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How Reported Usefulness Modifies the Association between Neighborhood Supports and Walking Behavior

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Abstract

Neighborhood supports have been associated with walking, but this association may be modified by reports about the usefulness of these supports for promoting walking. This study examined the association between reported presence of neighborhood supports and walking and whether usefulness modified this association in a nationwide sample of U.S. adults. Measures of reported presence and use or potential use (i.e., usefulness) of neighborhood supports (shops within walking distance, transit stops, sidewalks, parks, interesting things to look at, well-lit at night, low crime rate, and cars following speed limit) were examined in 3,973 adults who completed the 2014 SummerStyles survey. Multinomial regression models were used to examine the association between presence of supports with walking frequency (frequently, sometimes, rarely (referent)) and the role usefulness had on this association. The interaction term between reported presence and usefulness was significant for all supports ($p < 0.05$). For adults who reported a support as useful, a positive association between presence of the support and walking frequency was observed for all supports. For adults who did not report a support as useful, the association between presence of the support and walking frequency was null for most supports and negative for sidewalks, well-lit at night, and low crime rate. The association between presence of neighborhood supports and walking is modified by reported usefulness of the support. Tailoring initiatives to meet a community's supply of and affinity for neighborhood supports may help initiatives designed to promote walking and walkable communities succeed.

Keywords

behavior; community; commuting; environment design; safety; physical activity; recreation

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CONFLICT OF INTEREST

The authors declare there is no conflict of interest.

1. INTRODUCTION

Regular physical activity is associated with important health benefits, including the reduced risk for premature death, cardiovascular disease, type 2 diabetes, some cancers, and depression (Physical Activity Guidelines Advisory Committee, 2008). People can get these benefits through brisk walking or by adding brisk walking to other physical activities (U.S. Department of Health and Human Services, 2008). Walking can be promoted by creating communities where walking supports are present (U.S. Department of Health and Human Services, 2015). For example, walking has been associated with distance to shops and services; presence of sidewalks; aesthetics; and access to parks and recreational facilities (McCormack and Shiell, 2011; Saelens and Handy, 2008; Sugiyama et al., 2012). Fear of crime and traffic (McCormack and Shiell, 2011; Owen et al., 2004) and perceptions of an unsafe neighborhood (Centers for Disease Control and Prevention, 1999; Foster et al., 2014) can discourage walking, while the use of public transit can promote walking (Freeland et al., 2013; Lachapelle et al., 2011).

Some researchers have postulated that the association observed between community supports and walking is due to other factors, such as neighborhood self-selection or preferences (Frank et al., 2007; Handy et al., 2006; Van Dyck et al., 2011). Incorporating true experimental designs, such as randomly assigning people to neighborhoods and following them over time, is not practical (Centers for Disease Control and Prevention, 2009); however, researchers have conducted analyses to isolate effects of the built environment from neighborhood self-selection and preferences. Researchers examining the association between features of the built environment and walking have found the association remains after controlling for self-selection, although they also suggest self-selection or neighborhood preferences may modify this association (Christiansen et al., 2014; Frank et al., 2007; Van Dyck et al., 2013).

This study extends previous research by examining the role use or potential use (i.e., usefulness) of eight neighborhood walking supports has on the association between presence and walking behavior in a nationwide sample of U.S adults. We considered usefulness to be a proxy for individual preference and hypothesized the association between presence and walking behavior will be modified by reported usefulness. Walking supports examined included: shops within easy walking distance; transit stop within a 10–15 minute walk; sidewalks on most streets; parks, green spaces, or trails; interesting things to look at; well-lit at night; low crime rate; and cars following the speed limit. First, we examined the overall percentage of adults who reported having supports and whether supports were useful to their walking behavior. Second, we examined the association between presence of each support and walking frequency, and the role use or potential use played in this association.

2. METHODS

2.1. Survey

Data came from the summer wave of Porter Novelli's 2014 ConsumerStyles database, called SummerStyles. Each year, a ConsumerStyles database is built from a series of web-based surveys that gather insights about US consumers, including information about their health

attitudes and behaviors. In 2014, the spring wave of the survey was conducted among 6,713 adults age 18 or older who belong to the GfK Knowledge Panel.® Panel members are randomly recruited through probability-based sampling and membership is continuously replenished to maintain about 55,000 panelists.

