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Municipal Officials' Perceived Barriers to Consideration of Physical Activity in Community Design Decision Making

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Abstract

Context—Built environment-focused interventions and policies are recommended as sustainable approaches for promoting physical activity. Physical activity has not traditionally been considered in land use and transportation decision making. Effective collaboration with non-public health partners requires knowledge of their perceived barriers to consideration of physical activity in decision making.

Conflicts of Interest

The authors have no declared conflicts of interest.

Objective—This study aimed to 1) identify barriers to the consideration of physical activity in community design and planning decisions among municipal decision makers and 2) explore differences in these barriers among a wide range of job functions and departments in a geographically diverse sample.

Design—A web-based survey was conducted among municipal officials in 94 cities and towns with populations of at least 50,000 residents in eight states.

Participants—453 municipal officials from public health, planning, transportation/public works, community and economic development, parks and recreation, city management, and municipal legislatures responded to the survey.

Main Outcome Measures—Five barriers to consideration of physical activity in community design and layout were assessed.

Results—The most common barriers included lack of political will (23.5%), limited staff (20.4%) and lack of collaboration across municipal departments (16.2%). Fewer participants reported opposition from the business community or residents as barriers. Compared to other professionals, public health department personnel were more likely to report the barriers of limited staff and lack of collaboration across municipal departments. They were also more likely to report lack of political will compared to city managers or mayors and municipal legislators.

Conclusions—Barriers to increasing consideration of physical activity in decision making about community design and layout are encouragingly low. Implications for public health practice include the need to strategically increase political will despite public health staffing constraints and perceived lack of collaboration with relevant departments such as planning and public works/ transportation.

Keywords

environment; physical activity; planning; policy

INTRODUCTION

The built environment has been described as “...the sum total of what we design and construct in the places we live, work, go to school, and play—from streets and highways to houses, businesses, schools and parks”. As evidence accumulates on the association between the built environment and physical activity,¹ environment- and policy-focused interventions have been increasingly recommended as cost-effective, sustainable approaches for promoting physical activity.² The built environment as it affects physical activity is shaped largely by land use and transportation factors, which in turn reflect a complex mix of decision making at national, state and local levels. Public health concerns such as lack of physical activity have not traditionally been considered in built environment decision making.³ Recommendations for modifying policy and the built environment through transportation and land use changes include local or municipal level collaboration,⁴ but contain little guidance on how public health practitioners should work with new local partners. Additionally, little is known about how municipal staff and elected officials view such collaboration or how they might share planning priorities.

Effective transdisciplinary collaboration between public health and community decision makers requires knowledge of attitudes and beliefs, including views on barriers to the consideration of physical activity in community design decision-making. Studying the policy process in addition to the effects of current or proposed policy and understanding the perceived barriers of municipal staff and elected officials to community design that encourages physical activity are important research needs. Of the research on public officials' views on physical activity and public health,²⁰⁰⁹ only four studies examined barriers at the municipal level.²⁰⁰⁹ Inadequate funding (staff and infrastructure projects) ranked high, and other cited barriers included lack of political will/low prioritization, competing priorities, staffing challenges, and the role of government or department in encouraging physical activity. Limitations of these analyses include samples of a single discipline, a single geographic area, and professional association members. There is a need to further characterize barriers perceived by a range of municipal staff and officials including public health personnel, who are being encouraged to involve themselves in often unfamiliar policy processes.

This study aimed to 1) identify barriers to the consideration of physical activity in community design and layout decisions reported by municipal decision makers and 2) explore differences in these barriers among municipal decision makers representing a wide range of departments and job functions in a geographically diverse sample. Anticipating a bias of appointed officials toward municipal process and elected officials toward public sentiment, we hypothesized that municipal department staff would report more internal barriers while elected officials would report more external barriers. We also hypothesized that respondents in public health and planning would report fewer barriers than other respondents based on the importance of a walkable or bikeable environment to their discipline's goals.

