ACSP
Connecting educators, researchers and students

Journal of Planning Education and Research
1–15

DOI: 10.1177/0739456X251356247
journals.sagepub.com/home/jpe
Sage

Comprehensive Planning for Healthy Eating and Active Living: A Systematic Assessment from Wisconsin

Lisa M. Charron[1], Hilary R. Joyner[2], James A. LaGro Jr.[2], Nicole Lehr[3], Daniel E. Villegas[4], Thor Jeppson[5], Sebastian Gomez Parra[6], Ronald Gangnon[2], and Sara M. Lindberg[2]

Abstract

Comprehensive plans can promote healthy eating and active living (HEAL). Using a validated scorecard, we assessed HEAL-promoting components in 116 Wisconsin comprehensive plans. Few plans explicitly address healthy food access or public health. Higher HEAL scores are positively associated with population size, recent plan adoption, a consultant plan author, Democratic voting, and whether "housing and transit" is a designated local health priority. Our findings show that, in Wisconsin, municipal comprehensive plans promote HEAL in a limited and aspirational way, often without actionable policies. Strategies to improve HEAL-oriented planning practice include partnering with public health departments and additional training for planners.

Keywords

public health, comprehensive plan, content analysis, Wisconsin, healthy eating, active living

Introduction

In the United States, the urban planning and public health professions emerged in the early 20th century to address high rates of disease and death in industrial cities (Corburn 2009). In the ensuing decades, urban planning became largely divorced from its public health mission—that is, until several decades ago (Corburn 2009; Hu and Roberts 2020). Since the 1980s, addressing the social determinants of health—or the conditions in which people live, work, play, grow, and age and the policies, systems, and environments that determine those conditions—has become a shared objective of the urban planning and public health fields (CDC 2020; Marmot et al. 2008).

The European Office of the World Health Organization (WHO) supports a global network of "Healthy Cities" that incorporate health-promoting policies, processes, and infrastructure into local governance (Leeuw and Simos 2017). In the United States, the Institute of Medicine, the Centers for Disease Control and Prevention (CDC), and the American Public Health Association promote interdisciplinary efforts that integrate land use planning and public health (Corburn 2004). On the planning side, the American Planning Association's (APA) influential Sustaining Places Initiative identifies "Healthy Community" as one of the nine principles of good planning practice (Godschalk and Anderson 2012). The APA maintains a Planning and Community Health Center, which has published countless toolkits and technical resources to help planners incorporate public-health-related goals, objectives, and strategies into their practice. Public health has been solidly reinstated as a priority area for the urban planning profession. But what do we know about the extent to which planners incorporate health into their planning practice?

This article reports on a study that evaluated the extent to which Wisconsin municipalities incorporate two important aspects of health into their local comprehensive plans—healthy eating and active living (HEAL). Our objectives were to (a) determine the state of comprehensive planning for HEAL in Wisconsin, including areas of strength and opportunities for improvement and (b) investigate factors that are associated with variation in comprehensive planning for HEAL in Wisconsin.

Initial submission, February 2024; revised submissions, November 2024 and January 2025; final acceptance, May 2025

[1]Independent Researcher, Madison, WI, USA
[2]University of Wisconsin–Madison, Madison, WI, USA
[3]Michigan State University, East Lansing, MI, USA
[4]City of Madison Metro Transit, Madison, WI, USA
[5]City of Monona, Monona, WI, USA
[6]West Virginia University, Morgantown, WV, USA

Corresponding Author:
Lisa M. Charron, 1317 E Wilson St, Madison, WI 53703, USA.
Email: lisamcharron@gmail.com

HEAL—Key Targets for Public Health

HEAL includes two key factors that form the basis of good human health. HEAL is a primary objective in preventing chronic diseases, which are the leading cause of death and disability in the United States and worldwide (O'Toole et al. 2022; WHO 2013). HEAL has been linked to a lower risk of heart disease, stroke, type 2 diabetes, dementia, and many types of cancer (USDA 2020; USDHHS 2018b). Outside of chronic disease prevention, HEAL also reduces the risk of depression and anxiety, improves cognitive function and sleep quality, supports bone health, helps older adults remain independent longer, and lowers the risk of infectious diseases (Chastin et al. 2021; Godos et al. 2021; Klimova, Dziuba and Cierniak-Emerych 2020; Li et al. 2017; Solomons 2007; USDA 2020; USDHHS 2018b). Most of the U.S. population does not meet guidelines for HEAL, despite the known health benefits. Only 26 percent of men, 19 percent of women, and 20 percent of adolescents in the United States meet the CDC's recommendations for physical activity (USDHHS 2018a). Less than 15 percent of U.S. adults meet recommendations for fruit and vegetable consumption, and only about 2 percent meet recommendations for whole grains (USDA and USDHHS 2020).

The Built Environment, Urban Planning, and HEAL

Socioecological models of HEAL emphasize that individual-, social-, environmental-, and policy-level factors interact to produce HEAL behaviors (Sallis et al. 2006; Story et al. 2008). Changes to the built environment—and policies that support those changes—have been highlighted within these models for their potential to influence health behaviors on a community-wide (instead of individual) scale.

Giles-Corti et al. (2016) have developed an overarching framework for how urban planning policies can influence health, including HEAL behaviors. This model (Figure 1) shows potential pathways from urban planning policies to the "five Ds" of urban design and "three Ds" of regional planning that influence daily living outcomes like transportation mode share and access to food, employment, and services. It further shows how those daily living outcomes are connected to risk exposures (including HEAL), and then to health and liveability outcomes. This model shows not only how built environment interventions can impact HEAL, but also how those interventions are part of a larger system that impacts other important health outcomes like road trauma, respiratory disease, and mental illness.

Few studies have empirically tested pathways linking urban planning policies with HEAL behaviors and related health outcomes. Aytur et al. found that comprehensive plans from North Carolina that included more active-living components were associated with more leisure and transportation physical activity (2007). Another study of over 4,000 jurisdictions in forty-eight states found that active-living zoning measures were associated with increased rates of active travel to work, public transportation use, and leisure-time physical activity (Chriqui et al. 2016a, 2016b; Thrun, Leider, and Chriqui 2016), as well as reduced cancer incidence (Nicholson, Leider, and Chriqui 2017).

Unlike urban planning policies, characteristics of the built environment reflected in the "urban design" category of Figure 1 have been studied at length for their associations with HEAL behaviors, especially physical activity. Systematic research reviews find consistently positive associations between physical activity and mixed land use, infrastructure for walking and biking, residential and destination density, parks and recreation resources, overall walkability, pedestrian-oriented streetscape design, street connectivity, and public transit availability (Guide to Community Preventive Services 2016; Kärmeniemi et al. 2018; Smith et al. 2017; Stearns et al. 2023).

Evidence linking the built environment and healthy diets is more mixed, potentially because the scholarly literature is newer than that linking the built environment and active living. However, there is emerging evidence for an association between a healthy diet and the accessibility of farmers' markets, community gardens and other urban agriculture, supermarkets, and healthy food retail options, as well as a low concentration of convenience stores and fast food outlets (Bowen, Barrington, and Beresford 2015; Garcia et al. 2018; Hume et al. 2022; Rahmanian et al. 2014). In addition, a recent qualitative research review found that neighborhood walkability, neighborhood safety near food stores, and transportation options might be determinants of a healthy diet (Pitt et al. 2017).

Improving the built environment in previously underserved neighborhoods has been proposed as a way to address racial and income-based disparities in HEAL behaviors and related health outcomes (S. Wilson, Hutson, and Mujahid 2008). However, it should be noted that HEAL-oriented urban planning also has the potential to worsen health disparities. On the one hand, HEAL-oriented built environment improvements have historically been concentrated in already-privileged neighborhoods, thus exacerbating existing disparities in access to HEAL resources (S. Wilson, Hutson, and Mujahid 2008). On the other hand, the addition of HEAL-oriented infrastructure to previously disadvantaged neighborhoods can lead to increased property values, gentrification, and displacement of community residents, which may lead to worse health outcomes via economic and stress pathways (Macmillan et al. 2020; Serrano et al. 2023).

Comprehensive Plans to Promote HEAL

In many communities across the United States, planners—along with elected officials, community members, and other stakeholders—write comprehensive plans to guide the development of their local built, social, and economic environments.