The SummerStyles survey was sent during June and July to 6,159 adults who completed the spring wave. Survey completion took approximately 36 minutes. Those who completed the survey received reward points worth approximately $10 and were eligible to win an in-kind monthly sweepstakes prize. The Centers for Disease Control and Prevention (CDC) licensed the results of the survey after data were collected. CDC's analyses were exempt from institutional review board approval because personal identifiers were not included in the data file.

A total of 4,269 summer surveys were returned (response rate: 69%). Respondents whose questionnaires were missing data on presence of neighborhood walking supports (n=74), walking frequency (n=21), or both (n=8) were excluded from the analysis.

2.2. Measures

Walking.—Respondents were asked how often they usually walk for at least 10 minutes at a time. Respondents were instructed to consider walking for exercise/recreation, walking to a specific destination (e.g., work, school, transit stop), or walking their dog. Response categories included every day or most days, some days, hardly ever or never, and I am not physically able to do this. Adults who indicated that they were physically able to walk (n=3,973) were put into 3 categories for walking frequency: frequently, sometimes, and rarely.

Presence of neighborhood walking supports.—The presence of neighborhood supports was assessed by respondents selecting which (if any) of the following statements were true about their neighborhood:

- There are many shops, stores, markets, or other places to buy things within easy walking distance of my home.
- There is a transit stop within a 10–15 minute walk from my home.
- There are sidewalks on most of the streets in my neighborhood.
- My neighborhood has parks, green spaces, or trails for walking.
- The crime rate in my neighborhood is low.
- There are many interesting things to look at while walking in my neighborhood.
- It is safe to walk in my neighborhood because many drivers follow the posted speed limits.
- My neighborhood is well-lit at night.
- None of these.

Usefulness of neighborhood walking supports.—For supports identified as present, respondents were asked this follow-up question: “Below is the list of amenities that you indicated are available in your neighborhood. Which, if any, do you currently use/do?”

- I walk to nearby shops, stores, markets or other places to buy things.
- I walk to the transit stop.
- I walk on the sidewalks.
- I use the parks, green spaces, or trails for walking.
- I walk because of the low crime rate.
- I walk because there are many interesting things to look at in my neighborhood.
- I walk because drivers follow the posted speed limits.
- I walk because my neighborhood is well-lit at night.
- None of these.

For supports not identified as present, respondents were asked this follow-up question: “Below is the list of amenities that you indicated are not available in your neighborhood. Which, if any, of these would you use/do if they were available?”

- I would walk to nearby shops, stores, markets or other places to buy things.
- I would walk to a transit stop.
- I would walk on sidewalks.
- I would use parks, green spaces, or trails for walking.
- I would walk if the crime rate was low.
- I would walk if there were many interesting things to look at in my neighborhood.
- I would walk if drivers followed the posted speed limits.
- I would walk if my neighborhood was well-lit at night.
- None of these.

We used the answers to these questions to categorize a support as useful to a person’s walking behavior if it was selected during either follow-up question.

Covariates.—Categorical variables for demographic characteristics included the following: sex (men, women), age group (18–34, 35–49, 50–64, ≥65 years), education level (high school graduate or less, some college, college graduate), race/ethnicity (white non-Hispanic, black non-Hispanic, other), metropolitan statistical area (MSA) status (metro MSA, nonmetro MSA) and region (Northeast, Midwest, South, West). MSA status is based on a person’s location of residence, which is defined by the US Office of Management and Budget (U.S. Census Bureau).

2.3. Statistical Analysis

Data were weighted to match the 2014 US Current Population Survey proportions for sex, age, household income, education level, race/ethnicity, household size, MSA status, census region, and whether a respondent had Internet access before joining the panel. The percentage of adults reporting each neighborhood support as present was examined by walking frequency. The percentage who reported each support as useful to their walking behavior was examined by presence of the support and walking frequency. Orthogonal polynomial contrasts and pairwise t-tests were used to identify significant trends and differences by subgroups.