METHODS

This study was a collaboration among institutions participating in the Centers for Disease Control and Prevention-funded Physical Activity Policy Research Network (PAPRN). The study was coordinated by the University of Massachusetts Medical School with investigators from seven other PAPRN-affiliated universities. The protocol was approved by the Institutional Review Boards at all these institutions.

Target Population

The target population for this study was elected and appointed municipal officials from 94 cities with 50,000 residents or more (according to the 2010 Census) in eight states (CO, GA, HI, KS, MA, MO, NC, WV). Departments of planning, community development, economic development, public works, transportation, engineering, parks and recreation, neighborhood services, and public health were selected. County public health departments were identified for cities and towns with no municipal or unified city/county health department (n=57). City/town managers, mayors and municipal legislators (city council members, aldermen, commissioners, selectmen and policy staff) were also targeted.

The Municipal Yellow Book (www.leadershipdirectories.com), a proprietary database of officials in U.S. municipalities with at least 60,000 residents, was the primary source of contact information for cities of this size. Current Census data were used to identify cities with populations of 50,000–60,000 residents in the included states. Municipal websites were searched to ascertain contact information for officials who met study criteria and to supplement missing contact information for larger cities.

Survey Development

The current analysis used a sub-set of questions from a larger survey of municipal officials' attitudes, beliefs and behaviors with respect to built environment public policies. Recognizing that physical activity is not a traditional consideration in decision making about community design and layout, survey development was guided by Diffusion of Innovation theory. The process included (a) key informant interviews with five officials (mayor, city economic development officer, state legislators, and bicycle/pedestrian planner) and two academicians (political science, economics) to explore community built environment decision making and importance of political and public support; (b) systematic literature review to identify existing measurement items corresponding to relevant DOI theory constructs; (c) investigator consensus whether an existing item should be included verbatim or modified slightly or new items developed; (d) cognitive interviews of the draft survey with four individuals representing planning, transportation and community development to ensure comprehension and relevance; (e) programming in Qualtrics (www.qualtrics.com); and (f) pilot testing of the final web-based, 43-item survey with research staff and seven individuals representing economic development, planning, transportation, and public health.

Survey Administration

Personalized email invitations describing the study purpose and containing a survey link were sent to work email addresses. Invitations were sent by the respective site investigator except NC (invitations came from the coordinating institution). Invitees from six states were informed that after survey completion they could enter a raffle for one of ten \$25 gift cards (two states do not allow raffles). A consent section assured confidentiality and provided investigator contact information for the respective state and the coordinating institution. After one week all non-responders who did not actively refuse via email or telephone received one email reminder. Up to three telephone reminders were made to non-responders over a 5-week period in June/July 2012, terminating once contact with the target individual was made or ineligibility confirmed. Survey links were resent upon request, and invitations were sent to replacements for individuals no longer working for or representing the municipality plus a small number of new contacts suggested by target individuals or department staff during telephone reminders. Reminder calls were conducted by staff at the respective university for all states except NC, for which the coordinating institution made calls.

Measures

Barriers were assessed by five items developed by the investigative team based on concepts from previous research⁷ and confirmed in our developmental work: limited staff; lack of collaboration among departments; lack of political will; opposition from the business

community; and opposition from residents. For each question, items were worded “To what extent do you believe “[BARRIER]” prevents physical activity from being considered in decision making about community design and layout in your community?” Responses were rated on a five-point Likert scale (Not at all, A little, Somewhat, Very much, Extremely). Because few respondents provided responses on the extreme ends of the scale, each item was re-coded into a 3 category response corresponding to Weak or no barrier (Not at all or A little), Somewhat a barrier, or Strong barrier (Very much, Extremely). *Position of respondent* was assessed by two questions that classified job function and department. These variables were re-coded into a single variable with seven categories (see Table 1). *Covariates* are also listed in Table 1.

