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Changes in Perceptions of the Near-home Walking Environment Among US Adults—2015 and 2020 National Health Interview Survey

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Abstract

Background: The built environments in which we work, live, and play can influence physical activity behaviors, and perceptions of these environments are associated with walking behavior. This study's objective is to compare national-level data on perceptions of the near-home walking environment from the 2015 and 2020 National Health Interview Survey.

Methods: Adults in 2015 (n = 30,811) and 2020 (n = 29,636) reported perceptions of walkable supports (roads, sidewalks, paths, or trails; sidewalks on most streets), destinations (shops, stores, or markets; bus or transit stops; movies, libraries, or churches; places that help you relax, clear your mind, and reduce stress), and barriers to walking (traffic; crime; and animals). Age-adjusted prevalence estimates, prevalence differences, and 95% confidence intervals were calculated overall and by demographic characteristics.

Results: The reported prevalence of roads, sidewalks, paths, or trails for walking increased overall (85.3% in 2015 to 88.0% in 2020) and for many subgroups. Perceived places to walk to for relaxation, to clear your mind, and to reduce stress increased overall (72.1% in 2015 to 77.1% in 2020) and for all subgroups. Perceptions of crime as a barrier to walking decreased overall (12.5% in 2015 to 11.2% in 2020) and for some subgroups. From 2015 to 2020, the proportion of adults perceiving roads, sidewalks, paths, or trails; places to relax; and crime as a barrier to walking improved.

Conclusions: Continuing to monitor perceptions of the walking environment could contribute to progress toward national walking and walkability goals in the United States.

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Keywords

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INTRODUCTION

Physical activity is an important health behavior with immediate and long-term health benefits.[1] Promoting walking is a key public health strategy to improve population health through physical activity because it is an accessible way for most people to become active, is the most common form of physical activity, can serve many purposes, and interventions to promote walking can provide co-benefits for communities like improved economies and social cohesion.[2] Walkable communities that connect everyday destinations (eg, schools, libraries, grocery stores) with activity-friendly routes (eg, sidewalks) can help promote walking[2–4] but may also unintentionally expose people to barriers that affect their personal safety such as traffic and crime.[2] A report from the US Surgeon General to increase walking sets clear national goals and actionable strategies to improve access to safe and convenient places to walk.[2]

Since perceptions of walkability are associated with walking,[5] monitoring public perceptions of the walking environment is one way to measure progress toward national goals. National surveillance is a core function of public health and is used to quantify progress toward national population health objectives. For example, over four decades, public health surveillance has been used to monitor objectives in the US Department of Health and Human Services' Healthy People initiative—a national public health agenda to advance disease prevention and health promotion.[6] The National Health Interview Survey (NHIS) is used to monitor physical activity levels for current national health objectives in Healthy People 2030. The NHIS adds value for population health and physical activity promotion because it is the only system that monitors US adults' perceptions of the built environment for walking. This makes NHIS a key surveillance system for monitoring progress towards national goals for walkability, as outlined by the Surgeon General. The NHIS has administered built environment questions at 2 time points, first in 2015 and again in 2020. Results from 2015 revealed considerable differences in supports, destinations, and barriers across sociodemographic subgroups, suggesting inequitable access to safe and convenient places to walk.[7,8] The inclusion of these items in 2020 allows, for the first time, examination of changes in perceptions of the walking environment in a nationally representative sample, and comparisons of change across subgroups.

To date, no study at the national level has examined changes in adults' perceptions of the walking environment. The objective of this study was to examine changes in the prevalence of perceived supports, destinations, and barriers to walking near home from 2015 to 2020, among US adults overall and by demographic subgroups. Surveillance of national-level changes in perceptions of the walking environment can (1) help identify key populations for focused interventions to increase walking and walkability and (2) track progress toward national goals.

METHODS

Study Sample

NHIS is an annual survey of US households designed to be nationally representative of the civilian, noninstitutionalized population. Basic demographic information is collected about all household members, with more detailed demographic and health information collected from one randomly selected adult living in the household (18 years old). Data collection takes place continuously throughout the year, typically in respondents' homes, but follow-ups may be completed by telephone. The COVID-19 pandemic disrupted data collection in 2020. From late March through June, all interviews were conducted by telephone. From July through December, interviews were primarily by telephone, but in-person data collection was done in select locations.[9] The Sample Adult response rate was 55.2% in 2015.[10] Due to COVID-19, modifications were made to the 2020 sample in which a subset of 2019 Sample Adults were reinterviewed using the 2020 questionnaire. Therefore, the 2020 sample for this analysis uses data from both the 2020 sample and the reinterviewed 2019–2020 sample. The Sample Adult response rates are reported separately for the 2020 sample (48.9%) and the reinterviewed 2019–2020 longitudinal sample (29.6%).[9] A redesign of the survey in 2019 changed the weighting process and the content and structure of the questionnaire, including the length and placement of the questions under study. The Research Ethics Review Board of the National Center for Health Statistics approved all NHIS activities, and all participants provided informed consent.