Two sets of separate multinomial logistic regression analyses were conducted for each neighborhood support, with walking frequency as the outcome (frequently, sometimes, rarely [referent]). Model 1 examined the association between presence of a support (main effect) and walking frequency. Model 2 examined whether usefulness of a support modified the association between the presence of a support and walking frequency. The main effect for usefulness and the interaction between presence and usefulness were added in Model 2. The 2 contrasts of interest compared the effect of the presence of a support separately for adults who identified the support as useful and those who did not. Models adjusted for sex, age group, education, race/ethnicity, MSA status, and region. Analyses were conducted in 2016 using SUDAAN, version 9.0 (Research Triangle Institute, Research Triangle Park, NC) to account for survey weights.

3. RESULTS

3.1. Study Population Characteristics

The majority of the sample was white non-Hispanic, had some college education or was a college graduate, and lived within a metro MSA (Table 1). An estimated 33.4% of respondents walked frequently, 41.8% walked sometimes, and 24.8% walked rarely.

3.2. Presence and Usefulness of Neighborhood Walking Supports

The percentage of adults who reported neighborhood supports as present ranged from 25.3% for interesting things to look at to 55.8% for low crime rate (Figure 1). Walking frequency was associated with all but 2 supports (low crime rate and well-lit at night). The percentage who reported the presence of these supports increased linearly as walking frequency increased, except for sidewalks, where the percentage was the same for adults who reported frequently or sometimes walking.

The percentage of adults who reported a support as useful to their walking behavior ranged from 17.5% for transit stops to 64.1% for sidewalks. Overall, walking frequency was associated with usefulness for all supports and the percentage who reported the support as useful was higher for adults who frequently or sometimes walked versus those who rarely walked. It was also higher for adults who frequently walked versus sometimes walked for shops, transit stops, sidewalks, parks, and interesting things to look at.

For all supports, the percentage of adults who reported that a support was present and useful was higher than the percentage who did not report a support as present and useful (Table 2). For adults reporting the support as present, the percentage of adults who reported a support as useful was significantly higher for those reporting frequently or sometimes walking versus those who rarely walked for all supports. For adults not reporting the support as present, the percentage who reported a support as useful was significantly higher for adults who walked frequently versus those who rarely walked for all supports except low crime rate. The comparison between sometimes walking and rarely walking was significant for shops, transit stops, sidewalks, parks, and interesting things to look at. The percentage of adults who reported a support as useful was significantly higher for those who walked frequently versus those who walked sometimes only for adults who reported shops, transit stops, and sidewalks.

3.3. Association Between Presence of Neighborhood Supports and Walking

Adults with shops, sidewalks, parks, interesting things to look at, and cars following the speed limit were more likely to frequently or sometimes walk versus rarely walk, although the comparison between sometimes and rarely walk was not significant for parks. The association was stronger for those reporting frequently walking versus sometimes walking for shops, parks, and interesting things to look at.

3.4. Effect Modification by Usefulness for the Association Between Presence of Neighborhood Supports and Walking

For all supports, the interaction term combining presence and usefulness of a support was significant in the adjusted multinomial model that examined walking frequency as the outcome (adjusted Wald $p < 0.05$, Table 3). These results indicate that the association between presence and walking frequency was modified by usefulness. For all supports, when the support was useful, a positive significant association was found between having the support and walking frequently or sometimes versus rarely (except for transit stops, where the comparison between sometimes versus rarely walking was not significant). The association was stronger for adults who walked frequently versus sometimes for shops, transit stops, and interesting things to look at. When the support was not reported as useful, a significant negative association was found between having the support and walking frequency for sidewalks, well-lit at night, and low crime rate (for crime, only the frequently versus rarely comparison was significant), while the association was for null for all other supports.

4. DISCUSSION

We found that adults' report of usefulness of neighborhood supports modified the association between the presence of supports and walking frequency. A positive association between presence of a support and walking frequency was found among adults who reported the support as useful. The association was null for most supports and negative for sidewalks, well-lit at night, and low crime rate for those who did not report a support as useful. Addressing issues related to both supply and demand for neighborhood walking

supports may be important to the success of initiatives promoting walking through walkable communities.

