of this study [16].

Metropolitan or non-metropolitan settings. Data were obtained from the U. S. Department of Agriculture's (USDA) Economic Research Service (ERS) using the 2003 Rural-Urban Continuum Codes to identify level of urbanization. This database differentiates metropolitan and non-metropolitan characteristics using a classification scheme [17]. Urbanization in this study was operationalized as metropolitan or non-metropolitan.

Natural amenities. Natural amenities data were obtained from the United States Department of Agriculture's Economic Research Service [17]. The natural amenities scale encompasses climate, natural and artificial physical characteristics, seasonal components, and areas covered by water. Higher scale scores are indicative of higher levels of natural amenities.

3. Statistical Analysis

Multilevel regression modeling was used to investigate the relationships between variables observed at different levels [18-23]. This study examined whether environments influenced physical activity using multilevel logistic regression models with random intercepts based on restricted penalized quasi-likelihood (PQL) estimation [18-23]. The variance

inflation factor (VIF) and tolerance to determine co-linearity was used. Multicollinearity was indicate of a VIF greater than 10 and tolerance less than 0.1 [18]. A null model excluding explanatory variables was performed to determine physical activity variation by county. To measure the heterogeneity of physical activity across regions, median odd ratios were calculated to quantify variations between clusters [19-20]. In this study, an assumption was made that there were no differences between counties in the probability of meeting physical activity recommendation levels when MOR=1.

Null Model. The initial analysis for this study was conducted using a null model to evaluate physical activity and the variation by counties. To test the variation, an MOR was calculated to evaluate heterogeneity among neighborhoods.

Model 1- Individual-level characteristics model. Model 1 included individual level covariates into the null model.

Model 2- Neighborhood-level characteristics model. Neighborhood level characteristics to include physical activity built environments, SES context, level of urbanization, crime environment, and natural environments of the individual's respective county were included in the previous model to create model 2.

Models 3, 4, 5, 6, and 7 - Cross level interactions. Cross-level interaction effects were conducted to examine the influence of county-environments by three subgroups (age, gender, and race). Model 3 considers the influence of built environment to physical activity by subgroups; Model 4 considers the influence of natural environment to physical activity by subgroups; Model 5 considers the influence of violent crime to physical activity by subgroups; Model 6 considers the influence of socioeconomic environment to physical activity by subgroups; and Model 7 considers the influence of urban status to physical activity by subgroups.

Table 1. *Characteristics of the Study Population.*

Characteristics of the Study Population	*N (45,251)*	%
Gender		
Male	17,363	38.4
Female	27,888	61.6
Race		
White	38,534	85.2
Black	2,556	5.6
Hispanic or Latino	2,483	5.5
Other	1,678	3.7
Income		
> 15K	4,431	9.8
15K < 25K	6,644	14.7
25K < 35K	4,746	10.5
35K < 50K	6,560	14.5
50K <	22,870	50.5
Education		
Less than high school	3,198	7.1
High school	12,286	27.2
Attend college	10,585	23.4
College or higher	19,182	42.4
Age		
18-27 yrs	2,366	5.2
28-37 yrs	5,795	12.8
38-47yrs	8,867	19.6
48-57yrs	10,077	22.3
58-67 yrs	8,546	18.9
68 yrs or more	9,600	21.2
Diet behavior		
Consume fruit & veg < 5 servings/day	32,418	71.6
Consume fruit & veg > 5servings/day	12,833	28.4
Overall Satisfaction		
Very satisfied with life	19,675	43.5
Satisfied with life	22,777	50.3
Dissatisfied with life	2,242	5.0
Very dissatisfied	557	1.2
Health status		
Excellent/very good/good	37,880	83.7
Fair/poor	7,371	16.3
Level of urbanization		
Metropolitan	41,844	92.5
Non-metropolitan	3,407	7.5

Abbreviations: N=number; %=Percentage; yrs=years; K=thousand; veg=vegetables;

Table 2. *Variance Inflation Factor and Tolerance.*

Predictors	Coefficient	
	Tol	VIF
Gender	.968	1.033
Race	.870	1.150
Income	.635	1.574
Education	.735	1.360
Age	.891	1.122
Diet behavior	.962	1.039
Emotional factor	.873	1.146
Health status	.827	1.209
Metropolitan characteristics	.876	1.142
Built environment	.871	1.148
Natural environment	.994	1.006
Educational environment	.864	1.157
Crime environment	.784	1.276

Abbreviations: Tol=Tolerance; VIF=(VIF).