From the initial total sample of 65,240 people (33,672 [2015] and 31,568 [2020]), 4,793 people were excluded, 337 (148 [2015] and 189 [2020]) due to missing demographic data, and 4,456 (2,713 [2015] and 1,743 [2020]) due to missing data on perceptions of the walking environment. The final analytic sample included 60,447 respondents (30,811 [2015] and 29,636 [2020]). We did not impute missing data because only 7.4% of the eligible population was missing data.[11]

Measures

Respondents were asked about their perceptions of the walking environment "in [their] neighborhood or near home" in 2015 and 2020. All questions began with "Where you live …". To assess presence of supports, respondents were asked, "… are there roads, sidewalks, paths or trails where you can walk?", and "… do most streets have sidewalks?" Questions about the presence of 4 destinations included "… are there shops, stores, or markets that you can walk to?", "… are there bus or transit stops that you can walk to?", "… are there places like movies, libraries, or churches that you can walk to?", and "… are there places that you can walk to that help you relax, clear your mind, and reduce stress?" In 2020, "churches" was changed to "places of worship." Finally, to assess presence of barriers, respondents were asked, "Where you live …" … does traffic make it unsafe for you to walk?", "… does crime make it unsafe for you to walk?", and "… do dogs or other animals make it unsafe for you to walk?" Each was coded as a yes/no binary variable.

Respondents were categorized on self-reported sex (male, female), age (18–24, 25–34, 35–44, 45–64, and 65 years), race/ethnicity (White, non-Hispanic; Black, non-Hispanic;

Hispanic; and other, non-Hispanic), and highest level of education completed (less than high school, high school graduate or equivalent, some college or associate's degree, and college graduate or higher).

Statistical Analysis

We calculated prevalence estimates and 95% confidence intervals (CI) overall and by selected characteristics in 2015 and 2020 for all perceptions of the near-home walking environment. Estimates were age standardized to the 2000 US standard population (except age-specific estimates). The prevalence difference (2020–2015) was calculated using linear contrasts and expressed as a percentage point change with 95% CI. When there were significant prevalence differences across more than one level of a characteristic, we did difference-in-difference testing with a Bonferroni correction to compare magnitude of change across levels. Analyses were conducted in SUDAAN (version 11.0.3; Research Triangle Institute, Research Triangle Park, NC) to account for weighting and complex survey design. Results were considered statistically significant at $P < 0.05$.

RESULTS

Overall, perceptions of roads, sidewalks, paths, or trails for near-home walking increased 2.7 percentage points (PP), from 85.3% in 2015 to 88.0% in 2020 (Figure 1). There were significant increases for: both sexes; those who graduated high school and attended or graduated college; and multiple levels of age, except adults aged 18–24 years (Table 1). By race/ethnicity, there was a significant increase among non-Hispanic White adults (3.4 PP). The magnitudes of change across levels of a given characteristic were not significantly different. Overall, there was no significant change in reporting sidewalks on most streets from 2015 to 2020.

Perceptions of places near home to walk to for relaxation increased 5.0 PP overall, from 72.1% in 2015 to 77.1% in 2020 (Figure 1), and across all subgroups (Table 2). The magnitudes of change across levels of a given characteristic were not significantly different. Overall, there was no significant change in perceptions of shops, stores, or markets to walk to near home from 2015 to 2020, and the only subgroup with a significant increase was non-Hispanic Black adults (3.7 PP). There was no significant change in perceived bus or transit stops to walk to near home from 2015 to 2020, overall or among subgroups. Finally, the reported prevalence of places like movies, libraries, or churches to walk to near home did not significantly change overall but significantly increased 3.2 PP among adults aged 35–44 years and 3.2 PP among respondents with at least a college degree.

There was a small but statistically significant decrease in perceived crime as a barrier to safe, near-home walking (1.4 PP), from 12.5% in 2015 to 11.2% in 2020 (Figure 1), and among some subgroups: males (1.1 PP), females (1.7 PP), adults 65 years or older (3.2 PP), non-Hispanic White (1.5 PP) and Black (4.2 PP) adults, and high school graduates (1.9 PP) (Table 3). There were no significant changes in reporting traffic as a barrier to safe near-home walking from 2015 to 2020, overall or among subgroups. Finally, there were no significant changes in perceptions of animals as a barrier to safe walking from 2015 to 2020 overall, but there were significant decreases among adults aged 25–34 years (2.3 PP)

and adults 65 years or older (1.7 PP). The magnitudes of change across levels of a given characteristic were not significantly different.