Our study found that the association between the presence of a support and walking frequency is strongest when adults report the support as useful. Adults who report that a support is not present in their neighborhood but they report it as useful may be a prime group to supply the support to and thereby improve their walking behavior. For adults who do not report a support as useful, other strategies, such as educating people about how neighborhood supports could help them integrate more walking into their lives and thereby improve their health, might be more effective.

Our findings on the presence of neighborhood supports and their association with walking frequency are consistent with other studies. Walking has been associated with environmental attributes such as distance to shops and services; sidewalks; aesthetics; and access to parks and trails (McCormack and Shiell, 2011; Owen et al., 2004; Saelens and Handy, 2008; Sugiyama et al., 2012). Some studies have shown that traffic-related fears discourage walking among adults (McCormack and Shiell, 2011; Owen et al., 2004), which is consistent with our finding that cars following the speed limit is associated with walking. The association between lighting and low crime rate with walking was not significant overall. A review by Bauman, et al, similarly concluded that the association between perceptions of lighting and crime rate with walking was not significant (Bauman and Bull, 2007). However, contrary to our findings, some studies have shown that fear of crime or perceptions of an unsafe neighborhood have been negatively associated with physical activity (Centers for Disease Control and Prevention, 1999; Foster et al., 2014). We are unsure as to why the evidence is mixed; however, in the future, studies that examine the association between crime and walking may need to more clearly define what is meant by crime or examine specific types of crime. In addition, it may be important to examine how associations may differ by population characteristics. For example, while evidence is mixed on whether higher crime is associated with walking, studies have shown associations between measures of crime and reduced walking or physical activity in minority groups and some inner-city populations (Gomez et al., 2004; McDonald, 2008).

Our study is unique in that we examined the role usefulness plays on the association between eight separate neighborhood supports and walking behavior. In general, our findings are comparable to those of other studies that controlled for adults' preferences related to residential selection. We found that associations between neighborhood supports and walking behavior are stronger when adults' report a support as useful. We also found, for the most part, that when a support was not reported as useful, there was no difference in walking frequency found between adults with and without the support. These findings are similar to previous literature examining neighborhood self-selection (Frank et al., 2007; Owen et al., 2007; Sallis et al., 2009). For example, Frank et al, found that individuals who preferred and lived in a walkable neighborhood walked most, while individuals who do not prefer a walkable environment walked little regardless of where they lived (Frank et al., 2007).

Some of our findings related to sidewalks, lighting, and crime were surprising. Among adults who did not report these supports as useful, significant negative associations were found. Although we are not able to identify reasons for these negative associations, a potential explanation may be that adults who do not have these supports have developed coping mechanisms to walk regardless of these supports. For example, a person living in a neighborhood with little car traffic might walk on the road and thus not perceive sidewalks as useful. Similarly adults who do not have lighting may cope by walking during daylight hours. If these coping mechanisms are associated with both access and usefulness, this may explain why these negative associations were observed. Future work may wish to examine why a negative association with walking is observed for some supports when the adult does not report the supports as useful, while for other supports the associations are null.

Many initiatives to promote walking focus on improving community walkability (U.S. Department of Health and Human Services, 2015). These initiatives can involve multiple changes to the community, and knowing exactly which supports are most effective and have the broadest reach is an area that needs continued exploration. Our study showed that, in some cases, the magnitude of the association between neighborhood supports and walking behavior was similar; however, differences in the potential reach of each support can be substantial because of differences in the percentage of adults who perceive them as useful. For example, while transit stops and shops within walking distance have similar associations with walking frequency when these supports are present, only 9% of adults who did not report transit stops as present reported them as useful; 36% who did not report shops as present reported them as useful. Some walking supports may also need to be combined with informational approaches to promote their use (Kahn et al., 2002) and change perceptions about their usefulness for walking. By combining multiple strategies, communities can address issues in both the supply of and perceived usefulness for neighborhood supports to promote walking.