Statistical Analysis

Analyses were performed using SPSS version 20. Descriptive statistics were first computed. The frequency distributions of each barrier were computed for the full sample and stratified by position. Chi square statistics were used to test for differences. Multinomial logistic regression models were run to assess the association between job position and each barrier. Models compared participants from public health (referent) to each of the other positions on whether each barrier was (i) Somewhat a barrier versus Weak or no barrier or (ii) or Strong barrier versus Weak or no barrier. Two sets of multivariable models were computed. The first set adjusted for all covariates, and the second set excluded variables for which there was more than 5% missing data (fiscal affiliation, social affiliation, race/ethnicity). Only the second set of models is presented as the results of the models did not differ. The association between job position and the sum of all five barriers on the original five-point scale (possible values 0–20, with greater scores indicating more barriers) was examined using analysis of variance.

RESULTS

Study Sample

Initially, 1845 individuals were identified and invited to participate. An additional 32 individuals were identified as eligible participants during survey administration and sent email invitations. One hundred-four original invitees were deemed ineligible because they no longer worked for or represented the municipality, had a current job function that did not match inclusion criteria, the department was no longer under municipal control, or individuals could not be confirmed as employees (e.g. phone disconnected, name not recognized). The final number of invited individuals was 1773, of which 461 (26%) completed the survey. An additional 8 individuals were excluded from this analysis because they reported working in combined municipal departments (e.g. Public Works and Planning), resulting in a final analytic sample of 453 (Table 1).

Barriers Reported

The most commonly reported barrier to consideration of physical activity in community design and layout decision making was lack of political will (23.5%), followed by limited staff (20.4%), lack of collaboration across municipal departments (16.2%), business community opposition (14.6%) and resident opposition (10.2%). Table 2 describes the

distribution of the five barriers stratified by job position. The mean summary barrier score was 7.2 (SD=3.6).

Association of Position with Barriers

Table 3 presents the results of the adjusted multinomial logistic regression models. Mayors/city managers and municipal legislators were less likely to report *lack of political will* as a strong barrier compared to those in public health departments, with a trend toward a similar association for those in economic or community development. Respondents in planning, transportation/public works, and community/economic development, mayors/city managers, and municipal legislators were less likely to report *limited staff* as a strong barrier compared to public health professionals. Respondents in transportation/public works, community/economic development, and parks and recreation, mayors/city managers, and municipal legislators were less likely to report *lack of collaboration among departments* as a strong barrier than were those in public health departments. There were no differences between public health officials and those from other departments with respect to reporting *opposition from the business community* and *opposition from residents* as strong barriers.

With one exception, there were no associations between each of the covariates under study and any of the five individual barriers or the barriers summary score. There was a linear association between self-identification on social issues and perception of business community opposition as a strong barrier, with decreased likelihood of reporting opposition from the business community as a strong barrier (AOR=0.75; 95% CI=0.57, 0.99) with each gradient of the seven point scale from liberal to extremely conservative compared to those who self-identified as very liberal.

There were also differences by position in the barriers summary score. Compared to those in public health, those in planning ($\beta=-1.69$; 95% CI=-0.14, -2.30), transportation and public works ($\beta=-2.83$; 95% CI=0.08, -3.27), economic and community development ($\beta=-2.30$; 95% CI=-0.87, -3.73), parks and recreation ($\beta=-1.66$; 95% CI=-0.31, -3.12), mayors and city management ($\beta=-3.27$; 95% CI=-1.76, -4.77) and municipal legislators ($\beta=-3.0$; 95% CI=-1.69, -4.13) reported fewer barriers.

DISCUSSION

Given current recommendations on improving land use and transportation processes to increase physical activity and reduce overweight and obesity, understanding the perspectives of local policy decision-makers is crucial to begin building the needed collaboration with these officials. To our knowledge, this is the first study to assess a representative sample of municipal officials about their views on consideration of physical activity in local decision making about community design.