DISCUSSION

This study examined national-level changes in perceptions of the walking environment among US adults from 2015 to 2020. We found most perceptions of destinations, supports, and barriers to walking did not change, although the proportion of adults perceiving near-home roads, sidewalks, paths, or trails; places to relax; and crime making it unsafe to walk improved. Monitoring perceptions of the walking environment remains one way to track progress toward national goals for walking and walkable communities; such changes have the potential to get US adults more physically active, thereby improving population health and reducing the burden of chronic disease.

Previous studies of national-level perceptions of the built environment have largely been cross-sectional at 1 time point.[12,13] To our knowledge, this is the first such report examining changes in perceptions of the walking environment using cross-sectional nationally representative public health surveillance data at 2 time points. Because perceptions of the built environment may influence behavior, it is important to measure both objective and subjective environments.[5] There are national-level sources of objective built environment data that have yet to be examined by NHIS perceptions data. Often these sources are area-level measures of macro-scale environmental features (eg, housing density, intersection density). One such measure, the National Walkability Index, which provides a ranked score for block groups according to levels of walkability,[14] is related to self-reported walking from standardized surveys and 24-hour recalls.[15,16] If an objectively walkable environment is not perceived as such, decision makers and public health practitioners may consider communication or programmatic interventions to better align perceptions with reality.

Importantly, our second time point coincided with the first year of the COVID-19 pandemic. While the underlying causes of changes, or lack thereof, is beyond the present scope, some perceived changes may have been related to COVID-19. For example, social distancing and fear of the virus, particularly early in the pandemic, may have encouraged outdoor activities, and as a result, people may have become more aware of walkable neighborhood infrastructure.[17] On the other hand, nationally representative data collected prepandemic in fall 2019 and fall 2020, via a 24-hour time-use recall, reported no change in leisure physical activity.[18] The pandemic's effects on activity likely varied nationwide due to differences in mitigation factors that were implemented by counties, cities, and states.[19]

According to US national walkability goals, it should be easy for people to walk throughout their community.[2] Healthy People 2030 outlines data-driven, national objectives to create neighborhoods and environments that promote health and safety, including a goal to increase the proportion of people who walk or bike for transportation.[20] A systematic review from the Guide to Community Preventive Services quantifies evidence-based, community design approaches for achieving these goals through interventions to improve activity-friendly routes combined with interventions to increase everyday destinations.[4] Our results suggest increased perceptions of some, but not all, types of activity-friendly routes. Because the

walkability of neighborhoods is generally slow to change in preexisting neighborhoods—and our results measure perceptions—there may not have been an actual increase in roads, sidewalks, paths, or trails. For example, increased awareness of walking for health could enhance people's awareness of relevant infrastructure. Nonetheless, the perceived increase may be viewed as a positive change. Some federal initiatives, including provisions for multi-modal transportation infrastructure in the Bipartisan Infrastructure Law, may help continue this progress.

Routes that connect to destinations allow people to walk for transportation in their community. In this study, while most people report roads, sidewalks, paths, or trails for walking, and having relaxing places to walk to, it is concerning that fewer report utilitarian destinations such as shops, stores, or markets; bus or transit stops; and movies, libraries, or churches. This could indicate that routes do not connect to these types of destinations. Both the transportation and public health fields have established walkable destinations as an important correlate of walking and physical activity.[21–23] Communities with near-home walkable destinations can benefit residents by making essential services—such as medical care, pharmacies, and grocery stores—more accessible. Measuring perceptions of walkable routes and destinations can not only track progress toward national walkability goals, it can also inform local interventions, heightening awareness of already existing routes and destinations or highlighting the need for new active transportation infrastructure.

Green spaces can promote relaxation, reduce stress, and provide numerous health benefits such as improved mental health, cognitive health, and social connectedness.[24] We found increased perceptions of places to walk to for relaxation, to clear one's mind, or relieve stress—the only destination to increase overall. Green spaces such as parks, trails, and greenways can also increase the number of people engaging in physical activity when combined with other interventions to increase infrastructure use, such as public awareness campaigns.[25] Access to green space may also be an important health equity tool to reduce health disparities.[26] However, there are inequities in access to green spaces.[27,28] Conversely, our analysis suggests that increased perception of places to relax near one's home were shared throughout the population; there were no differences in the magnitude of change among subgroups. It is important that planners consider the potential for parks, trails, and greenways to increase property values[29,30] and prioritize strategies to prevent displacement.[31]