This study has several limitations. Sample selection bias may be associated with our use of data from a mail survey of a panel of volunteers. However, previous research that compared random-digit-dialing and panel approaches found a general equivalence between results, suggesting that findings from panel studies are as acceptable as those using respondents selected randomly for telephone surveys (Fisher and Kane, 2004; Pollard, 2002). Another limitation is that the questions used to assess walking frequency and the presence and usefulness of neighborhood supports for walking do not have any information to confirm their reliability and validity. Although similar surveys, such as the Physical Activity Neighborhood Environment Survey, that use single questions to ask about the presence of similar environmental features have shown good evidence of reliability (Sallis et al., 2010), no evidence of validity is available for the survey questions. In addition, the way usefulness was assessed differed slightly for different supports and for those with and without supports. For half of the supports, the survey asked whether the support was being used or would be use (for those without the support); for the other half, the survey asked if the support was the reason or would be the reason (for those without the support) for walking. We are not sure how this difference influenced results, but future work may be needed to systematically examine methods to assess people's perceptions about the role supports can play in promoting walking. We were also unable to capture the purpose of

walking. Elasticity of the decision to walk in relation to the presence of supports may depend on walking purpose. A final limitation of this study is its cross-sectional design. Although presence and usefulness of neighborhood supports were associated with walking frequency, our study design does not allow us to identify whether these associations were causal.

This study also has several strengths. First, data about the usefulness of multiple neighborhood supports on walking behavior were available. To our knowledge, this information has not been collected or reported from a nationwide sample, and no studies have examined the joint effect of presence and usefulness on walking behavior in such a sample. In addition, our sample was drawn from a large, community-dwelling population. While our sample size did not allow us to examine associations separately by demographic subgroups, we were able to control our models for many covariates when examining associations. Future studies may wish to examine whether the associations we observed are similar when limiting analyses to more culturally and socioeconomic diverse populations.

5. CONCLUSIONS

Our study found that the presence of neighborhood supports is associated with walking frequency. This association is stronger when a support is present and adults report it as useful to their walking behavior. Programs to promote walking may need to address both the supply of and usefulness for neighborhood supports to be most effective. Community needs assessments that examine the existence of supports and the community's need for these supports may be valuable when designing and implementing programs and policies to promote walking.

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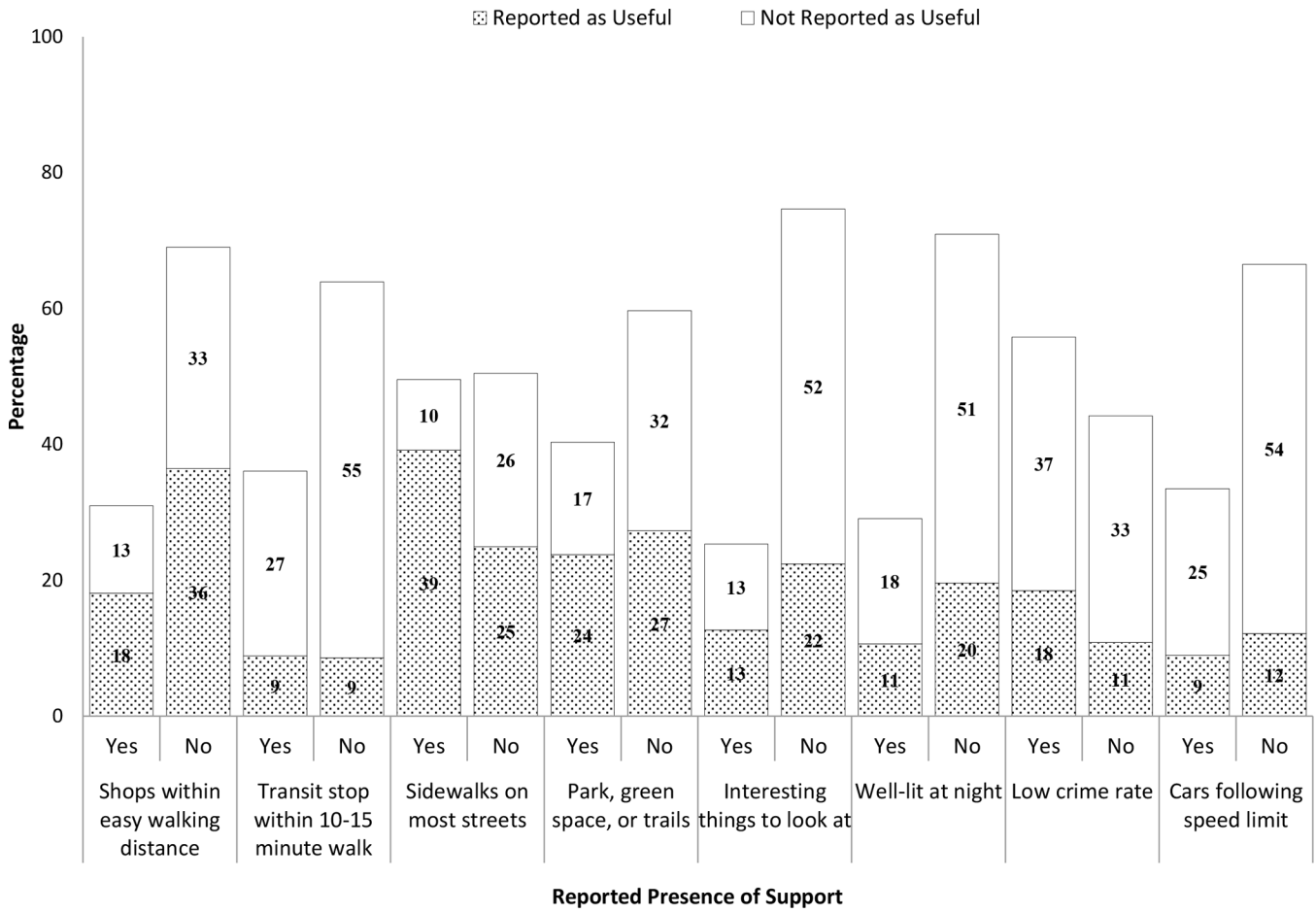