Overall levels of these selected barriers to the consideration of physical activity in community design and planning were encouragingly low, with even the highest barrier of political will ranked as strong by less than a quarter of the total sample. Hollander et al. found similar percentages reporting no political will to support active community design among members of county management, environmental health, and planning associations.

Higher ratings for this type of barrier were reported by researchers who asked planning directors about officials' support for planning innovations and staff knowledgeable about walking and bicycling about officials' support for projects. It may be that officials respond favorably to more general, health-related language that references process rather than pedestrian and bicycle facilities or specific land use issues.

Our sample reported limited staff to be much less of a barrier than have other researchers' . . . 2009, although public health personnel perceived it as a greater barrier than did other positions. Local public health departments struggle with staff cuts even as calls are made to realign public health funding to match current needs such as increased physical activity. Our finding on lack of collaboration among departments as a barrier echoes previous work. The need for intergovernmental coordination was one of five themes identified through a case study exploring implementation of local policies to promote physical activity in Montgomery County, Maryland. Planning directors of mid-sized cities generally could not say whether their public health department was in support of or opposed innovative land use policies that support active living, which could indicate a lack of collaboration.

We found internal barriers (e.g. political will, lack of collaboration, limited staff) to be perceived as greater barriers than external barriers (e.g. community opposition) across job positions and that public health department professionals were generally more likely to report all internal barriers compared to professionals in other positions. Several explanations are possible for this. Public health personnel may have greater trepidation about interactions with these other departments because they have less history of inter-departmental collaboration than do other departments, especially planning and public works/ transportation. Another possibility is that public health personnel who responded the survey have actually experienced these barriers in trying to increase consideration of physical activity in built environment decision making.

Our results have several practice implications. Strengthening political will to increase consideration of physical activity in community design is clearly the paramount barrier to address. Evidence-based appeals to city management and elected officials is a logical approach, but it may be less effective at the local level where decision making is less policy-based and more parochial. Practitioners must identify targets and opportunities more strategically based on specific knowledge of their state and local regulatory processes. For example, which municipal legislative committees are relevant and who is on them? What are the appointed land use and transportation boards or committees, and what is the appointment process? What constituent groups already have the attention of that legislator? The grey literature offers resources for more general education on these processes (sources such as ChangeLab Solutions, formerly Public Health Law and Policy, www.changelabsolutions.org), but practitioners should also seek out state-specific educational opportunities. In Massachusetts, for example, the Citizen Planner Training Collaborative (www.umass.edu/masscptc/) offers certificates in basic land use planning concepts through workshops to increase capacity of local land use planning boards (registration is open to anyone), and the Massachusetts Department of Transportation offers introductory and more technical Complete Streets workshops. Practitioners must also

demonstrate that local public support exists for built environment change, as has been found in national research studies. It may be helpful to consider this work as building a social movement, whereby the science base is utilized along with social marketing to effect social norm changes that ultimately result in policy change.

To address staffing constraints, public health departments should prioritize staff efforts on activities where only municipal employees are allowed to participate (e.g. plan review, optional developer meetings prior to public hearings before regular land use board meetings). A previous investigation observed that public health agencies whose leaders prepared their departments most for built environment work were more likely to achieve changes to the built environment. The public health community is broader than municipal or county public health staff. Health care institutions, social service agencies, community-based organizations such as YMCAs, food policy councils, neighborhood associations, environmental or social justice groups, and educational institutions are increasingly concerned about the built environment. Advocates in turn must develop and implement a system for regular, ongoing participation in the public process for land use and transportation to demand consideration of physical activity: review plans as available; monitor meeting agendas for relevant city committees and boards; show up at public hearings to testify; and submit written comments.

Public health practitioners must cultivate relationships with fellow municipal departments just as they do with traditional community partners, applying the principles of participatory management, coalition development, and community engagement to build awareness, common objectives and the value of partnerships. Understanding other departments' missions and performance measures and serving as a local resource for best practices and model policies is critical to increase consideration of physical in built environment decision making.