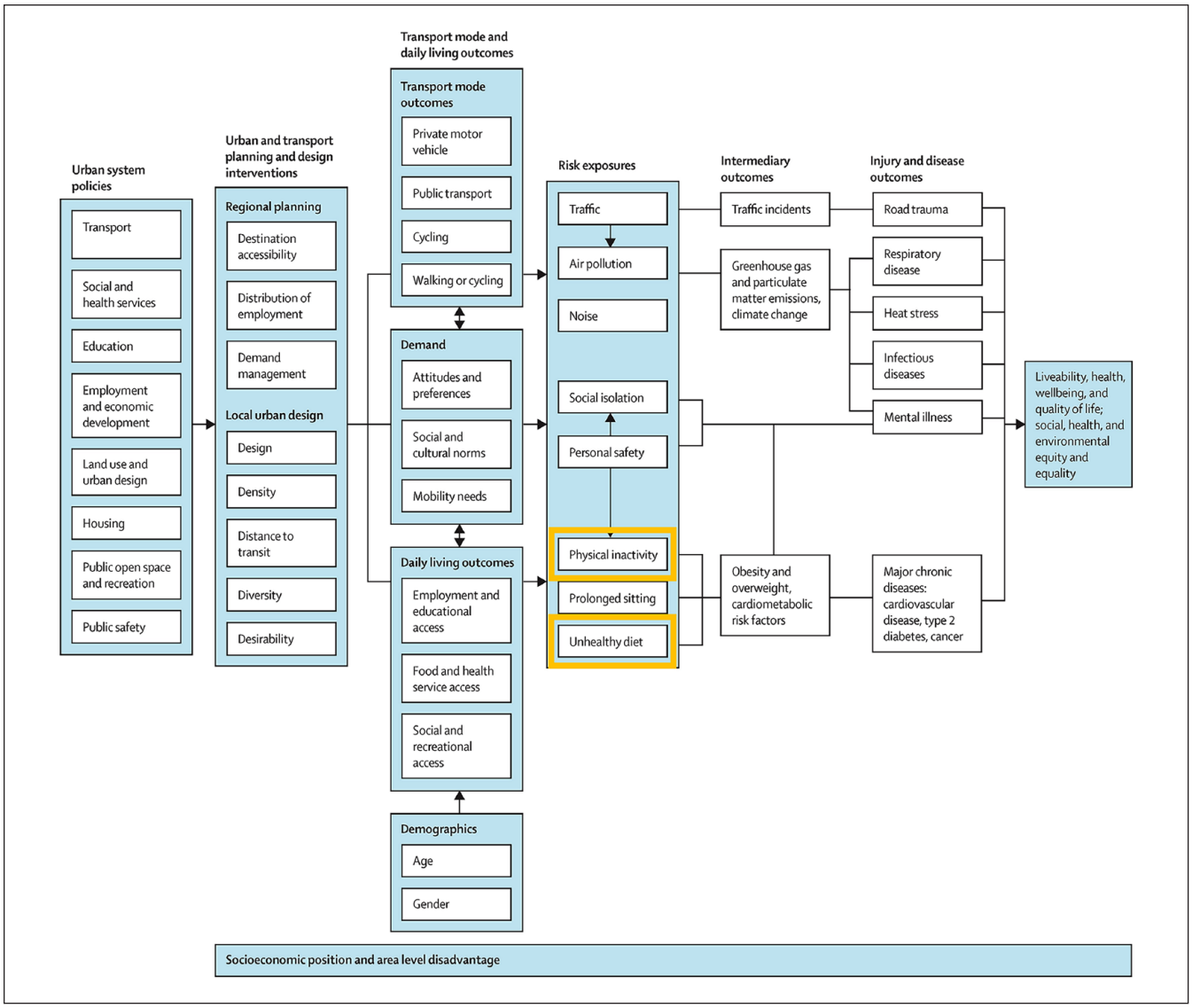

Figure 1. Giles-Corti et al. (2016) framework for how urban planning policies influence health and wellbeing, with HEAL behaviors highlighted. Reproduced with permission.

Comprehensive plans are potentially powerful policy levers to influence the social determinants of health, including the determinants of HEAL behaviors, partially because they cover all of the "urban system policies" in Figure 1 (Ricklin, Klein, and Musiol 2012; Rojas-Rueda and Morales-Zamora 2023; Shah and Wong 2020). Comprehensive plans are holistic policy documents that bridge siloed departmental perspectives and coordinate policies, programs, and projects across organizational divides (Godschalk and Anderson 2012). They have a long planning timeframe, usually ten, twenty, or thirty years, and they integrate long-term goals with shorter-term actions (Godschalk and Anderson 2012). They also usually entail a lengthy public participation process that offers an opportunity for community members, planners, government officials, and other stakeholders to learn from each other, build shared knowledge, develop new networks and collaborations, resolve conflicts, and create consensus around key issues (Godschalk, Brody, and Burby 2003; Innes and Booher 2010).

Comprehensive plans articulate the community's *vision* for future development and contain a *blueprint* of policies, programs, and projects to achieve that vision (Lyles, Berke, and Smith 2016; Rudolf and Grădinaru 2019). In many states, local land use regulations such as zoning and subdivision codes must be consistent with an adopted comprehensive plan; in many other states, consistency is encouraged by state statute (Charron et al. 2023). Even outside of the specific actions recommended in a comprehensive plan, the community vision contained therein serves as a guide for local government decisions (Godschalk and Anderson 2012; Lyles, Berke and Smith 2016).

Despite the potential of comprehensive plans to influence the built environment and create community-level impacts, there remains little research evaluating the extent to which they address the social determinants of health or HEAL promotion.

In an effort to close this gap, the APA initiated a multiphase study in 2010 to identify local-level comprehensive planning responses to health concerns (Ricklin, Klein, and Musiol 2012). That project included a nationwide survey of planning departments and a systematic assessment of fourteen comprehensive plans and four sustainability plans for health goals, objectives, policies, and recommendations (Hodgson 2011; Ricklin, Klein, and Musiol 2012). While the study provided initial evidence on the state of the practice for incorporating health into comprehensive plans, the sample size was small and was selected from survey respondents who had already said that their plan addressed health in some way.

More recently, researchers at the APA reviewed fifteen local comprehensive plans to glean model policy language regarding health equity principles (Shah and Wong 2020). In addition, Maiden et al. (2017) developed and validated a Healthy Living and Active Design Scorecard for Comprehensive Plans. Providing baseline estimates of comprehensive planning for health was the goal of neither of these studies, though, so descriptive statistics about the extent to which health was addressed in plans were not reported. Other studies have assessed the extent to which comprehensive plans contain policies supporting active living, but these were survey-based studies that collected information on a few active-living measures (e.g., complete streets, mixed land use) rather than a host of integrated HEAL-supportive goals and policies (Aytur et al. 2007, 2008; Evenson et al. 2011; Peterson et al. 2018).

Comprehensive Planning in Wisconsin

Local comprehensive planning in the state of Wisconsin is required for any community that uses land use policies and regulations. In accordance with state statute, zoning, subdivision, and official mapping ordinances must be consistent with an officially adopted comprehensive plan (Wis. Stat. § 66.1001 (2m)). Comprehensive plans must be developed with public participation and must include nine Elements: Issues and Opportunities; Housing; Transportation; Utilities and Community Facilities; Agricultural, Natural, and Cultural Resources; Economic Development; Intergovernmental Cooperation; Land Use; and Implementation. The statute also encourages smart growth principles, so much so that it is referred to colloquially as the "Smart Growth Law" (Edwards and Haines 2007).[1] Smart growth is a key framework for promoting livable, healthy, active communities and Wisconsin's "Smart Growth Law" has the potential to facilitate HEAL-oriented development (Durand et al. 2011; Schilling and Keyes 2008).

Methods

We include a brief overview of our methodology here with a more detailed description in Supplementary Information A.

Study Design and Coding Protocol

Our target population was all 209 urban and suburban municipalities (i.e., towns, villages, cities) in Wisconsin. Our sample excluded rural municipalities because the scorecard we used (see below) was not appropriate for assessing small, rural communities in Wisconsin. We stratified our target population by urban or suburban status and by the state's nine regional planning commission areas. Then, we randomly sampled at least 43 percent of municipalities within each suburban stratum, ensuring that at least two municipalities in each stratum were included.[2] Due to the small number of urban municipalities in Wisconsin, we included all of them in our analysis. Our sample includes thirty-five urban municipalities and eighty-one suburban municipalities, for a total sample size of 116. We downloaded adopted comprehensive plans in 2017 to 2018 from municipal, county planning, or regional planning commission websites and contacted the planning department (or other relevant agency) when necessary to obtain up-to-date plans.

We used the Healthy Living and Active Design Scorecard for Comprehensive Plans (from now, "Scorecard") to evaluate our sample (Kaplan et al. 2016). The Scorecard, developed by Cedar Creek Sustainable Planning Services, is based on an extensive literature review, key informant interviews, and review by a cross-disciplinary committee (Maiden et al. 2017). It includes fifty items in six sections (see Table 1), covering a "gold standard" set of goals, objectives, policies, and recommendations for comprehensive plans to contribute to HEAL. Supplementary Information B contains a full list of items in the Scorecard.

For each item in the Scorecard, a comprehensive plan can score a 0, 1, or 2. The plan scores a 0 if it does not contain any language about the item; a 1 if it contains language about the item, but it is weak, vague, includes loopholes, or is included merely as an aspiration; and a 2 if it contains language about the item with specific plans or strategies, action-oriented language, and apparent commitment to enacting the item (Kaplan et al. 2016). Based on the Scorecard's guidance, we calculated section and overall comprehensiveness and strength scores (see Table 2).