Figure 1.

Percentage of US Adults Reporting Presence and Usefulness of Neighborhood Supports for Walking, SummerStyles Survey, 2014.

Adults who indicated that they were unable to walk when asked how often they usually walk for at least 10 minutes at a time were excluded. A neighborhood support was categorized as present if the respondents selected it when asked to identify which (if any) were true about their neighborhood: many shops, stores, markets, or other places to buy things within easy walking distance; transit stop within a 10–15 minute walk; sidewalks on most of the streets; parks, green spaces, or trails for walking; low crime rate; many interesting things to look at while walking; safe because many drivers follow the posted speed limits, and well-lit at night. For supports identified as present, respondents were asked to select which (if any) they currently use or do because the support is present. For supports not identified as present, they were asked to select which (if any) they would use or do if the support was available. A support was categorized as useful if it was selected during either follow-up question.

Table 1.

Characteristics of Analytic Sample of US Adults, SummerStyles Survey, 2014[a]

	Unweighted		Weighted	
Characteristic	**Sample Size**	**%**	**%**	**SE**
Total	3,973	100	100	
Sex				
Men	1951	49.1	48.3	0.9
Women	2022	50.9	51.7	0.9
Age, years				
18–34	688	17.3	30.5	1.0
35–49	1,119	28.2	24.5	0.8
50–64	1,345	33.9	27.8	0.8
≥65	821	20.7	17.3	0.6
Education level				
High school graduate or less	1,391	35.0	40.8	1.0
Some college	1,246	31.4	29.6	0.8
College graduate	1,336	33.6	29.6	0.8
Race/ethnicity				
White, non-Hispanic	2,997	75.4	66.5	1.0
Black, non-Hispanic	368	9.3	11.1	0.6
Other[b]	608	15.3	22.4	0.9
Metropolitan statistical area (MSA) status				
Nonmetro MSA	615	15.5	15.2	0.7
Metro MSA	3,358	84.5	84.8	0.7
Region				
Northeast	702	17.7	18.1	0.7
Midwest	1,003	25.2	21.3	0.7
South	1,403	35.3	36.8	0.9
West	865	21.8	23.8	0.8
Walking frequency[c]				
Frequently	1,375	34.6	33.4	0.9
Sometimes	1,614	40.6	41.8	0.9
Rarely	984	25.8	24.8	0.8

[a] 103 respondents were excluded for missing data; 193 (4.6%) were excluded because they indicated that they were unable to walk when asked how often they usually walk for at least 10 minutes at a time.