Table 3. *Measures of Area Level Variation and Clustering in the Meeting of Physical Activity Recommendations, Median Odd Ratio from Multilevel Logistic Model.*

Model	MOR
Null model	1.17
Model 1 (null model + Age, income, educational level, race, gender, health status, diet behavior, and overall satisfaction)	1.10
Model 2 (model 1 + Built environment, natural amenity, crime, percentage of adults with bachelor's degree, and level of urbanization)	1.07

Abbreviations: MOR=Median Odd Ratio.

4. Results

The sample population included 45,251 adults, aged 18 years and older, living across 66 US counties in the Northeastern region. Characteristics of the study population are detailed in Table 1. The majority of participants were female (n=27,888, 61.6%), Non-Hispanic White, (n=38,534, 85.2%), with an income of $50,000 or more (n=22,870, 50.5%), living in metropolitan settings (n=41,844, 92.5%). College graduates accounted for nearly 42% of the total

sample. Participants between the ages of 18 and 27 years represented the smallest proportion of those physically active. Those consuming fruit and vegetables constituted a lower proportion compared to those who eat less healthy, 71.6% vs. 28.4% respectively. Approximately half of the participants (50.3%) reported that they were satisfied with their lifestyle. When asked to report current health status, approximately 87% responded as excellent/very good/good.

The MOR results shown in Table 3 indicate heterogeneity of the individual's physical activity across regions. The probability of meeting physical activity recommendations varied by neighborhood. After controlling for individual level variables in model 1, the variation across regions remained while estimated MORs decreased. MORs slightly decreased when county level characteristics were included, which suggested that physical activity disparities by counties are mediated by individual and environmental factors.

4.1. Multilevel Logistic Regression Results

Table 4 presents the multilevel analysis results. Results showed that metropolitan / non metropolitan environments and the built environment were significant environmental predictors in the Northeastern region. Adults living in metropolitan areas were more likely to be less physically active (Odds Ratio (OR) = 1.22, $p<0.05$). Adults living in counties characterized with more built environments were more physically active (OR=0.98, $p<0.05$). Cross level interaction between demographic factors (age, gender, and race) and county environmental conditions on physical activity from Models 3, 4, 5, 6, and 7 are shown in Table 5.

Table 4. *Individual and County Factors Associated with Physical Activity Identify by Multi Level Logistic Regression.*

Predictors	Model 1 (Individual)	Model 2 (Individual + County)
Individual level		
Gender		
Male	-0.147 (0.863)	-0.145 (0.865)
Female*		
Race		
White*		
Black	0.234 (1.264)	0.218 (1.244)
Hispanic or Latino	0.259 (1.296)	0.252 (1.287)
Other	0.344 (1.411)	0.34 (1.405)
Income		
> 15K	0.271 (1.311)	0.276 (1.318)
15K < 25K	0.215 (1.24)	0.22 (1.246)
25K < 35K	0.14 (1.15)	0.144 (1.155)
35K < 50K	0.034 (1.035)	0.039 (1.04)
50K <*		
Education		
Less than high school	0.216 (1.241)	0.216 (1.241)
High school	0.116 (1.123)	0.115 (1.122)
Attend college	0.083 (1.087)	0.084 (1.088)
College or higher*		
Age		
18-27 yrs	-0.753 (0.471)	-0.749 (0.473)
28-37 yrs	-0.463 (0.629)	-0.459 (0.632)
38-47yrs	-0.424 (0.654)	-0.421 (0.656)
48-57yrs	-0.355 (0.701)	-0.35 (0.705)
58-67 yrs	-0.242 (0.785)	-0.24 (0.787)
68 yrs or more*		
Diet behavior		
Consume fruit & veg < 5 servings/day	0.564 (1.758)	0.562 (1.754)
Consume fruit & veg > 5servings/day*		
Overall Satisfaction		
Very satisfied with life	-0.422 (0.656)	-0.419 (0.658)
Satisfied with life	-0.142 (0.868)	-0.14 (0.869)
Dissatisfied with life	-0.009 (0.991)	-0.007 (0.993)
Very dissatisfied*		
Health status		
Excellent/very good/good	-0.622 (0.537)	-0.592 (0.553)
Fair/poor*		
County level		
Level of urbanization		
Metropolitan		0.199 (1.22)
Non-metropolitan		
Built environment		-0.015 (0.985)
Natural environment		-0.030 (0.971)
SES (Educational environment)		0.000 (1.000)