The coding team comprised two master's-level students in the field of urban and regional planning, two undergraduate students in the field of geography, and a doctoral student with master's degrees in public health and urban and regional planning. We utilized independent coding after a period of training and inter-rater reliability testing using intraclass correlation coefficients. During training and independent coding, the team met weekly to discuss scoring ambiguities. Any clarifications to scoring methodology were tracked in a

Table 1. Sections in the Healthy Living and Active Design Scorecard for Comprehensive Plans.

Section title[a]	# of items	Summary
Vision & Strategy	6	Explicit connection between planning, the built environment, land use, and HEAL-related chronic disease outcomes
Active Transportation	13	Goals for increasing active transportation mode share; strategies for making active transportation safer, more comfortable, more efficient, and more equitable
Healthy Food Access	8	Goals and strategies for promoting the production and consumption of healthy foods
Parks & Recreation	5	Goals and strategies to ensure that everyone in the community has access to quality parks, open spaces, and recreational opportunities
Health Care Access	3	Goals and strategies to ensure access to health care; goals and strategies for aging in place
Community Design	15	Urban design strategies for promoting active living, from streetscape to land use scale

Source: Kaplan et al. (2016).
[a]Section titles have been revised to align with traditional planning domains.

Table 2. Equations and Sample Calculations for Comprehensiveness and Strength Scores.

Calculated score	Equation	Calculated scores for hypothetical section with item scores 0, 1, 1, 0, 2
Comprehensiveness score	$\frac{\#\ of\ items\ scored\ 1\ or\ 2}{Total\ \#\ of\ items\ in\ section} * 100$	$\frac{3}{5} * 100 = 60\%$
Strength score	$\frac{Sum\ of\ scores}{Total\ possible\ score\ for\ section} * 100$	$\frac{4}{10} * 100 = 40\%$

Coding Guide, which is available in the project repository (Charron 2025).

Data Analysis

We used sampling weights and the finite population correction to estimate statewide mean comprehensiveness and strength scores for each section of the Scorecard and overall. All descriptive analysis was conducted using StataSE 16.1 (StataCorp 2019). We then used a series of weighted least squares, univariate, linear regression models with sampling weights and the finite population correction to explore factors associated with variation in plan scores. Our independent variables were drawn from comprehensive planning theory and evaluation literature and included planning-related factors, municipal sociodemographic and political factors, and local health priority areas (Table 3; Supplementary Information C for precedents and theoretical justification for including each independent variable). All regression analyses were conducted using StataSE 17.0 (StataCorp 2021). We assessed model fit, the presence of potential outliers, and the normalcy and homoscedasticity of residuals for each univariate model, with no violation to regression assumptions. In our discussion of results, we use *p*-values of .05 as a cut off to determine statistically significant relationships.

We also ran each of the regression models with the natural logarithm of municipal population as a covariate because (a) the population variable was overwhelmingly the strongest correlate of comprehensiveness and strength scores across sections, and (b) many of the independent variables were correlated with population.

Results and Discussion

All but two of the 116 municipalities in the sample had adopted comprehensive plans (98%).[3] The municipalities with missing plans were listed as partners in multijurisdictional comprehensive plans; however, they had not officially adopted the multijurisdictional plans as their municipal-level comprehensive plans.

The State of Comprehensive Planning for HEAL in Wisconsin

Comprehensiveness scores in Table 4 represent the statewide mean percentage of items that scored a 1 or 2 in each section while strength scores represent the statewide mean percentage of points scored in each section. Wisconsin municipalities are comprehensive planning for HEAL with overall moderate comprehensiveness and low strength. Municipalities score highest in the Parks & Recreation section, followed by the Health Care Access section. They score moderately in the Active Transportation and Community Design sections. Municipalities score lowest, by far, in the Vision & Strategy and Healthy Food Access sections. These findings are consistent with the APA's survey of

Table 3. Independent Variables, Operationalization, Source, and Descriptive Statistics.

Independent variable	Operationalization in models	Source	Mean/%[a]	S.D.[a]	Range[a]
Planning variables					
Year	Year the plan was adopted; centered at 2000, scaled to 4 years	Gathered from comprehensive plans	2009	4.0	2000–2018
Planning capacity	# of staff planners per 10,000 population	Gathered from municipal websites and communication with municipal staff, 2022[b]	5.5	7.0	0–28.4
	Has at least one staff planner; indicator variable: 1 = yes, 0 = no	Gathered from municipal websites and communication with municipal staff, 2022[b]	yes: 48.3% no: 51.7%		
Consultant	Consultant as the primary plan author; indicator variable: 1 = yes, 0 = no	Gathered from comprehensive plans	yes: 53.5% no: 46.6%		
Municipal variables					
Population	Natural log	2010 Census	23,816	60,876	497–594,833
Population density	People per square mile; scaled to 1,000[c]	2010 Census	1,826	983	311–6,190
Population change	Average annual population change 2000–2020, as a percentage of 2000 population; scaled to 0.25 percentage points[c]	2000 and 2020 Census	0.1	0.2	−0.1–1.0
Income	Median household income; scaled to $25,000[c]	2008–2012 American Community Survey 5-year estimates	57,380	23,092	25,565–193,438
Education	% of population with Bachelor's degree or higher; scaled to 15 percentage points[c]	2008–2012 American Community Survey 5-year estimates	28.4	14.6	8.6–83.6
Race	% non-White population; scaled to 5 percentage points[c]	2008–2012 American Community Survey 5-year estimates	8.1	7.4	0.3–52.1
Democratic voting	% Democratic vote in 2008 presidential election; scaled to 10 percentage points[c]	Wisconsin Elections Commission	54.1	11.3	19.0–86.1
Municipality type	Indicator variable: 0 = city, 1 = village/town	Wisconsin Department of Administration, 2017	city: 65.5% village/town: 34.5%		
Local health priority (LHP) variables					
Diet & exercise LHP	Diet & exercise as LHP in a county or municipal health department Community Health Assessment; indicator variable: 1 = yes, 0 = no	2021 data gathered by the University of Wisconsin Population Health Institute[b]	yes: 87.9% no: 12.1%		
Housing & transit LHP	Housing & transit as a LHP in a county or municipal health department Community Health Assessment; indicator variable: 1 = yes, 0 = no	2021 data gathered by the University of Wisconsin Population Health Institute[b]	yes: 25.9% no: 74.1%		

[a]Mean, standard deviation, and range are of original variable values (not logarithm, centered, or scaled).
[b]Archival data were not available for earlier years corresponding to the timeframe when the comprehensive plans were adopted.
[c]Variables scaled to near their (unweighted) standard deviation, exact scaling values chosen for interpretability.

planning directors and evaluation of fourteen comprehensive plans and four sustainability plans (Hodgson 2011; Ricklin, Klein and Musiol 2012). These studies also found that the topics of parks & recreation and active transportation were addressed consistently and strongly, that most plans did not address healthy food access, and that plans lacked an explicit discussion of the connection between health, the built environment, and planning (Vision & Strategy section in our assessment) (Hodgson 2011; Ricklin, Klein, and Musiol 2012).

While explicitly planning for HEAL and healthy food systems planning are relatively new movements in modern

Table 4. Statewide Comprehensiveness and Strength Scores for Each Section and Overall.

	Comprehensiveness score (%)			Strength score (%)			
Section	Mean	95% CI	Range	Mean	95% CI	Range	St. to Co.[a]
Vision & Strategy	31.2	29.0, 33.3	0, 100	26.6	24.6, 28.6	0, 75.0	0.9
Active Transportation	56.2	53.1, 59.3	0, 100	43.2	40.6, 45.8	0, 96.2	0.8
Healthy Food Access	27.0	24.5, 29.5	0, 87.5	21.5	19.3, 23.7	0, 87.5	0.8
Parks & Recreation	65.3	62.2, 68.4	0, 100	45.8	43.4, 48.2	0, 90.0	0.7
Health Care Access	61.2	57.3, 65.0	0, 100	40.2	37.2, 43.3	0, 100	0.7
Community Design	51.5	48.6, 54.4	0, 100	41.7	39.4, 44.0	0, 86.7	0.8
Overall	48.3	46.0, 50.6	0, 92.0	37.4	35.5, 39.2	0, 79.0	0.8

Note: CI = confidence interval. Mean and confidence interval calculated using sampling weights and finite population correction.
[a]St. to. Co. is the mean strength score as a proportion of the mean comprehensiveness score. It is a way to quantify and compare the discrepancy between the strength and comprehensiveness scores in each section.

urban planning (Vitiello and Brinkley 2014), community design, transportation planning, planning for community services, and parks and recreation planning have been fundamental components of the planning profession for longer. In addition (and possibly because of this), the four higher-scoring sections are addressed in Wisconsin's comprehensive planning statute while the lower-scoring sections are omitted. It is possible, therefore, that the differences between scores observed across sections are tied to state-level policy governing local-level planning practice.