This study had several strengths. It took a unique approach by surveying a representative sample across multiple disciplines that affect the built environment at the local level. The multi-state sample represented different regions of the US and urban areas of varying sizes. The study also had several limitations. All data are self-report. Only urban areas with at least 50,000 residents were studied. The low response rate was likely influenced by multiple factors, including busy schedules, survey timing at the end of municipal fiscal year, restricted Internet access or spam filters at municipal worksites, and inaccurate email addresses. Precision was limited because small cell sizes resulted in large confidence intervals despite reasonable total sample size. Finally, not all potential barriers were assessed in an effort to respect officials' time. Funding would likely have been a strong barrier with this sample as in previous research, but funding constraints are a fact going forward. Creativity will lie in making progress in spite of this, with funding an expression of political will.

Integrating public health concerns about physical activity into existing, legally constrained and mandated public processes with a long history of favoring motor vehicles as the default mode of transportation can help achieve more walkable and bikeable communities. Results of this study illuminate the major barriers reported by local actors to the transdisciplinary

collaboration that will be necessary for this integration to be successful. The data provide the public health community, from health department personnel to advocates, with evidence-based information to begin translating national recommendations about built environment down to the local level.

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References

1. Lee M, Rubin V. The state of current practice and next steps for a growing movement. Produced for PolicyLink for the California Endowment. 2007
2. Sallis JF. Measuring physical activity environments: a brief history. *Am J Prev Med.* 2009; 36(4 Suppl):S86–92. [PubMed: 19285214]
3. Heath GW, Brownson R, Kruger J, Miles R, Powell KE, Ramsey LT. The effectiveness of urban design and land use and transport policies and practices to increase physical activity: A systematic review. *Journal of Physical Activity and Health.* 2006; 3:S55–S71.
4. Frank LD, Andresen MA, Schmid TL. Obesity relationships with community design, physical activity, and time spent in cars. *Am J Prev Med.* 2004; 27(2):87–96. [PubMed: 15261894]
5. Brownson RC, Baker EA, Housemann RA, Brennan LK, Bacak SJ. Environmental and policy determinants of physical activity in the United States. *Am J Public Health.* 2001; 91(12):1995–2003. [PubMed: 11726382]
6. Transportation Research Board. TRB Special Report. Does the built environment influence physical activity? Examining the evidence. Washington, DC: Institute of Medicine of the National Academies; 2005.
7. Frieden TR. A framework for public health action: the health impact pyramid. *Am J Public Health.* 2010; 100(4):590–595. [PubMed: 20167880]
8. Keener, D.; Goodman, K.; Lowry, A.; Zaro, S.; Kettel, KL. Recommended community strategies and measurements to prevent obesity in the United States: Implementation and measurement guide. Atlanta, GA: US Department of Health and Human Services, Centers for Disease Control and Prevention; 2009.
9. Parker, L.; Burns, AC.; Sanchez, E., editors. Local Government Actions to Prevent Childhood Obesity. Washington, DC: Institute of Medicine and National Research Council of The National Academies Press; 2009.
10. Robert Wood Johnson Foundation. [Accessed October 10, 2012] Leadership for healthy communities: Action strategies toolkit. 2009. www.leadershipforhealthycommunities.org
11. US National Physical Activity Plan Coordinating Committee. [Accessed October 10, 2012] National physical activity plan. 2010. <http://www.physicalactivityplan.org/NationalPhysicalActivityPlan.pdf>
12. Frank LD, Engelke PO. The built environment and human activity patterns: Exploring the impacts of urban form on public health. *J Planning Literature.* 2001; 16(2):202–218.
13. Perdue WC, Stone LA, Gostin LO. The built environment and its relationship to the public's health: The legal framework. *Am J Public Health.* 2003; 93(9):1390–1394. [PubMed: 12948949]
14. Community Prevention Services Taskforce. [Accessed October 10, 2012] Guide to community prevention services. Environmental and policy approaches: Street-scale urban design and land use

policies. Updated 12/21/2011. www.thecommunityguide.org/pa/environmental-policy/streetscale.html