[b] Other race/ethnicity includes Hispanic, American Indian or Alaska Native, Asian, and Native Hawaiian and Other Pacific Islander.

[c] Respondents were asked how often they usually walk for at least 10 minutes at a time and were instructed to consider walking for exercise/recreation, walking to a specific destination (e.g., work, school, transit stop), or walking their dog. Response categories included every day or most days (frequently), some days (sometimes), hardly ever or never (rarely), and I am not physically able to do this.

Table 2.

Percentage of US Adults Reporting the Presence and Usefulness of Neighborhood Supports for Walking, Overall and by Walking Frequency, SummerStyles Survey, 2014[a]

			Useful to Their Walking[c]					
	Support Present[b]		Overall		Adults With Support		Adults Without Support	
Support by Walking Frequency[a]	%	SE	%	SE	%	SE	%	SE
Shops within easy walking distance								
Frequently	36.3	1.5	62.1	1.6	71.0	2.5	57.1	2.0
Sometimes	30.5	1.4	57.3	1.5	60.0	2.8	56.0	1.8
Rarely	24.6	1.7	39.8	1.9	30.2	3.8	43.0	2.1
Transit stop within 10–15 minute walk								
Frequently	39.1	1.6	23.9	1.4	37.9	2.5	14.9	1.5
Sometimes	35.9	1.4	17.7	1.2	21.6	2.1	15.5	1.4
Rarely	32.2	1.8	8.4	1.1	8.7	1.7	8.3	1.3
Sidewalks on most streets								
Frequently	51.4	1.6	72.5	1.4	90.2	1.3	53.8	2.4
Sometimes	51.5	1.5	67.2	1.4	82.7	1.7	50.8	2.2
Rarely	43.7	1.9	47.5	1.9	54.1	2.9	42.4	2.5
Park, green space, or trails for walking								
Frequently	45.5	1.6	60.2	1.6	69.5	2.3	52.5	2.2
Sometimes	39.9	1.5	53.8	1.5	63.7	2.3	47.2	1.9
Rarely	34.2	1.8	34.3	1.8	31.0	3.1	36.1	2.3
Interesting things to look at								
Frequently	33.2	1.5	40.9	1.6	56.7	2.7	33.0	1.9
Sometimes	23.6	1.2	36.7	1.4	54.4	2.9	31.2	1.6
Rarely	17.7	1.4	24.6	1.6	23.2	3.6	24.8	1.8
Well-lit at night								
Frequently	30.2	1.4	35.3	1.5	47.3	2.8	30.0	1.8
Sometimes	29.0	1.4	31.5	1.4	39.8	2.8	28.1	1.6
Rarely	27.7	1.8	21.2	1.6	15.2	2.9	23.6	1.9
Low crime rate								
Frequently	57.1	1.6	35.2	1.5	42.2	2.0	25.9	2.3
Sometimes	56.0	1.5	32.4	1.4	37.4	1.9	26.0	2.1
Rarely	53.7	1.9	16.2	1.4	12.5	1.6	20.4	2.4
Cars following speed limit								
Frequently	36.1	1.5	25.0	1.4	34.0	2.5	19.9	1.6
Sometimes	34.0	1.4	22.3	1.3	28.6	2.3	19.1	1.5
Rarely	29.1	1.7	13.9	1.3	11.0	2.1	15.1	1.6

Abbreviations: SE, standard error.

[a]Respondents were asked how often they usually walk for at least 10 minutes at a time and were instructed to consider walking for exercise/recreation, walking to a specific destination (e.g., work, school, transit stop), or walking their dog. Response categories included every day or most days (frequently), some days (sometimes), hardly ever or never (rarely), and I am not physically able to do this. Adults who indicated that they were unable to walk when asked how often they usually walk for at least 10 minutes at a time were excluded.