Strength scores across sections are lower than comprehensiveness scores. While the scores may be high in the Parks & Recreation and Health Care Access sections, the discrepancy between the comprehensiveness and strength scores is also the highest. In these sections, municipalities incorporate a breadth of goals and aspirational statements into their comprehensive plans, but they often omit specific, actionable steps to achieve those goals. For example, they may set goals to improve access to parks or health care services for residents without using data to identify the areas most in need of those resources or providing policy options for improving access. The discrepancy is lowest in the Vision & Strategy section. When municipalities include statements about the explicit connection between planning, the built environment, and HEAL, they are more likely to back up these statements with specific plans, analysis, or recommendations.

A lack of actionability and/or specific implementation provisions is well-documented in comprehensive plans; our results add to similar findings for overall quality (Stevens 2013), smart growth planning (Edwards and Haines 2007), environmental planning (Kim and Tran 2018; Tang 2008), and planning for health (Ricklin, Klein, and Musiol 2012). Plan authors may exclude specific action steps in plans due uncertainty about the future; a disconnect between community support for general issues (e.g., planning for health) versus specific policies (e.g., increased density); or a lack of knowledge about specific, feasible strategies that are likely to work. Whatever the case, this lack of specificity and action-orientation leaves doubt that HEAL-related plan goals will be achieved.

Contextual Factors Associated with the Incorporation of HEAL into Comprehensive Plans

Figures 2 and 3 show that, when not controlled for municipal population, most of the independent variables show statistically significant, positive relationships with plan scores across many of the Scorecard sections. Municipal population is the most consistent and strongest correlate of plan scores in the unadjusted models. This finding is unsurprising, as population has been positively correlated with plan quality in many other studies (Brody, Highfield, and Carrasco 2004; Bunnell and Jepson 2011; Kim and Tran 2018; Peterson et al. 2018; Tang and Brody 2009). Municipalities with higher populations are likely to have greater resources and planners on staff with expertise in subjects related to HEAL, such as active transportation, sustainability, or smart growth.

When adjusted for municipal population, most of the relationships we observed in the unadjusted models are attenuated, many to the point of no longer being statistically significant. Below, we have limited our discussion to correlates that show particularly strong and consistent relationships with plan scores and/or that present surprising findings.

Consistent Correlates of Plan Scores

In the adjusted models, Democratic voting, the year the plan is adopted, a consultant as the primary plan author, and housing and transit as a local health priority consistently correlate with better HEAL promotion in comprehensive plans, across most sections. Meanwhile, higher non-White population percentages are associated with lower HEAL-related plan quality across several sections.

Year of plan adoption and consultant involvement have both been identified as correlates of higher plan quality in previous studies (Bunnell and Jepson 2011; Kim and Tran

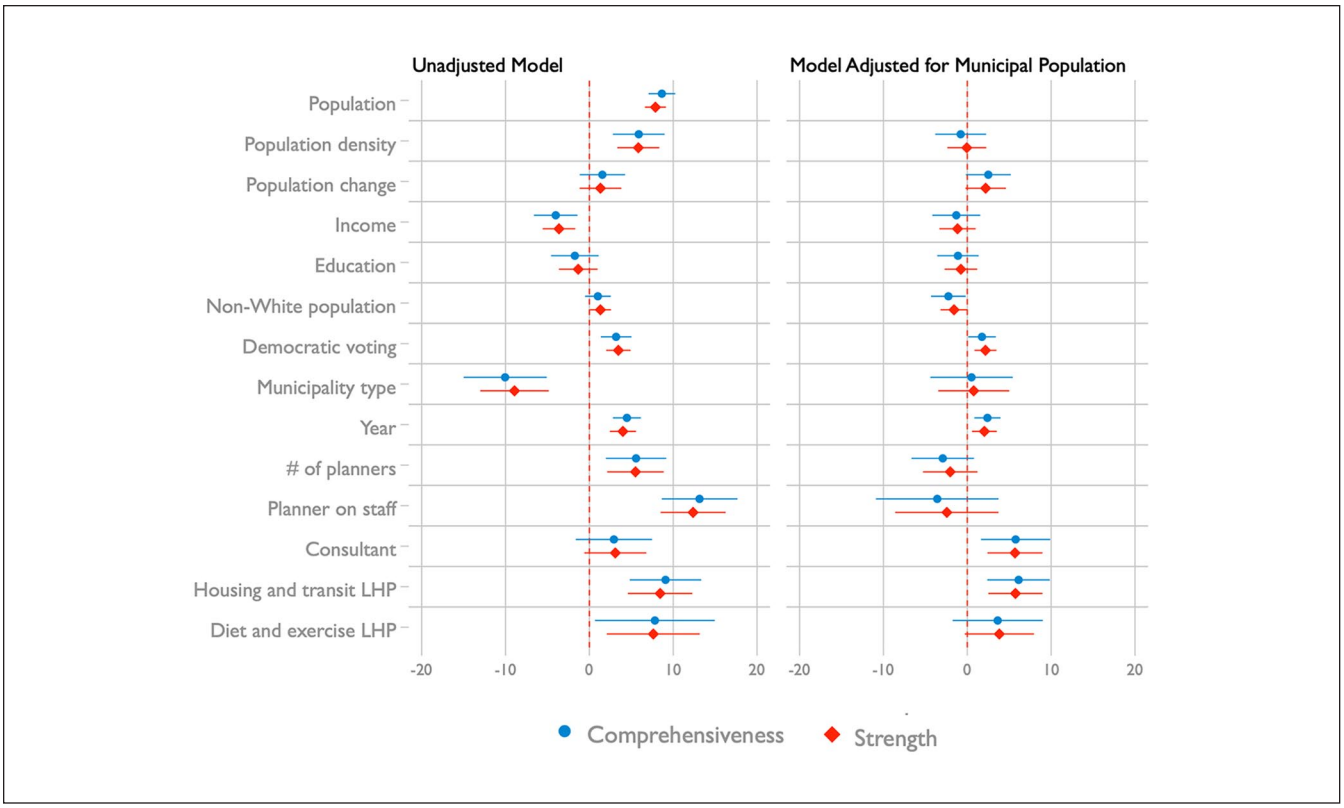

Figure 2. Percentage point differences in overall scores associated with a one-unit change in each independent variable, with 95% confidence intervals. See Table 3 for scaling information for each independent variable.

2018; Stevens 2013; Tang and Brody 2009). Communities and planners may be "learning how to make better plans over time" (Brody 2003b, 198). More recent plans might also be influenced by the resurgence of interest in planning for health, including advocacy, education, and technical assistance efforts by the APA, the American Public Health Association, and other organizations. Consulting firms, for their part, may possess more experience with comprehensive planning, greater technical expertise and skills, access to a more multi-disciplinary network, and may be more up to date on current planning trends.

Democratic voting and local health priorities have not been tested before for associations with comprehensive plan quality. However, political conservatism has been associated with opposition to bicycling infrastructure (A. Wilson and Mitra 2020); smart growth (Lewis 2015; Slaton 2012); and policies, systems, and environmental approaches to obesity prevention (Barry et al. 2009; Welch et al. 2012). Opposition to these policies might be based on the conservative preference for small government, the free market, and the supremacy of individual property rights (Phillips-Fein 2011; Schilling and Keyes 2008). However, drawing on research in social psychology and political behavior, Lewis (2015) argues that such opposition may not be completely based in a rational, cohesive political ideology. Instead, he posits that conservative opposition to mixed-use, dense, transit-oriented development comes from deep-seated moral intuitions that favor single-family, suburban, auto-centric neighborhoods as the "correct" way to order a community (Lewis 2015). In any case, our results add to a growing body of research showing that planning policies that promote health can be highly political.

The connection between having housing and transit identified as a local health priority and plan scores is less clear and requires further investigation. It is possible that, in communities with poor housing and transit infrastructure, local health departments and local planning departments *independently* focus on these areas, each driven by the perceived need for intervention. It is also possible that local health departments that identify housing and transit as a priority area are more likely to work *with* their local planning department to incorporate HEAL promotion into their local comprehensive plan, though previous research shows that such collaboration is not commonplace (Lemon et al. 2015).