There was an increase in measured violent crime, specifically homicides, in 2020 compared to 2015,[32,33] yet we found crime was the only perceived barrier to neighborhood walking that improved among US adults. While not directly assessed in this study, an increase in violent homicides may not have affected people's perceptions if the increase occurred in areas already experiencing crime. Non-Hispanic Black adults reported the largest decrease in the perception of crime as a barrier to walking, which is surprising given racial/ethnic disparities in exposure to violence and violent crime.[34,35] However, this finding could be due to regression to the mean; compared to other racial/ethnic groups, Black adults had the highest prevalence (23.7%) of crime as a barrier to walking in 2015. Declines in perceived crime were also found among older adults and women, who reported crime relatively frequently in 2015 in our results. Future analyses may benefit from examining perceptions

of crime at the intersection of sex, age, and race/ethnicity.[36] Property crime reached a record low in 2020, which could also be driving these results.[32] Community violence prevention programs—which provide mentorship and counseling to residents and community-engaged environmental design strategies (eg, vacant lot remediation), and which strengthen social cohesion and a sense of community—can be effective at preventing violence.[37–39] Violence prevention strategies can also support national walkability goals in the Surgeon General's report and warrants further investigation.[2]

Pedestrian safety is a major problem in the US. From 2015 to 2020, pedestrian fatalities increased from 5,494 to 6,516, coinciding with an increase in risky driving (eg, extreme speeding, driving under the influence of drugs or alcohol, and distracted driving).[40–42] In our study, perceptions of traffic as a barrier to near-home walking did not change. This discrepancy between perceptions and reality may reflect the complexities in shaping perceptions. The objective increase may not have actually changed people's perceptions. Making progress toward the US Department of Transportation's National Roadway Safety Strategy, and its related vision of zero roadway fatalities, will also advance efforts toward national goals to (1) make communities safe and easily walkable and (2) increase the proportion of adults and adolescents using active transportation to reach destinations.[43]

Limitations

This analysis has several limitations. First, NHIS underwent a survey redesign in 2019 to update the weighting approach and selected questionnaire structures, including the length of the survey and the order of questions. This may have led to more participants exiting the interview before reaching the walking environment questions in 2015 compared to 2020. It is unclear if these changes impacted the variables under study.[44] Second, disruption in data collection due to COVID-19 reduced the response rate and may have biased the sample: lower socioeconomic status households were underrepresented in the 2nd quarter 2020 sample.[45] These and other potential sources of bias, including nonresponse bias, may be partially attenuated through weighting procedures. Third, data were not publicly available for 2015 to stratify by urban and rural areas due to privacy concerns. Pedestrian fatalities are more likely to occur in urban areas,[46] so future analyses may consider integrating this restricted-use data through the National Center for Health Statistics Research Data Center[47] to better understand perceptions of the walking environment with more geographic specificity. Future analyses could also access data at the Research Data Center to link these results to objective crime and pedestrian fatality data at the neighborhood level to better understand the discordant crime and traffic results. Finally, comparable data on mobility limitations or walking behavior is not available for 2015 and 2020. People who use mobility aids or have difficulty walking may have different perceptions of the environment than those who have no trouble walking. Similarly, people who walk for leisure, transportation, or any other reason may have different perceptions of the environment than those who do not walk.

The limitations above are noteworthy, however the strengths of this study should not be overlooked. This is the first study to use national-level data to examine changes in perceptions of the walking environment using a nationally representative public health surveillance system. Further, comparisons of changes across sociodemographic subgroups

can help uncover inequities in safe and accessible places for walking. These estimates allow the United States to track progress toward national goals for walking and walkability.

CONCLUSION

From 2015 to 2020, perceptions of destinations, supports, and barriers to walking were largely similar among US adults, although the proportion of adults perceiving near-home roads, sidewalks, paths, or trails; places to relax; and crime making it unsafe to walk improved somewhat. Continued monitoring of the walking environment, both perceived and objective, will help fill the research gap on walking and walkable communities. Analyzing NHIS perceptions data with other national measures of correlates of walking, such as objective macro-scale data, pedestrian fatality data, or objective crime data, can provide a more wholistic picture of the relationship between the built environment and walking, complementing past analyses of walkability[15,16] and weather.[48] Air quality data may also be considered in such analyses, although results to date examining the relationship between air pollution and physical activity are mixed.[49] Future studies may also consider evaluating how the quality of environmental supports and distance of walkable destinations impact perceptions of the walking environment. These data will help communities and the country track progress toward national goals and will enable needed research on the relationship between perceived and objective (or direct) measures of the environment. This research can allow more focused environmental interventions to improve conditions for walking and inform community efforts to increase walking and walkability in diverse communities nationwide. For example, decision makers and public health professionals may consider interventions that communicate to the public the benefits of walking, and the presence of walkable destinations, through strategies such as point-of-decision signage, wayfinding, or community-wide campaigns.[50] Cities may also consider adopting policies, such as Complete Streets, that create safe walking routes to destinations.[51] Such strategies can be tailored to address the perceptions of the walking environment within communities. National policies may also be considered that improve perceptions of the walking environment, including transport, parks, and land use policies.[52]