15. Bernier NF, Clavier C. Public health policy research: Making the case for a political science approach. *Health Promot Int*. 2011; 26(1):109–116. [PubMed: 21296911]
16. Dannenberg AL, Jackson RJ, Frumkin H, et al. The impact of community design and land-use choices on public health: A scientific research agenda. *Am J Public Health*. 2003; 93(9):1500–1508. [PubMed: 12948970]
17. Maddock JE, Reger-Nash B, Heinrich K, Leyden KM, Bias TK. Priority of activity-friendly community issues among key decision makers in Hawaii. *J Phys Act Health*. 2009; 6(3):386–390. [PubMed: 19564669]
18. Heinrich KM, Stephen MO, Vaughan KB, Kellogg M. Kansas legislators prioritize obesity, but overlook nutrition and physical activity issues. *J Public Health Manag Pract*. in press.
19. Leyden KM, Reger-Nash B, Bauman A, Bias T. Changing the hearts and minds of policy makers: an exploratory study associated with the West Virginia Walks campaign. *Am J Health Promot*. 2008; 22(3):204–207. [PubMed: 18251122]
20. Salvesen D, Evenson KR, Rodriguez DA, Brown A. Factors influencing implementation of local policies to promote physical activity: A case study of Montgomery County, Maryland. *J Public Health Manag Pract*. 2008; 14(3):280–288. [PubMed: 18408553]
21. Dill J, Howe D. The role of health and physical activity in the adoption of innovative land use policy: Findings from surveys of local governments. *J Phys Act Health*. 2011; 8(Suppl 1):S116–124. [PubMed: 21350252]
22. Evenson KR, Aytur SA, Satinsky SB, Rodriguez DA. Barriers to municipal planning for pedestrians and bicyclists in North Carolina. *N C Med J*. 2011; 72(2):89–97. [PubMed: 21721492]
23. Hollander M, Martin SL, Vehige T. The surveys are in! The role of local government in supporting active community design. *J Public Health Manag Pract*. 2008; 14(3):228–237. [PubMed: 18408547]
24. Bocarro, JN.; Casper, J.; Henderson, KA., et al. [Accessed October 10, 2012] Physical activity promotion in North Carolina: Perceptions of public park and recreation directors. *Journal of Park and Recreation Administration*. Jan 27. 2009 <http://js.sagamorepub.com/jpra/article/view/1294>
25. Rogers, EM. *Diffusion of Innovations*. 4. New York, NY: Free Press; 1995.
26. National Association of County and City Health Officials (NACCHO). [Accessed October 10, 2012] Local health department job losses and program cuts: Findings from the January 2012 survey. www.naccho.org/lhdbudget
27. Sallis JF. A proportional public health response to physical inactivity. *J Public Health Manag Pract*. 2012; 18(5):399–401. [PubMed: 22836529]
28. Brownson RC, Chiqui JF, Stamatakis KA. Understanding evidence-based public health policy. *Am J Public Health*. 2009; 99(9):1576–1583. [PubMed: 19608941]
29. Liu X, Lindquist E, Vedlitz A, Vincent K. Understanding local policymaking: Policy elites' perceptions of local agenda setting and alternative policy selection. *The Policy Studies Journal*. 2010; 38(1):69–74.
30. Carlson SA, Guide R, Schmid TL, Moore LV, Barradas DT, Fulton JE. Public support for street-scale urban design practices and policies to increase physical activity. *J Phys Act Health*. 2011; 8(Suppl 1):S125–134. [PubMed: 21350253]
31. Economos CD, Brownson RC, DeAngelis MA, et al. What lessons have been learned from other attempts to guide social change? *Nutr Rev*. 2001; 59(3 Pt 2):S40–56. discussion S57–65. [PubMed: 11360889]
32. Kuiper H, Jackson RJ, Barna S, Satariano WA. Local health department leadership strategies for healthy built environments. *J Public Health Manag Pract*. 2012; 18(2):E11–23. [PubMed: 22286292]

Table 1

Description of the study sample (n=453).