The association between non-White population percentage and lower plan scores builds upon two previous studies that found lower prevalence of active-living design plan components in communities with higher non-White populations (Aytur et al. 2008; Peterson et al. 2018). These results are, sadly, not surprising. A history of discriminatory and exclusionary zoning and housing policies, coupled with disinvestment in communities of color, have led to

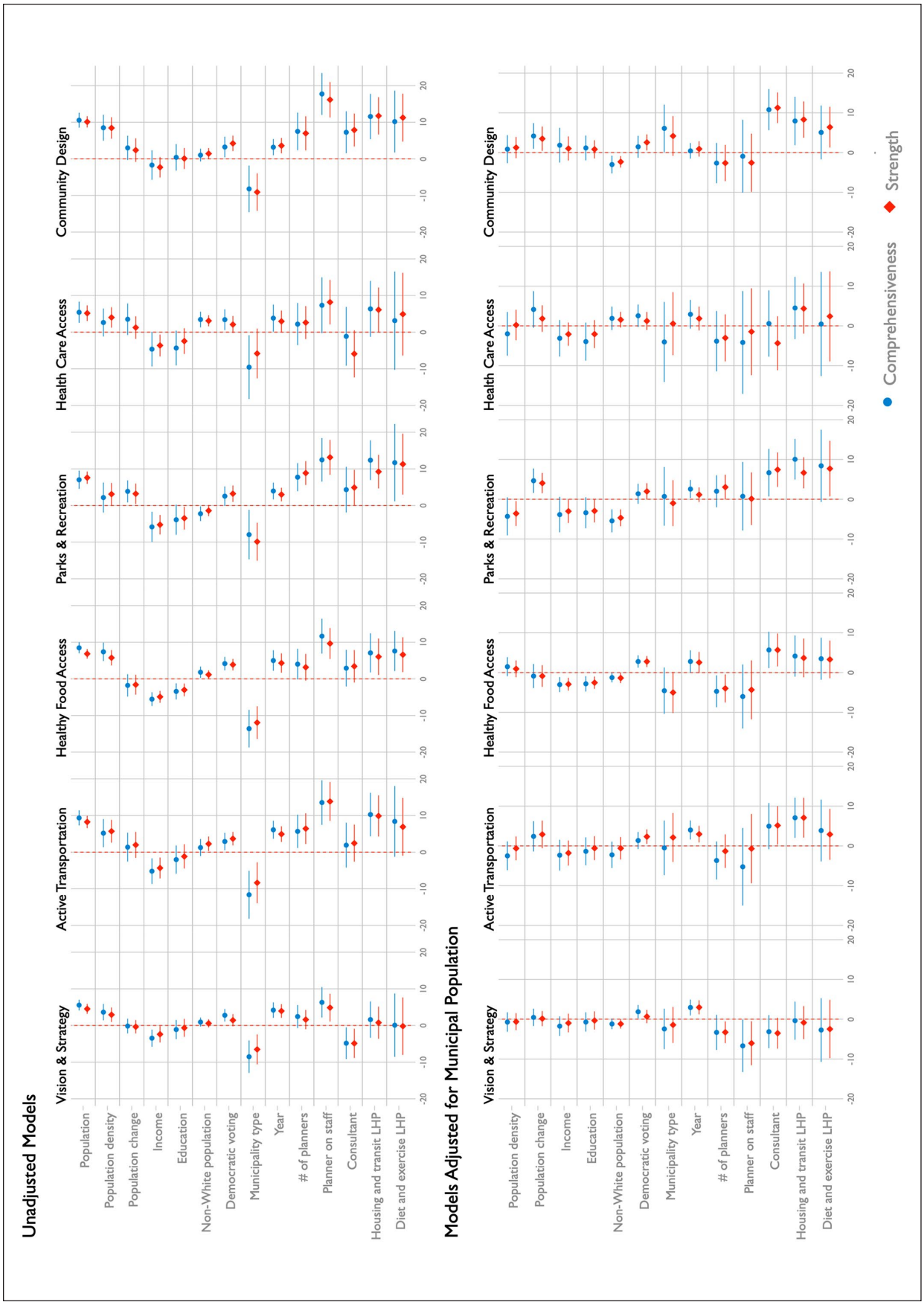

Figure 3. Percentage point differences in section scores associated with a one-unit change in each independent variable, with 95% confidence intervals. See Table 3 for scaling information for each variable. Supplementary Information D contains tables of point estimates, confidence intervals, and *p*-values for each regression coefficient of each model.

racial inequities in the distribution of health-promoting built environment features such as parks; healthy food retail; active transportation infrastructure; and walkable, mixed-use development (Rothstein 2017; S. Wilson, Hutson, and Mujahid 2008). Though our results show differences between municipalities (and not between different neighborhoods within a municipality), they indicate that the healthy planning movement, at least in Wisconsin, may not be adequately addressing these racial inequities. In fact, this finding confirms that high-quality, HEAL-oriented planning is occurring most prominently in already-privileged, White communities, and thus may be exacerbating existing built environment and health inequities.

Surprising Insignificant or Negative Associations between Independent Variables and Plan Scores

Previous studies between income, education, and plan quality have usually found either null (Brody 2003a; Kim and Tran 2018; Loh and Kim 2021; Tang and Brody 2009) or positive associations (Aytur et al. 2007; Brody, Highfield, and Carrasco 2004; Burby and Dalton 1994; Peterson et al. 2018). In addition, previous studies found planning capacity to be a correlate of higher quality plans across topic areas, even after controlling for population (Berke et al. 2002; Kim and Tran 2018; Loh and Kim 2021; Tang and Brody 2009). Yet, when we compare municipalities of the same population size, we find insignificant and, sometimes, negative associations between plan quality and income, education, and planning capacity.

In our study, income and education are associated with lower Healthy Food Access and Parks & Recreation scores. In high-income/high-education municipalities, where food security and park access/quality may already be high, there may be less perceived need for healthy food system or parks and recreation planning. Planning capacity is associated with lower Vision & Strategy and Healthy Food Access scores. These are the sections in which Wisconsin municipalities score the lowest and they cover topics that—compared to active transportation or parks & recreation, for example—are less traditional planning topics. It may be that staff planners are "planning what they know," or enhancing plan quality within traditional planning domains at the expense of nontraditional ones.

Limitations and Future Research Directions

The main limitation of this study is its cross-sectional, high-level view of comprehensive planning for HEAL. While we provide initial evidence of several municipal-level factors associated with HEAL-oriented plan quality, our study cannot elucidate the underlying mechanisms. We recommend in-depth qualitative research to better understand *how* and *why* the factors studied here are linked to the incorporation of HEAL into local comprehensive plans. Such qualitative research would have more potential to provide actionable recommendations to promote better planning for HEAL. For example, studying the connection between local politics and planning for HEAL may reveal strategies for implementing HEAL-supportive built environment policies across the spectrum of political landscapes. Studying the link between housing and transit as an identified local health priority and higher plan scores could provide evidence and models for closer collaboration between public health and planning professionals.

Relatedly, we did not study the implementation of the comprehensive plans, either in enforceable ordinances or on-the-ground built environment conditions. While a number of land use regulations and ordinances are required to be consistent with a locally-adopted comprehensive plan in Wisconsin, the enforcement of this legislation is entirely based on litigation. Therefore, it is possible that goals, objectives, and policies identified in local comprehensive plans are not always reflected in the local zoning ordinances, development codes, subdivision ordinances, and other land use policies. Future studies could therefore investigate the implementation and impacts of including HEAL-promoting components in comprehensive plans—other policy changes, on-the-ground built environment conditions, and differences in health behaviors and outcomes—and whether implementation and impact varies by municipal and planning process factors. For example, plan implementation, especially for novel planning approaches, could be tied to stakeholder involvement in the planning process, the type of plan author (e.g., consultant, local plan commission, regional planning commission), the level of perceived need for the planning approach in the community, or resources available to local planners.

Our study focused on comprehensive plans only, not other plans such as bicycle/pedestrian plans, farmland preservation plans, or sustainability plans. However, the comprehensive plans in our sample often referenced these other plans, so our assessment likely captures some of the goals and policies that would be included in those other plans. Lastly, our sample was limited to suburban and urban municipalities in Wisconsin, and thus, our results are not necessarily generalizable outside of the state nor for rural or small-town communities. Future studies could extend this work to include other states and rural communities. Not only would this expand what we know about the state of planning for HEAL, but it would also open the possibility for cross-state comparative work (e.g., in states with different strength state planning mandates).

Practice Implications

There is still much room to improve comprehensive planning for HEAL in Wisconsin. Local health departments are a valuable resource and many already have programs focusing on

HEAL. At a minimum, we suggest that planners consult their local Community Health Assessment and/or Community Health Improvement Plan as sources of local health data and priorities. Ideally, planners should develop closer connections with local public health officials. Together, they can develop shared understanding and public messaging on the connections between HEAL, the built environment, and planning; leverage local health data; and identify priority strategies for planning for HEAL.

In addition, planners may also require additional education, training, and resources about healthy food systems; health-focused vision and strategy; and specific, actionable strategies to realize HEAL-related goals. Planning organizations such as the APA, as well as public health organizations like the American Public Health Association, may want to target future resources toward these areas. As a starting place, we have developed practice-oriented web pages for planning for HEAL in urban, suburban, and rural communities, including detailed strategies related to each item in the Scorecard, available at https://www.wihealthatlas.org/comprehensive-plans. Further resources, such as examples of policies and recommendations from existing comprehensive plans or case study spotlights of successful planning for HEAL, may be warranted.