Predictors	Model 1 (Individual)	Model 2 (Individual + County)
Violent Crime environment		-0.001 (0.999)
Median odd ratio	1.10	1.07

Abbreviations: yrs=years; K=thousand; veg=vegetables; SES=Social Economic Status

Note:
1) Represents a reference group.
2) Statistical significance in bold, $p < 0.05$.
3) (Coefficients between physical activity and predictors) (Odds ratio of not meeting physical activity recommendations).

Table 5. *Cross Level Interaction between Environmental Factors and Demographic Factors.*

	Environmental conditions									
	Built environment		Natural amenity		Violent crime		SES condition		Metro condition	
	Coeff	OR	Coeff	OR	Coeff	OR	Coeff	OR	Coeff	OR
Gender										
Male	-0.009	0.991	-0.031	0.969	-0.011	0.989*	0.004	1.004*	0.194	1.214
*Female	-0.018	0.982*	-0.028	0.972	0.004	1.004	-0.002	0.998	0.203	1.225
Age										
18-27 yrs	0.012	1.012	0.008	1.008	-0.011	0.989	-0.012	0.988	0.113	1.120
28-37 yrs	-0.026	0.974*	-0.003	0.997	0.004	1.004	0.002	1.002*	0.113	1.120
38-47 yrs	-0.022	0.978	-0.063	0.939*	0.007	1.007	-0.01	0.990	0.093	1.097*
48-57 yrs	-0.012	0.988	-0.061	0.941*	-0.017	0.983*	-0.012	0.988	0.263	1.301
58-67 yrs	-0.024	0.976	-0.026	0.974	0.014	1.014	-0.005	0.995	0.113	1.120*
*68 yrs<	-0.029	0.971*	0.006	1.006	0.001	1.001	-0.01	0.990	0.373	1.452*
Race										
Non-Hispanic Blacks	-0.002	0.998	-0.011	0.989	-0.018	0.982*	0.012	1.012*	-0.217	0.805
Hispanics	0.005	1.005	-0.01	0.990	-0.001	0.999	-0.014	0.986*	0.503	1.654
Other minorities	-0.016	0.984	0.087	1.091*	0.01	1.010	0.019	1.019*	0.693	2.000*
*Non-Hispanic Whites	-0.015	0.985*	-0.037	0.964*	0.002	1.002	-	1.000	0.183	1.201*

Abbreviations: OR=Odds ratio; Coeff=Coefficient; SES=Socioeconomic Status
Note:
1) Represents a reference group.
2) Statistical significance in bold, $p < 0.05$.
3) OR=Odds ratio of not meeting physical activity recommendations.

4.2. Built Environment

Gender. There were no moderating effects between gender and built environments. Findings indicated the females living in areas with increased availability of built environments were more likely to be physically active.

Age. Moderating effects existed between age and built environments.

Adults aged 68 years and up living in areas with an increased availability of built environments were less likely to engage in physical activity compared to adults 28-37 years.

Race. There were no moderating effects between race and built environments. Findings indicated that increased availability of built environments significantly decreased the odds of physical inactivity among Non-Hispanic Whites living in the Northeastern region.

4.3. Natural Amenity

Gender. There were no moderating effects between gender and natural amenities.

Age. There were no moderating effects between age and natural amenities. Results showed that adults 38-57 years were more likely to engage in physical activity when living in areas with more natural amenities.