Characteristic	% of sample
Position	
Public health	8.4
Planning	9.9
Transportation/public works	14.3
Community/economic development	13.7
Parks and recreation	13.5
Mayor/City manager	10.6
Municipal legislator	29.6
Gender	
Female	29.5
Male	70.5
Race/ethnicity	
White	78.7
African American/Black	10.0
Mixed race or Other race	5.6
Prefer not to answer	5.9
Education	
High school degree or less	7.8
Some college/Technical training	32.6
College degree or higher	59.5
Do you live in the city in which you work?	
Yes	78.3
Walk or bike for transportation in the past week	
Yes	36.2
On social issues do you consider yourself...	
Liberal	38.2
Moderate	24.7
Conservative	30.2
Other/Prefer not to answer	7.0
On fiscal issues, do you consider yourself...	
Liberal	16.9
Moderate	26.7
Conservative	50.4
Other/Prefer not to answer	6.1

Table 2

Barriers to consideration of physical activity in decision making about community design and layout by position.

	Position							P-value	
	Overall (n=453)	Public Health (n=38)	Planning (n=45)	Transportation/ Public works (n=65)	Economic/ Community Development (n=62)	Parks and Recreation (n=61)	Mayor/City Manager (n=45)		Municipal Legislator (n=134)
Barriers		(%)	(%)	(%)	(%)	(%)	(%)	(%)	
Limited staff									.002
Weak or no barrier	47.2	29.0	55.6	46.2	45.2	36.7	68.1	48.5	
Somewhat a barrier	32.4	26.3	35.6	33.9	30.7	41.7	25.5	31.3	
Strong barrier	20.4	44.7	8.9	20.0	24.1	21.6	6.4	20.2	
Lack of collaboration									.02
Weak or no barrier	58.6	32.2	51.1	60.0	57.6	62.3	68.8	65.4	
Somewhat a barrier	25.2	31.6	26.7	26.2	35.5	23.0	25.0	18.8	
Strong barrier	16.2	34.2	22.2	13.9	12.9	14.7	6.3	15.8	
Lack of political will									.04
Weak or no barrier	42.4	26.3	35.6	36.9	41.9	41.0	60.4	46.3	
Somewhat a barrier	28.0	26.3	24.4	29.2	30.7	22.9	25.0	31.3	
Strong barrier	23.5	47.4	40.0	33.9	27.4	36.1	14.6	22.4	
Opposition from the business community									.11
Weak or no barrier	57.6	52.6	42.2	44.6	59.0	60.7	54.2	67.9	
Somewhat a barrier	28.8	31.6	35.6	35.4	31.2	22.2	35.4	20.2	
Strong barrier	14.6	15.8	22.2	20.0	9.8	13.1	10.4	11.9	
Opposition from residents									.42
Weak or no barrier	9.6	52.6	68.9	46.2	64.5	60.7	56.3	63.4	
Somewhat a barrier	30.2	39.5	17.8	38.5	29.0	29.5	33.3	27.6	
Strong barrier	10.2	7.9	13.3	15.4	6.5	9.8	10.4	9.0	

Table 3

Multinomial logistic regression models* of the association between position and barriers to consideration of physical activity in decision making about community design and layout (n=453).