Conclusion

Our study shows that municipalities in Wisconsin are starting to incorporate HEAL-promoting components into comprehensive plans, but that more work is needed to ensure that these components cover all important topic areas and are included in an actionable way. Municipalities often include HEAL-promoting aspirations in traditional planning domains like Parks & Recreation, Health Care Access, Active Transportation, and Community Design; however, these goals often lack specific action plans. In addition, municipalities include few components related to Healthy Food Access and or an explicitly health-focused Vision & Strategy. Municipalities with larger populations, more recent plan adoption, a consultant plan author, a higher percentage of Democratic voting, and housing and transit designated as a local health priority have higher HEAL scores. This points to the potentially important role of planning consultants and public health departments in moving planning for HEAL forward.

Acknowledgments

Lisa M. Charron led much of this research while affiliated with University of Wisconsin-Madison, as a project assistant at the UW Population Health Institute, a master's student in the Department of Planning and Landscape Architecture and the Masters of Public Health program, and a PhD student in the Environment & Resources program at the Nelson Institute for Environmental Studies. Nicole Lehr and Thor Jeppson were master's students in the Department of Planning and Landscape Architecture at UW-Madison and student research assistants at the UW Population Health Institute during their work on this project. Daniel E. Villegas and Sebastian Gomez Parra were students in the Department of Geography at UW-Madison and student research assistants at the UW Population Health Institute during their work on this project.

Data and Code Availability Statement

The data collected for this research project and the Stata code used to produce the analytical results are openly available at https://doi.org/10.17605/OSF.IO/ZE6AK.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: Data collection and preliminary data analysis for this project was part of the Wisconsin Obesity Prevention Initiative, with funding provided by the Wisconsin Partnership Program.

ORCID iDs

Lisa M. Charron https://orcid.org/0000-0002-0719-9695

Ronald Gangnon https://orcid.org/0000-0003-2587-6714

Supplemental Material

Supplemental material for this article is available online.

Notes

1. Smart growth principles were also encouraged by the state grant-making program that was initiated when the statute was passed in 1999. However, that program was discontinued in 2010 (Keane 2015; Schilling and Keyes 2008).
2. Our sampling percentage was derived from a power analysis using a pilot study of 33 municipalities, assuming a margin of error of $e = 0.04$.
3. Municipalities without comprehensive plans were given scores of 0 for each item in the Scorecard for the purpose of analysis. We conducted analyses with and without these datapoints, with comparable results both ways.

References

Aytur, Semra A., Daniel A. Rodriguez, Kelly R. Evenson, Diane J. Catellier, and Wayne D. Rosamond. 2007. "Promoting Active Community Environments through Land Use and Transportation Planning." *American Journal of Health Promotion* 21 (suppl. 4): 397–407. doi:10.4278/0890-1171-21.4s.397.

Aytur, Semra A., Daniel A. Rodriguez, Kelly R. Evenson, Diane J. Catellier, and Wayne D. Rosamond. 2008. "The Sociodemographics of Land Use Planning: Relationships to Physical Activity, Accessibility, and Equity." *Health & Place* 14 (3): 367–85. doi:10.1016/j.healthplace.2007.08.004.

Barry, Colleen L., Victoria L. Brescoll, Kelly D. Brownell, and Mark Schlesinger. 2009. "Obesity Metaphors: How Beliefs about the Causes of Obesity Affect Support for Public Policy."

The Milbank Quarterly 87 (1): 7–47. doi:10.1111/j.1468-0009.2009.00546.x.

Berke, Philip R., Neil Ericksen, Jan Crawford, and Jenny Dixon. 2002. "Planning and Indigenous People: Human Rights and Environmental Protection in New Zealand." *Journal of Planning Education and Research* 22 (2): 115–34. doi:10.1177/0739456X02238442.

Bowen, Deborah J., Wendy E. Barrington, and Shirley A. A. Beresford. 2015. "Identifying the Effects of Environmental and Policy Change Interventions on Healthy Eating." *Annual Review of Public Health* 36 (1): 289–306. doi:10.1146/annurev-publhealth-032013-182516.

Brody, Samuel D. 2003a. "Examining the Role of Resource-Based Industries in Ecosystem Approaches to Management: An Evaluation of Comprehensive Plans in Florida." *Society & Natural Resources* 16 (7): 625–41. doi:10.1080/08941920309184.

Brody, Samuel D. 2003b. "Are We Learning to Make Better Plans? A Longitudinal Analysis of Plan Quality Associated with Natural Hazards." *Journal of Planning Education and Research* 23 (2): 191–201. doi:10.1177/0739456X03258635.

Brody, Samuel D., Wes Highfield, and Virginia Carrasco. 2004. "Measuring the Collective Planning Capabilities of Local Jurisdictions to Manage Ecological Systems in Southern Florida." *Landscape and Urban Planning* 69 (1): 33–50. doi:10.1016/j.landurbplan.2003.09.002.

Bunnell, Gene, and Edward J. Jepson. 2011. "The Effect of Mandated Planning on Plan Quality." *Journal of the American Planning Association* 77 (4): 338–53. doi:10.1080/01944363.2011.619951.

Burby, Raymond J., and Linda C. Dalton. 1994. "Plans Can Matter! The Role of Land Use Plans and State Planning Mandates in Limiting the Development of Hazardous Areas." *Public Administration Review* 54 (3): 229–38. doi:10.2307/976725.

CDC. 2020. *Health Equity Resource Toolkit for State Practitioners Addressing Obesity Disparities*. Atlanta, GA: Centers for Disease Control and Prevention. https://www.cdc.gov/nccdphp/dnpao/health-equity/state-health-equity-toolkit/index.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fnccdphp%2Fdnpao%2Fstate-local-programs%2Fhealth-equity%2Findex.html.

Charron, Lisa M. 2025. *Healthy Eating and Active Living in Wisconsin Comprehensive Plans*. Alton, IL: OSF. doi:10.17605/OSF.IO/H48QK.

Charron, Lisa M., Chloe Milstein, Jamie Chriqui, Christiaan Abildso, and Samantha I. Moyers. 2023. *PAPREN State Comprehensive Planning Statutes Dataset*. Alton, IL: OSF. doi:10.17605/OSF.IO/XFV5C.

Chastin, Sebastien F. M., Ukachukwu Abaraogu, Jan G. Bourgois, Philippa M. Dall, Jennifer Darnborough, Elaine Duncan, Jasmien Dumortier, et al. 2021. "Effects of Regular Physical Activity on the Immune System, Vaccination and Risk of Community-Acquired Infectious Disease in the General Population: Systematic Review and Meta-Analysis." *Sports Medicine* 51 (8): 1673–86. doi:10.1007/s40279-021-01466-1.

Chriqui, Jamie F., Julien Leider, Emily Thrun, Lisa M. Nicholson, and Sandy Slater. 2016a. "Communities on the Move: Pedestrian-Oriented Zoning as a Facilitator of Adult Active Travel to Work in the United States." *Frontiers in Public Health* 4 (April): 71. doi:10.3389/fpubh.2016.00071.

Chriqui, Jamie F., Lisa M. Nicholson, Emily Thrun, Julien Leider, and Sandy J. Slater. 2016b. "More Active Living-Oriented County and Municipal Zoning Is Associated with Increased Adult Leisure Time Physical Activity–United States, 2011." *Environment and Behavior* 48 (1): 111–30. doi:10.1177/0013916515611175.

Corburn, Jason. 2004. "Confronting the Challenges in Reconnecting Urban Planning and Public Health." *American Journal of Public Health* 94 (4): 541–46.

Corburn, Jason. 2009. *Toward the Healthy City: People, Places, and the Politics of Urban Planning*. Cambridge, MA: The MIT Press.

Durand, C. P., M. Andalib, G. F. Dunton, J. Wolch, and M. A. Pentz. 2011. "A Systematic Review of Built Environment Factors Related to Physical Activity and Obesity Risk: Implications for Smart Growth Urban Planning." *Obesity Reviews* 12 (5): e173–82. doi:10.1111/j.1467-789X.2010.00826.x.

Edwards, Mary M., and Anna Haines. 2007. "Evaluating Smart Growth: Implications for Small Communities." *Journal of Planning Education and Research* 27 (1): 49–64. doi:10.1177/0739456X07305792.

Evenson, Kelly R., Semra A. Aytur, Sara B. Satinsky, Zachary Y. Kerr, and Daniel A. Rodríguez. 2011. "Planning for Pedestrians and Bicyclists: Results from a Statewide Municipal Survey." *Journal of Physical Activity and Health* 8 (s2): S275–84. doi:10.1123/jpah.8.s2.s275.