ACKNOWLEDGMENTS

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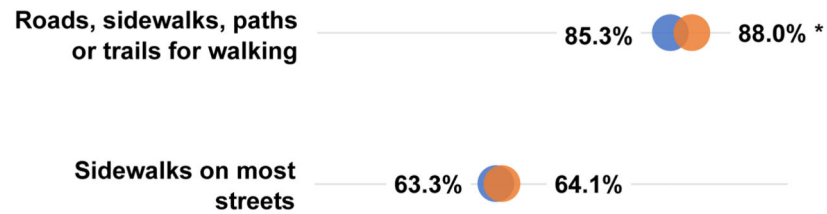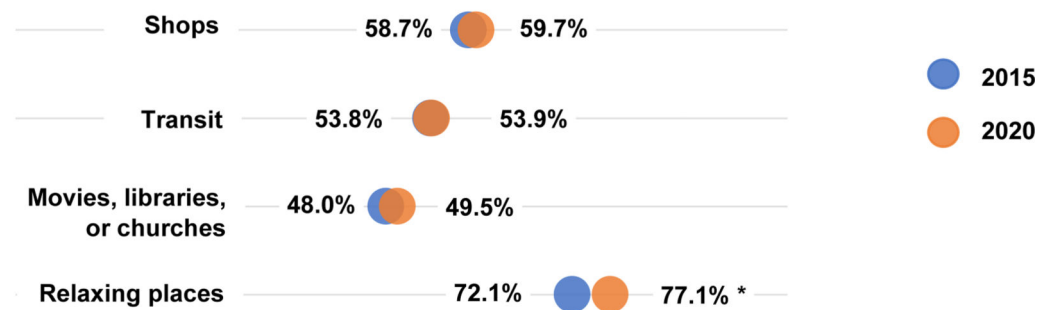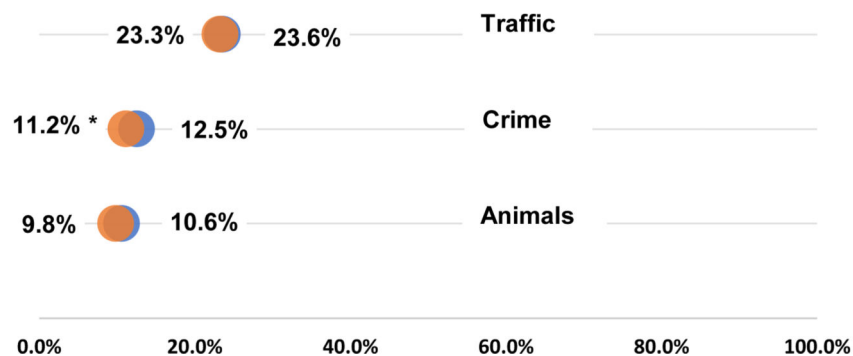
Figure 1.
Perceptions of near-home walking supports, destinations, and barriers among US adults—2015 (n = 30,811) and 2020 (n = 29,636). Asterisk (*) denotes a significant change from 2015 to 2020 (P < 0.05).

Table 1.

Prevalence of environmental supports for walking among US adults, by select characteristics, 2015 (n=30,811) and 2020 (n=29,636)