[b]A neighborhood support was categorized as present if respondents selected it when asked to identify which (if any) were true about their neighborhood: many shops, stores, markets, or other places to buy things within easy walking distance; transit stop within a 10–15 minute walk; sidewalks on most of the streets; parks, green spaces, or trails for walking; low crime rate; many interesting things to look at while walking; safe because many drivers follow the posted speed limits; and well-lit at night.

[c]For supports identified as present, respondents were asked to select which (if any) they currently use or do because the support is present. For supports not identified as present, they were asked to select which (if any) they would use or do if the support was available. A support was categorized as useful if it was selected during either follow-up question.

Table 3:

Adjusted Odds Ratios of Walking Frequency by Presence Overall and when Stratified by Usefulness, SummerStyles Survey 2014[a]

Presence of Support[b] (Referent: Not Present)	Multinomial Model 1:[a,c] Walking Frequency (Referent: Rarely)				Multinomial Model 2:[a,c] Walking Frequency (Referent: Rarely) Stratified by Usefulness							
					Among those Reporting Support as Useful[d]				Among those Not Reporting Support as Useful[d]			
	Frequently		Sometimes		Frequently		Sometimes		Frequently		Sometimes	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Shops within easy walking distance	1.71	1.36, 2.15	1.27	1.01, 1.60	3.12	2.17, 4.50	1.97	1.36, 2.86	0.94	0.68, 1.31	0.95	0.70, 1.29
Transit stop within 10–15 minute walk	1.24	1.00, 1.55	1.08	0.87, 1.35	3.27	1.80, 5.94	1.49	0.82, 2.73	0.93	0.73, 1.18	1.03	0.81, 1.29
Sidewalks on most streets	1.24	1.01, 1.53	1.28	1.04, 1.58	1.63	1.24, 2.16	1.64	1.24, 2.15	0.35	0.24, 0.51	0.58	0.42, 0.81
Park, green space, or trails	1.47	1.19, 1.82	1.19	0.96, 1.46	2.35	1.68, 3.27	1.90	1.36, 2.66	0.88	0.65, 1.20	0.77	0.58, 1.01
Interesting things to look at	2.10	1.65, 2.65	1.35	1.07, 1.72	4.00	2.59, 6.15	2.61	1.69, 4.03	1.32	0.98, 1.77	0.87	0.65, 1.17
Well-lit at night	1.08	0.86, 1.34	1.04	0.83, 1.29	2.79	1.69, 4.61	2.36	1.41, 3.93	0.71	0.55, 0.92	0.77	0.60, 0.90
Low crime rate	1.03	0.84, 1.27	1.09	0.89, 1.33	2.77	1.77, 4.33	2.56	1.65, 3.97	0.73	0.58, 0.93	0.83	0.66, 1.04
Cars following speed limit	1.29	1.04, 1.60	1.22	0.99, 1.51	2.99	1.79, 4.99	2.48	1.48, 4.17	1.02	0.80, 1.29	1.04	0.83, 1.30

Abbreviations: AOR, adjusted odds ratio; CI, confidence interval; SE, standard error.

[a] All models adjusted for sex, age, education level, race/ethnicity, region, and MSA status.

[b] A neighborhood support was categorized as present if respondents selected it when asked to identify which (if any) were true about their neighborhood: many shops, stores, markets, or other places to buy things within easy walking distance; transit stop within a 10–15 minute walk; sidewalks on most of the streets; parks, green spaces, or trails for walking; low crime rate; many interesting things to look at while walking; safe because many drivers follow the posted speed limits; and well-lit at night.

[c] Respondents were asked how often they usually walk for at least 10 minutes at a time and were instructed to consider walking for exercise/recreation, walking to a specific destination (e.g., work, school, transit stop), or walking their dog. Response categories included every day or most days (frequently), some days (sometimes), hardly ever or never (rarely), and I am not physically able to do this. Adults who indicated that they were unable to walk when asked how often they usually walk for at least 10 minutes at a time were excluded.

[d] For supports identified as present, respondents were asked to select which (if any) they currently use or do because the support is present. For supports not identified as present, they were asked to select which (if any) they would use or do if the support was available. A support was categorized as useful if it was selected during either follow-up question.