Garcia, Mariana T., Silvana M. Ribeiro, Ana Claudia Camargo Gonçalves Germani, and Cláudia M. Bógus. 2018. "The Impact of Urban Gardens on Adequate and Healthy Food: A Systematic Review." *Public Health Nutrition* 21 (2): 416–25. doi:10.1017/S1368980017002944.

Giles-Corti, Billie, Anne Vernez-Moudon, Rodrigo Reis, Gavin Turrell, Andrew L. Dannenberg, Hannah Badland, Sarah Foster, et al. 2016. "City Planning and Population Health: A Global Challenge." *The Lancet* 388 (10062): 2912–24. doi:10.1016/S0140-6736(16)30066-6.

Godos, Justyna, Giuseppe Grosso, Sabrina Castellano, Fabio Galvano, Filippo Caraci, and Raffaele Ferri. 2021. "Association between Diet and Sleep Quality: A Systematic Review." *Sleep Medicine Reviews* 57 (June):101430. doi:10.1016/j.smrv.2021.101430.

Godschalk, David, and William Anderson. 2012. *Sustaining Places: The Role of the Comprehensive Plan* (PAS Report 567). Chicago, IL: American Planning Association. https://www.planning.org/publications/report/9026891/.

Godschalk, David, Samuel Brody, and Raymond Burby. 2003. "Public Participation in Natural Hazard Mitigation Policy Formation: Challenges for Comprehensive Planning." *Journal of Environmental Planning and Management* 46 (5): 733–54. doi:10.1080/0964056032000138463.

Guide to Community Preventive Services. 2016. "Physical Activity: Built Environment Approaches Combining Transportation System Interventions with Land Use and Environmental Design." https://www.thecommunityguide.org/findings/physical-activity-built-environment-approaches.

Hodgson, Kimberly. 2011. *Comprehensive Planning for Public Health: Results of the Planning and Community Health Research Center Study*. Chicago, IL: American Planning Association. https://planning-org-uploaded-media.s3.amazonaws.com/legacy_resources/research/publichealth/pdf/surveyreport.pdf.

Hu, Ming, and Jennifer D. Roberts. 2020. "Connections and Divergence between Public Health and Built Environment—A Scoping Review." *Urban Science* 4 (1): 12. doi:10.3390/urbansci4010012.

Hume, Clare, Jessica A. Grieger, Anna Kalamkarian, Katina D'Onise, and Lisa G. Smithers. 2022. "Community Gardens and Their Effects on Diet, Health, Psychosocial and Community Outcomes: A Systematic Review." *BMC Public Health* 22 (1): 1247. doi:10.1186/s12889-022-13591-1.

Innes, Judith Eleanor, and David E. Booher. 2010. *Planning with Complexity: An Introduction to Collaborative Rationality for Public Policy*. Milton Park, England: Routledge.

Kaplan, Marina, Kristin Maiden, Patricia Miller, Gina Celano, and Lee Ann Walling. 2016. *Healthy Living and Active Design: A Scorecard for Comprehensive Plans*. Lincoln, DE: Cedar Creek Sustainable Planning Services & Nemours Children's Health System. http://www.cedarcreekplanners.com/wp-content/uploads/2016/01/Healthy-Living-Scorecard.pdf.

Kärmeniemi, Mikko, Tiina Lankila, Tiina Ikäheimo, Heli Koivumaa-Honkanen, and Raija Korpelainen. 2018. "The Built Environment as a Determinant of Physical Activity: A Systematic Review of Longitudinal Studies and Natural Experiments." *Annals of Behavioral Medicine* 52 (3): 239–51. doi:10.1093/abm/kax043.

Keane, Michael J. 2015. *Wisconsin's Comprehensive Planning Law* (Legislative Brief 15–12, Wisconsin Briefs). Madison, WI: Wisconsin Legislative Reference Bureau. https://docs.legis.wisconsin.gov/misc/lrb/wisconsin_briefs/2015/wb_15_12.pdf.

Kim, Hyun, and Tho Tran. 2018. "An Evaluation of Local Comprehensive Plans toward Sustainable Green Infrastructure in US." *Sustainability* 10 (11): 4143. doi:10.3390/su10114143.

Klimova, Blanka, Szymon Dziuba, and Anna Cierniak-Emerych. 2020. "The Effect of Healthy Diet on Cognitive Performance among Healthy Seniors—A Mini Review." *Frontiers in Human Neuroscience* 14: 325. https://www.frontiersin.org/articles/10.3389/fnhum.2020.00325.

Leeuw, Evelyne de, and Jean Simos, eds. 2017. *Healthy Cities: The Theory, Policy, and Practice of Value-based Urban Planning*. New York: Springer.

Lemon, Stephenie C., Karin Valentine Goins, Kristin L. Schneider, Ross C. Brownson, Cheryl A. Valko, Kelly R. Evenson, Amy A. Eyler , et al. 2015. "Municipal Officials' Participation in Built Environment Policy Development in the United States." *American Journal of Health Promotion* 30 (1): 42–49. doi:10.4278/ajhp.131021-QUAN-536.

Lewis, Paul G. 2015. "Moral Intuitions and Smart Growth: Why Do Liberals and Conservatives View Compact Development so Differently?" *Journal of Urban Affairs* 37 (2): 87–108. doi:10.1111/juaf.12172.

Li, Ye, Mei-Rong Lv, Yan-Jin Wei, Ling Sun, Ji-Xiang Zhang, Huai-Guo Zhang, and Bin Li. 2017. "Dietary Patterns and Depression Risk: A Meta-Analysis." *Psychiatry Research* 253 (July): 373–82. doi:10.1016/j.psychres.2017.04.020.

Loh, Carolyn G., and Rose Kim. 2021. "Are We Planning for Equity?" *Journal of the American Planning Association* 87 (2): 181–96. doi:10.1080/01944363.2020.1829498.

Lyles, Ward, Philip Berke, and Gavin Smith. 2016. "Local Plan Implementation: Assessing Conformance and Influence of Local Plans in the United States." *Environment and Planning B: Planning and Design* 43 (2): 381–400. doi:10.1177/0265813515604071.

Macmillan, Alexandra, Melody Smith, Karen Witten, Alistair Woodward, Jamie Hosking, Kirsty Wild, and Adrian Field. 2020. "Suburb-Level Changes for Active Transport to Meet the SDGs: Causal Theory and a New Zealand Case Study." *Science of the Total Environment* 714 (April): 136678. doi:10.1016/j.scitotenv.2020.136678.

Maiden, Kristin M., Marina Kaplan, Lee Ann Walling, Patricia P. Miller, and Gina Crist. 2017. "A Comprehensive Scoring System to Measure Healthy Community Design in Land Use Plans and Regulations." *Preventive Medicine* 95 (February): S141–47. doi:10.1016/j.ypmed.2016.09.031.

Marmot, Michael, Sharon Friel, Ruth Bell, Tanja A. J. Houweling, and Sebastian Taylor. 2008. "Closing the Gap in a Generation: Health Equity through Action on the Social Determinants of Health." *The Lancet* 372 (9650): 1661–69. doi:10.1016/S0140-6736(08)61690-6.

Nicholson, Lisa M., Julien Leider, and Jamie F. Chriqui. 2017. "Exploring the Linkage between Activity-Friendly Zoning, Inactivity, and Cancer Incidence in the United States." *Cancer Epidemiology Biomarkers & Prevention* 26 (4): 578–86. doi:10.1158/1055-9965.EPI-16-0331.

O'Toole, Terrence P., Heidi M. Blanck, Rafael Flores-Ayala, Ken Rose, Deborah A. Galuska, Janelle Gunn, Ann O'Connor, Ruth Petersen, and Karen Hacker. 2022. "Five Priority Public Health Actions to Reduce Chronic Disease through Improved Nutrition and Physical Activity." *Health Promotion Practice* 23 (suppl. 1): 5S–11. doi:10.1177/15248399221120507.

Peterson, Erin L., Susan A. Carlson, Thomas L. Schmid, and David R. Brown. 2018. "Prevalence of Master Plans Supportive of Active Living in US Municipalities." *Preventive Medicine* 115 (October):39–46. doi:10.1016/j.ypmed.2018.08.004.

Phillips-Fein, Kim. 2011. "Conservatism: A State of the Field." *Journal of American History* 98 (3): 723–43. doi:10.1093/jahist/jar430.

Pitt, Erin, Danielle Gallegos, Tracy Comans, Cate Cameron, and Lukar Thornton. 2017. "Exploring the Influence of Local Food Environments on Food Behaviours: A Systematic Review of Qualitative Literature." *Public Health Nutrition* 20 (13): 2393–405. doi:10.1017/S1368980017001069.

Rahmanian, Elham, Danijela Gasevic, Ina Vukmirovich, and Scott A. Lear. 2014. "The Association between the Built Environment and Dietary Intake-A Systematic Review." *Asia Pacific Journal of Clinical Nutrition* 23 (2): 183–96. doi:10.6133/apjcn.2014.23.2.08.