Characteristic	Roads, sidewalks, paths or trails			Sidewalks on most streets		
	%ᵃ (95% CI)			%ᵃ (95% CI)		
	2015	2020	PP	2015	2020	PP
Total	85.3 (84.4, 86.1)	88.0 (87.1, 88.8)	2.7*	63.3 (62.1, 64.5)	64.1 (62.6, 65.6)	0.8
Sex						
Male	86.1 (85.0, 87.1)	88.7 (87.6, 89.6)	2.6*	64.1 (62.6, 65.5)	64.0 (62.3, 65.7)	0.0
Female	84.5 (83.4, 85.5)	87.3 (86.3, 88.3)	2.8*	62.5 (61.0, 63.9)	64.2 (62.5, 65.7)	1.7
Age, years						
18–24	87.4 (85.3, 89.3)	89.2 (86.8, 91.2)	1.8	72.4 (69.7, 74.9)	70.1 (66.9, 73.1)	–2.3
25–34	87.4 (86.1, 88.6)	90.2 (88.9, 91.5)	2.9*	71.3 (69.4, 73.1)	71.2 (69.0, 73.2)	–0.1
35–44	87.1 (85.7, 88.4)	89.1 (87.8, 90.4)	2.0*	66.5 (64.4, 68.5)	67.4 (65.3, 69.5)	0.9
45–64	83.5 (82.2, 84.8)	87.3 (86.1, 88.4)	3.8*	57.5 (55.7, 59.4)	60.6 (58.7, 62.4)	3.0*
65+	82.1 (80.5, 83.6)	84.2 (82.8, 85.6)	2.1*	53.9 (51.8, 56.0)	53.0 (52.0, 55.8)	0.0
Race/ethnicity						
Black, non-Hispanic	85.1 (83.1, 86.9)	87.2 (85.2, 89.1)	2.1	73.0 (70.4, 75.4)	72.6 (69.4, 75.6)	–0.3
Hispanic	87.0 (85.3, 88.5)	88.3 (85.8, 90.5)	1.3	79.5 (77.6, 81.3)	79.5 (76.3, 82.3)	0.0
White, non-Hispanic	84.2 (83.0, 85.3)	87.6 (86.5, 88.6)	3.4*	56.0 (54.4, 57.6)	56.4 (54.6, 58.1)	0.3
Other, non-Hispanic	93.0 (91.4, 94.4)	91.9 (89.9, 93.6)	–1.1	81.2 (77.6, 84.4)	80.9 (77.4, 84.0)	–0.3
Education level						
Less than high school	80.8 (78.8, 82.6)	82.4 (79.7, 84.8)	1.6	63.2 (60.7, 65.6)	62.5 (59.2, 65.6)	–0.7
High school graduate	81.9 (80.3, 83.3)	85.4 (84.0, 86.7)	3.6*	58.6 (56.8, 60.4)	58.7 (56.5, 60.8)	0.1
Some college	84.9 (83.6, 86.0)	88.5 (87.5, 89.5)	3.7*	60.9 (59.1, 62.7)	62.9 (61.1, 64.7)	2.0
College graduate or higher	90.4 (89.4, 91.4)	92.0 (91.1, 92.9)	1.6*	68.9 (67.0, 70.7)	71.1 (69.3, 72.8)	2.2

Abbreviations: CI, confidence interval; PP, percentage point change (2020–2015).

ᵃWeighted percentages, age-standardized to the 2000 US standard population except age-specific estimates.

*
Significant change from 2015 to 2020 ($P < 0.05$)

Table 2.

Prevalence of walkable destinations among US adults, by select characteristics, 2015 (n=30,811) and 2020 (n=29,636)