Race. Findings indicated that Non-Hispanic Whites were more likely to engage in physical activity compared to other minorities in areas with a high presence of natural amenities available in the Northeastern region.

4.4. Violent Crime

Gender. There were no moderating effects between gender and violent crime.

Age. There were no moderating effects between age and violent crime. Findings showed that living in areas with increased violent crime decreased the odds of being physically active among adults aged 48-57 years.

Race. There were no moderating effects between race and violent crime. Findings indicated that increased availability of built environments significantly decreased the odds of inactivity among Non-Hispanic Whites living in the Northeastern region. Non-Hispanic Blacks living in counties with increased levels of violent crime were more physically active compared to their Non-Hispanic Black counterparts

living in counties with lower rates of crime.

4.4. Socio-Economic Condition

Gender. There were no moderating effects between gender and SES.

Age. There were no moderating effects between age and SES. Living in higher SES counties significantly increased the odds of physical inactivity among adults 28-37 years.

Race. There were no moderating effects between race and SES. Findings showed that counties with higher SES significantly decreased the odds of physical inactivity among Hispanics and increased the odds of physical inactivity among Non-Hispanic Blacks and other minorities.

4.5. Metro / Non-Metropolitan Conditions

Gender. There were no moderating effects between gender and levels of urbanization. Table 5 details the cross level interactions.

Age. Living in metropolitan areas increased the odds of being physically inactivity among adults 67 years and older compared to adults 38-47 years.

Race. Results showed that living in metropolitan areas increased the odds of being physically inactivity among other minorities compared to Non-Hispanic Whites.

5. Discussion

The purpose of this study was to examine environmental factors associated with physical activity for adults living in the Northeastern region of the US. Ecological models assert that the environment has the ability to promote or hinder health behavior [24-25]. Specifically in this research, the social ecological model provided a theoretical underpinning to investigate the effect of the environment context on health behavior, while cross level interactions identified how those conditions impacted subpopulations. Additionally, health behavior is not only influenced by environmental conditions, but is also dependent on individual factors such as attitude, knowledge, self-efficacy, culture, and demographic attributes. This study demonstrated that increased physical activity among the Northeastern region was associated with physical activity-related built environments and level of urbanization. Living in environments characterized as metropolitan may often impede physical activity. However, variation in physical activity was not associated with violent crime, presence of natural amenities, and SES environment. Living in a supportive environment with a significant presence of physical activity-related built environments facilitated active lifestyles.

5.1. Built Environment

In this study, the findings support an association between built environments and physical activity. Individuals who living in counties with a higher availability of physical activity-related built environments were likely to be more physically active compared to those in counties with a low availability of physical activity-related built environments. The cross-level interaction effects demonstrated that the influence of built environment are moderated by age but are not moderated by gender and race. The benefit of a physical activity related built environment appeared stronger in older adults relative to younger adults. Similar to this research, Chen et al. examined the association between neighborhood environments in Japan and habitual exercise (HE) across age group stratified as 20–39 (young-adults), 40–59 (middle-adults), and 60–79 (the older) [26]. Results showed that neighborhood environments such as proximity to service facilities, good view, and locations for walking were significantly associated with habitual exercise in the middle- and old-aged residents but were not associated in young adults [26]. Cain et al. demonstrated that among 4 age groups categorized as children, adolescents, adults, and older adults, leisure physical activity behavior was more likely to be influenced by a supportive environment in the older adults group [27].

5.2. Crime

While this study did not find a statistically significant relationship between violent crime and physically inactivity for the entire population within the Northeast region, results showed that Non-Hispanic Blacks residing in counties with higher crime activity were significantly physically active compared to their counterparts living in areas with lower crime activity. Under this circumstance, it is possible that the physical activity of this sub population involves active commuting activities such as walking. Research conducted by Ross & Mirowsky examined the relationship between living in a disadvantaged neighborhood and its impact on the health of the population in 2,482 Illinois adults, aged 18-92 years and found that walking was associated with education [28]. College educated residents were more likely to walk compared to their counterparts who were not college educated. Results from that study also showed that those residing in low income neighborhoods walked more compared to those living in neighborhoods with higher income.