Ricklin, Anna, William Klein, and Erin Musiol. 2012. *Healthy Planning: An Evaluation of Comprehensive and Sustainability Plans Addressing Public Health*. Chicago, IL: American Planning Association. https://planning-org-uploaded-media.s3.amazonaws.com/publication/download_pdf/Healthy-Planning.pdf.

Rojas-Rueda, David, and Emily Morales-Zamora. 2023. "Equitable Urban Planning: Harnessing the Power of Comprehensive Plans." *Current Environmental Health Reports* 10 (2): 125–36. doi:10.1007/s40572-023-00399-3.

Rothstein, Richard. 2017. *The Color of Law: A Forgotten History of How Our Government Segregated America*. New York: Liverlight.

Rudolf, Sophie C., and Simona R. Grădinaru. 2019. "The Quality and Implementation of Local Plans: An Integrated Evaluation." *Environment and Planning B: Urban Analytics and City Science* 46 (5): 880–96. doi:10.1177/2399808317737070.

Sallis, James F., Robert B. Cervero, William Ascher, Karla A. Henderson, M. Katherine Kraft, and Jacqueline Kerr. 2006. "An Ecological Approach to Creating Active Living Communities." *Annual Review of Public Health* 27 (1): 297–322. doi:10.1146/annurev.publhealth.27.021405.102100.

Schilling, Joseph, and Sheila D. Keyes. 2008. "The Promise of Wisconsin's 1999 Comprehensive Planning Law: Land-Use Policy Reforms to Support Active Living." Journal of Health Politics, Policy and Law 33 (3): 455–96. doi:10.1215/03616878-2008-005.

Serrano, Natalicio, Lindsey Realmuto, Kaitlin A. Graff, Jana A. Hirsch, Lauri Andress, Mojgan Sami, Ken Rose, et al. 2023. "Healthy Community Design, Anti-Displacement, and Equity Strategies in the USA: A Scoping Review." *Journal of Urban Health: Bulletin of the New York Academy of Medicine* 100(1): 151–80. doi:10.1007/s11524-022-00698-4.

Shah, Sagar, and Brittany Wong. 2020. *Toolkit to Integrate Health and Equity into Comprehensive Plans*. Chicago, IL: American Planning Association. https://www.planning.org/publications/document/9201866/?utm_campaign=2020-08-06+HIP+content+order&utm_medium=email&utm_source=Pew.

Slaton, James E. A. 2012. "Navigating the Political Challenges to Sustainable Development." *Probate & Property* 26(4): 52–6.

Smith, Melody, Jamie Hosking, Alistair Woodward, Karen Witten, Alexandra MacMillan, Adrian Field, Peter Baas, and Hamish Mackie. 2017. "Systematic Literature Review of Built Environment Effects on Physical Activity and Active Transport—An Update and New Findings on Health Equity." *International Journal of Behavioral Nutrition and Physical Activity* 14 (November): 158. doi:10.1186/s12966-017-0613-9.

Solomons, Noel W. 2007. "Malnutrition and Infection: An Update." *British Journal of Nutrition* 98 (S1): S5–10. doi:10.1017/S0007114507832879.

StataCorp. 2019. *Stata Statistical Software: Release 16*. College Station, TX: StataCorp LLC.

StataCorp. 2021. *Stata Statistical Software: Release 17*. College Station, Texas: StataCorp LLC.

Stearns, Jodie A., Hayford M. Avedzi, Desmond Yim, John C. Spence, Farshad Labbaf, Carminda G. Lamboglia, Fiona Ko, et al. 2023. "An Umbrella Review of the Best and Most Up-to-Date Evidence on the Built Environment and Physical Activity in Older Adults ≥60 Years." *Public Health Reviews* 44: 1605474. doi:10.3389/phrs.2023.1605474.

Stevens, Mark R. 2013. "Evaluating the Quality of Official Community Plans in Southern British Columbia." *Journal of Planning Education and Research* 33 (4): 471–90. doi:10.1177/0739456X13505649.

Story, Mary, Karen M. Kaphingst, Ramona Robinson-O'Brien, and Karen Glanz. 2008. "Creating Healthy Food and Eating Environments: Policy and Environmental Approaches." *Annual Review of Public Health* 29 (1): 253–72. doi:10.1146/annurev.publhealth.29.020907.090926.

Tang, Zhenghong. 2008. "Evaluating Local Coastal Zone Land Use Planning Capacities in California." *Ocean & Coastal Management* 51 (7): 544–55. doi:10.1016/j.ocecoaman.2008.06.001.

Tang, Zhenghong, and Samuel D. Brody. 2009. "Linking Planning Theories with Factors Influencing Local Environmental-Plan Quality." *Environment and Planning B: Planning and Design* 36 (3): 522–37. doi:10.1068/b34076.

Thrun, Emily, Julien Leider, and Jamie F. Chriqui. 2016. "Exploring the Cross-Sectional Association between Transit-Oriented Development Zoning and Active Travel and Transit Usage in the United States, 2010–2014." *Frontiers in Public Health* 4 (June): 113. doi:10.3389/fpubh.2016.00113.

USDA. 2020. *Scientific Report of the 2020 Dietary Guidelines Advisory Committee: Advisory Report to the Secretary of Agriculture and Secretary of Health and Human Services*. Washington, DC: U.S. Department of Agriculture, Agricultural Research Service. doi:10.52570/DGAC2020.

USDA and USDHHS. 2020. *Dietary Guidelines for Americans, 2020-2025*. 9th ed. Washington, DC: U.S. Department of Agriculture and U.S. Department of Health and Human Services.

USDHHS. 2018a. *Physical Activity Guidelines for Americans, 2nd Edition.* Washington, DC: U.S. Department of Health and Human Services. https://health.gov/paguidelines/second-edition/pdf/Physical_Activity_Guidelines_2nd_edition.pdf.

USDHHS. 2018b. *2018 Physical Activity Guidelines Advisory Committee Scientific Report*. Washington, D.C.: U.S. Department of Health and Human Services. https://health.gov/our-work/nutrition-physical-activity/physical-activity-guidelines/current-guidelines/scientific-report.

Vitiello, Domenic, and Catherine Brinkley. 2014. "The Hidden History of Food System Planning." *Journal of Planning History* 13 (2): 91–112. doi:10.1177/1538513213507541.

Welch, Philip J., Joseph A. Dake, James H. Price, Amy J. Thompson, and Sunday E. Ubokudom. 2012. "State Legislators' Support for Evidence-Based Obesity Reduction Policies." *Preventive Medicine* 55 (5): 427–29. doi:10.1016/j.ypmed.2012.09.008.

WHO. 2013. *Global Action Plan for the Prevention and Control of Noncommunicable Diseases 2013-2020*. Geneva, England: World Health Organization. https://www.who.int/publications/i/item/9789241506236.

Wilson, Adam, and Raktim Mitra. 2020. "Implementing Cycling Infrastructure in a Politicized Space: Lessons from Toronto, Canada." *Journal of Transport Geography* 86 (June):102760. doi:10.1016/j.jtrangeo.2020.102760.

Wilson, Sacoby, Malo Hutson, and Mahasin Mujahid. 2008. "How Planning and Zoning Contribute to Inequitable Development, Neighborhood Health, and Environmental Injustice." *Environmental Justice* 1 (4): 211–16. doi:10.1089/env.2008.0506.

Author Biographies

Lisa M. Charron, PhD, MS, MPH, is an independent researcher and a professional academic editor. Her research interests include planning for public health and sustainability, planetary health, and open science.

Hilary R. Joyner, MS, is an evaluation researcher at the University of Wisconsin-Madison Population Health Institute.

James A. LaGro Jr., PLA, PhD, is an emeritus professor in the Department of Planning and Landscape Architecture at the University of Wisconsin-Madison. He also serves as editor-in-chief of *Landscape Journal*.

Nicole Lehr, MS, is a community nutrition instructor with Michigan State University Extension. She teaches nutrition and physical activity classes and coaches community partners through policy, systems, and environmental changes that promote healthy eating and physical activity.

Daniel E. Villegas, BS, is the ADA Paratransit Eligibility & Mobility Coordinator for the City of Madison, Wisconsin.

Thor Jeppson, MS, is an assistant planner for the City of Monona, Wisconsin.

Sebastian Gomez Parra, BS, is currently pursuing a Master of Science in Geographic Information Systems and Spatial Analysis at West Virginia University.

Ronald Gangnon, PhD, is a professor in the Department of Population Health Sciences and the Department of Biostatistics and Medical Informatics at the University of Wisconsin-Madison.

Sara M. Lindberg, PhD, is the Director of Evaluation & Engaged Research at the University of Wisconsin-Madison Population Health Institute and a faculty member in the Department of Population Health Sciences and the Masters of Public Health program. At the core of her research is a passion to use her methodological skills in support of efforts that improve opportunities for all people to achieve health and wellbeing.