Characteristic	Shops, stores, or markets			Bus or transit stops			Movies, libraries, or churches			Relax, clear one's mind, or relieve stress		
	%[a] (95% CI)			%[a] (95% CI)			%[a] (95% CI)			%[a] (95% CI)		
	2015	2020	PP	2015	2020	PP	2015	2020	PP	2015	2020	PP
Total	58.7 (57.5, 59.9)	59.7 (58.4, 61.0)	1.0	53.8 (52.4, 55.1)	53.9 (52.2, 55.6)	0.1	48.0 (46.8, 49.2)	49.5 (48.1, 50.8)	1.5	72.1 (71.1, 73.1)	77.1 (76.1, 78.0)	5.0 *
Sex												
Male	60.3 (58.8, 61.8)	61.4 (59.9, 63.0)	1.1	55.1 (53.5, 56.8)	54.3 (52.4, 56.1)	−0.9	49.1 (47.7, 50.6)	50.7 (49.1, 52.3)	1.6	74.1 (72.8, 75.3)	78.9 (77.7, 80.0)	4.7 *
Female	57.1 (55.7, 58.4)	58.0 (56.5, 59.5)	0.9	52.5 (51.0, 54.0)	53.6 (51.8, 55.4)	1.1	46.9 (45.5, 48.3)	48.3 (46.8, 49.7)	1.4	70.3 (69.0, 71.5)	75.4 (74.2, 76.6)	5.1 *
Age, years												
18–24	71.3 (68.5, 73.8)	70.5 (67.6, 73.2)	−0.8	62.7 (59.6, 65.6)	62.3 (59.0, 65.6)	−0.3	58.6 (55.7, 61.5)	57.0 (53.6, 60.3)	−1.6	75.5 (72.9, 77.9)	81.2 (78.5, 83.6)	5.7 *
25–34	67.9 (65.7, 69.9)	69.4 (67.3, 71.4)	1.5	62.1 (59.7, 64.4)	63.2 (60.9, 65.6)	1.2	55.7 (53.5, 58.0)	57.3 (55.0, 59.5)	1.5	76.4 (74.7, 78.0)	80.5 (78.7, 82.2)	4.1 *
35–44	60.5 (58.3, 62.5)	61.3 (59.2, 63.3)	0.8	56.0 (53.7, 58.3)	54.4 (52.1, 56.7)	−1.6	49.7 (47.7, 51.7)	52.9 (50.7, 55.0)	3.2 *	74.7 (72.8, 76.6)	78.8 (77.1, 80.3)	4.1 *
45–64	54.3 (52.5, 56.0)	56.3 (54.7, 58.0)	2.1	49.6 (48.0, 51.3)	51.0 (49.0, 53.1)	1.4	44.8 (43.3, 46.3)	46.6 (44.9, 48.3)	1.8	71.3 (70.0, 72.6)	76.8 (75.4, 78.0)	5.5 *
65+	44.8 (42.9, 46.6)	44.9 (43.2, 46.6)	0.1	42.6 (40.8, 44.6)	42.0 (40.1, 43.9)	−0.7	35.1 (33.5, 36.8)	36.1 (34.5, 37.7)	1.0	63.2 (61.5, 64.9)	68.7 (67.3, 70.1)	5.5 *
Race/ethnicity												
Black, non-Hispanic	67.9 (65.6, 70.2)	71.6 (68.8, 74.3)	3.7 *	67.9 (65.4, 70.2)	65.7 (62.0, 69.2)	−2.2	56.4 (53.8, 58.9)	57.6 (54.7, 60.5)	1.3	66.7 (64.3, 69.0)	71.8 (69.2, 74.2)	5.1 *
Hispanic	72.9 (71.0, 74.8)	72.4 (69.5, 75.2)	−0.5	72.4 (70.0, 74.7)	71.1 (67.4, 74.6)	−1.3	55.3 (53.3, 57.3)	57.6 (54.6, 60.4)	2.2	73.5 (71.7, 75.2)	78.5 (75.8, 81.0)	5.0 *
White, non-Hispanic	52.9 (51.3, 54.4)	52.9 (51.4, 54.5)	0.1	45.3 (43.6, 47.0)	45.4 (43.5, 47.2)	0.1	44.8 (43.2, 46.4)	46.3 (44.8, 47.9)	1.6	72.6 (71.3, 73.9)	77.7 (76.5, 78.7)	5.0 *
Other, non-Hispanic	65.8 (62.9, 68.6)	68.3 (65.2, 71.2)	2.5	67.1 (64.1, 69.9)	66.2 (62.4, 69.8)	−0.8	50.5 (47.5, 53.5)	49.1 (45.7, 52.6)	−1.3	74.1 (71.1, 76.9)	78.8 (76.2, 81.2)	4.7 *
Education level												
Less than high school	63.1 (60.8, 65.3)	63.5 (60.0, 66.9)	0.4	58.5 (56.2, 60.7)	54.5 (50.6, 58.3)	−4.0	49.6 (47.3, 52.0)	49.9 (46.4, 53.5)	0.3	66.6 (64.6, 68.5)	71.7 (68.6, 74.7)	5.1 *

Characteristic	Shops, stores, or markets %a (95% CI)			Bus or transit stops %a (95% CI)			Movies, libraries, or churches %a (95% CI)			Relax, clear one's mind, or relieve stress %a (95% CI)		
	2015	2020	PP	2015	2020	PP	2015	2020	PP	2015	2020	PP
High school graduate	57.0 (55.1, 58.9)	57.9 (56.0, 59.7)	0.9	49.4 (47.4, 51.3)	50.5 (48.2, 52.7)	1.1	46.1 (44.2, 48.1)	47.1 (45.2, 48.9)	0.9	66.8 (65.0, 68.6)	73.6 (72.0, 75.1)	6.8 *
Some college	58.3 (56.7, 59.9)	59.2 (57.5, 60.8)	0.9	52.4 (50.6, 54.3)	52.7 (50.8, 54.7)	0.3	48.1 (46.4, 49.8)	48.9 (47.1, 50.7)	0.8	71.8 (70.2, 73.4)	76.9 (75.5, 78.3)	5.1 *
College graduate or higher	59.3 (57.3, 61.3)	61.0 (59.3, 62.7)	1.7	57.2 (55.1, 59.2)	58.9 (56.9, 60.8)	1.7	49.3 (47.4, 51.3)	52.5 (50.9, 54.1)	3.2 *	78.5 (77.0, 79.9)	82.8 (81.6, 83.8)	4.2 *

Abbreviations: CI, confidence interval; PP, percentage point change (2020–2015).

[a] Weighted percentages, age-standardized to the 2000 US standard population except age-specific estimates.

*
Significant change from 2015 to 2020 ($P < 0.05$).

Table 3.