5.3. Natural Amenities

Climate, natural and artificial physical characteristics, seasonal components, and areas covered by water are components that make up the natural amenities scale [17]. These environmental factors are qualities that are more often than not preferred by the general population [13]. For example, for some, warmer winters are considered more attractive. Conversely, warmer months are more attractive compared to winter months [17, 29-31]. Therefore, extreme cold-weather conditions in the Northeast region may be one explanation of an environmental factor that restricts the physical activity of this population [25]. The cross level interaction effects in this research study demonstrated that the influence of natural amenities was moderated by race, but not by gender and age. Results indicated that the positive

influences of natural amenities are stronger among Non-Hispanic Whites relative to other minorities in the Northeast region.

5.4. Socio-Economic Neighborhood

In this study, the results did not support the significant role of socio economic status (SES) in physical activity. Interestingly, other minorities such as Non-Hispanic Blacks and Asians living in higher SES counties were more physically inactive compared to those living in lower SES counties. Lindström et al (2001) found that barriers to physical activity resulted in disparities in leisure-time physical activity by socio-economic groups [32]. Physical activity barriers may be classified as either internal or external [33]. Among those living in higher SES counties, internal barriers are more common to include lack of motivation or lack of leisure time. External barriers to include lack of economic resources, transportation, illness or disability are more common. Results from this study showed stress and time may be barriers.

5.5. Metropolitan and Non-Metropolitan Environments

Chaudhury and colleagues found that city characteristics such as overcrowding and unsafe conditions are barriers which may impact the walkability of an environment designed for physical activity [34]. This study demonstrated that living in metropolitan areas was associated with decreased physical activity among adults living in the Northeast region. A sub group analysis showed that Asians living in metropolitan areas were more likely to be less physical physically active compared to their counterparts. Overall, minorities living in metropolitan areas were more physically inactive relative to those living in non-metropolitan areas. Cross-level interactions revealed that the influence of living in metropolitan areas and the odds of physical activity were positively, strongest among adults aged 68 years and older. Research conducted by Kelly-Schwartz et al demonstrated that adults living in metro areas with increased accessibility to walkable environments had better overall health than others, whereas those living in metropolitan areas with high densities had worse overall health [35].

6. Conclusions

Although some of the results of this study are significant, there are limitations. This study used secondary, publicly available data. Secondly, while the BRFFS is nationally representative of the US, data included adults, with a landline phone. Additionally, there may be limitations of the self-reported behaviors. Given additional threats to external and internal validity, generalizations should be made with caution with populations outside of this study's sample.

Several policy implications may be drawn from this study. For natural amenities, findings from this study suggested the development of outdoor physical activities/environments that are suitable for minorities living in cold weather. Moreover, the development of intervention programs to promote physical activity for high risk groups in metropolitan areas, such as the elderly and minority groups to include those that are foreign-born should be explored. Ross demonstrated that foreign-born populations were less physically active, which may increase susceptibility to a myriad of chronic diseases [36]. Resource optimization and understanding health behavior is necessary among these subpopulations. An aging adult population and changing demographics of the US prompts immediate attention to conduct future studies examining physical activity levels among foreign-born adults in various geographical locations to identify trends.

Results from this study indicate that physical activity varied by respective neighborhoods. Effective interprofesional solutions utilizing the expertise of health care workers would promote regular physical activity through health promotion and education efforts. Additionally, social workers and health educators are positioned to incorporate better outreach to members of the community that are less likely to engage in regular physical activity. Interprofessional solutions incorporating environmentalists to infuse discussions on the community's SES conditions and accessibility of built and natural environments that promote healthful living may be impactful. Architects and sub division developers may provide insight on the aesthetics of neighborhoods and their characteristics, and the design of future communities that would incorporate walkability features to include sidewalks that are pedestrian friendly, along with walking and biking trails that may increase neighborhoods to meet the physical activity recommendations. While promoting change at the individual level, health policy and environmental interventions will place emphasis on larger populations to increase regular physical activity to impact community-based changes.

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