Prevalence of barriers to walking among US adults, by select characteristics, 2015 (n=30,811) and 2020 (n=29,636)

Characteristic	Traffic			Crime			Animals		
	%[a] (95% CI)			%[a] (95% CI)			%[a] (95% CI)		
	2015	2020	PP	2015	2020	PP	2015	2020	PP
Total	23.6 (22.7, 24.4)	23.3 (22.4, 24.1)	−0.3	12.5 (12.0, 13.1)	11.2 (10.6, 11.8)	−1.4[*]	10.6 (10.0, 11.2)	9.8 (9.2, 10.5)	−0.8
Sex									
Male	21.7 (20.6, 22.9)	21.8 (20.7, 22.8)	0.0	9.9 (9.2, 10.6)	8.8 (8.1, 9.6)	−1.1[*]	8.2 (7.6, 8.9)	7.7 (7.0, 8.4)	−0.5
Female	25.3 (24.3, 26.3)	24.7 (23.6, 25.7)	−0.6	15.1 (14.2, 15.9)	13.4 (12.6, 14.3)	−1.7[*]	12.8 (12.1, 13.6)	11.8 (10.9, 12.8)	−1.0
Age, years									
18–24	20.1 (18.2, 22.1)	20.5 (18.2, 23.1)	0.4	15.1 (13.3, 17.0)	13.1 (11.2, 15.2)	−2.0	10.1 (8.5, 12.0)	8.4 (6.6, 10.6)	−1.7
25–34	23.7 (22.0, 25.4)	23.1 (21.4, 24.9)	−0.5	13.8 (12.6, 15.0)	12.9 (11.5, 14.4)	−0.9	10.7 (9.6, 11.9)	8.4 (7.4, 9.6)	−2.3[*]
35–44	24.3 (22.7, 26.0)	23.6 (21.9, 25.3)	−0.8	12.3 (11.0, 13.7)	11.4 (10.2, 12.7)	−0.9	10.1 (9.1, 11.3)	11.1 (9.8, 12.5)	0.9
45–64	24.1 (22.9, 25.4)	24.2 (23.0, 25.5)	0.1	11.5 (10.7, 12.4)	10.9 (10.0, 11.8)	−0.6	11.1 (10.2, 12.0)	11.0 (10.1, 11.9)	−0.1
65+	24.1 (22.6, 25.6)	23.4 (22.1, 24.7)	−0.7	11.4 (10.4, 12.5)	8.2 (7.4, 9.0)	−3.2[*]	10.6 (9.7, 11.6)	8.9 (8.0, 9.8)	−1.7[*]
Race/ethnicity									
Black, non-Hispanic	24.5 (22.7, 26.4)	25.2 (23.1, 27.5)	0.7	23.6 (21.8, 25.5)	19.4 (17.4, 21.7)	−4.2[*]	18.7 (17.1, 20.4)	16.5 (14.7, 18.4)	−2.2
Hispanic	24.3 (22.7, 26.0)	23.5 (21.6, 25.6)	−0.8	19.5 (18.0, 21.0)	18.7 (17.0, 20.6)	−0.8	14.2 (12.9, 15.6)	14.0 (12.1, 16.2)	−0.2
White, non-Hispanic	23.7 (22.5, 24.8)	22.9 (21.9, 23.9)	−0.8	8.7 (8.1, 9.3)	7.1 (6.5, 7.7)	−1.5[*]	8.2 (7.6, 8.8)	7.3 (6.8, 7.9)	−0.8
Other, non-Hispanic	20.6 (18.3, 23.1)	22.2 (19.7, 24.9)	1.6	14.2 (12.1, 16.6)	13.7 (11.8, 15.8)	−0.5	11.1 (8.7, 14.1)	10.1 (7.8, 12.9)	−1.0
Education level									
Less than high school	29.2 (27.0, 31.4)	28.9 (26.3, 31.6)	−0.3	21.2 (19.4, 23.2)	20.1 (17.7, 22.9)	−1.1	16.9 (15.1, 19.0)	15.7 (13.5, 18.1)	−1.2
High school graduate	25.2 (23.6, 26.8)	26.0 (24.5, 27.5)	0.8	14.6 (13.6, 15.8)	12.7 (11.6, 14.0)	−1.9[*]	11.9 (10.8, 13.0)	10.8 (9.7, 12.0)	−1.1
Some college	24.4 (23.1, 25.7)	23.9 (22.7, 25.2)	−0.4	12.3 (11.3, 13.3)	10.9 (10.0, 12.0)	−1.3	11.0 (10.1, 11.9)	10.3 (9.4, 11.3)	−0.7
College graduate or higher	19.4 (18.0, 20.8)	17.7 (16.6, 18.8)	−1.7	7.8 (7.0, 8.7)	7.2 (6.4, 8.1)	−0.6	6.9 (6.2, 7.6)	6.4 (5.7, 7.2)	−0.4

Abbreviations: CI, confidence interval; PP, percentage point change (2020–2015).

[a] Weighted percentages, age-standardized to the 2000 US standard population except age-specific estimates.

[*] Significant change from 2015 to 2020 ($P < 0.05$).