Barrier: Limited staff		
	<u>Somewhat vs. Weak or no barrier</u>	<u>Strong barrier vs. Weak or no barrier</u>
	<u>AOR* (95% CI)</u>	<u>AOR* (95% CI)</u>
<u>Position</u>		
Public health	1.0	1.0
Planning	0.63 (0.21–1.84)	0.11 (0.03–0.40)
Transportation/public works	0.73 (0.26–2.09)	0.32 (0.11–0.91)
Community/Economic development	0.73 (0.25–2.07)	0.36 (0.13–0.98)
Parks and recreation	1.15 (0.40–3.31)	0.42 (0.14–1.20)
Mayor/City manager	0.37 (0.12–1.10)	0.06 (0.02–0.26)
Municipal legislator	0.68 (0.26–1.80)	0.28 (0.11–0.70)
Barrier: Lack of collaboration		
	<u>Somewhat vs. Weak or no barrier</u>	<u>Strong barrier vs. Weak or no barrier</u>
	<u>AOR* (95% CI)</u>	<u>AOR* (95% CI)</u>
<u>Position</u>		
Public health	1.0	1.0
Planning	0.61 (0.21–1.77)	0.49 (0.16–1.46)
Transportation/public works	0.54 (0.20–1.46)	0.29 (0.10–0.86)
Community/Economic development	0.79 (0.30–2.06)	0.26 (0.09–0.80)
Parks and recreation	0.43 (0.16–1.19)	0.28 (0.10–0.83)
Mayor/City manager	0.40 (0.14–1.14)	0.10 (0.03–0.43)
Municipal legislator	0.33 (0.13–0.84)	0.28 (0.11–0.72)
Barrier: Lack of political will		
	<u>Somewhat vs. Weak or no barrier</u>	<u>Strong barrier vs. Weak or no barrier</u>
	<u>AOR* (95% CI)</u>	<u>AOR* (95% CI)</u>
<u>Position</u>		
Public health	1.0	1.0
Planning	0.74 (0.23–2.41)	0.69 (0.24–1.95)
Transportation/public works	0.88 (0.29–2.63)	0.61 (0.22–1.66)
Community/Economic development	0.76 (0.26–2.22)	0.39 (0.15–1.06)
Parks and recreation	0.55 (0.18–1.69)	0.54 (0.20–1.45)
Mayor/City Council	0.41 (0.14–1.27)	0.14 (0.05–0.44)
Municipal legislator	0.67 (0.25–1.80)	0.30 (0.12–0.75)

Barrier: Opposition from the business community

<u>Position</u>	<u>Somewhat vs. Weak or no barrier</u>	<u>Strong barrier vs. Weak or no barrier</u>
	<u>AOR* (95% CI)</u>	<u>AOR* (95% CI)</u>
Public health	1.0	1.0
Planning	1.46 (0.54–3.98)	1.90 (0.56–6.49)
Transportation/public works	1.37 (0.53–3.52)	1.68 (0.52–5.50)
Community/Economic development	0.83 (0.33–2.08)	0.59 (0.17–2.13)
Parks and recreation	0.69 (0.26–1.80)	0.75 (0.22–2.60)
Mayor/City Council	1.23 (0.47–3.20)	0.59 (0.15–2.27)
Other elected	0.44 (0.16–1.06)	0.56 (0.19–1.70)

Barrier: Opposition from residents

<u>Position</u>	<u>Somewhat vs. Weak or no barrier</u>	<u>Strong barrier vs. Weak or no barrier</u>
	<u>AOR* (95% CI)</u>	<u>AOR* (95% CI)</u>
Public health	1.0	1.0
Planning	0.30 (0.11–0.87)	1.38 (0.30–2.37)
Transportation/public works	0.92 (0.38–2.27)	2.57 (0.59–11.12)
Community/Economic development	0.55 (0.23–1.33)	0.70 (0.14–3.48)
Parks and recreation	0.52 (0.21–1.29)	1.13 (0.25–5.23)
Mayor/City Council	0.70 (0.28–1.78)	1.43 (0.30–6.85)
Municipal legislator	0.46 (0.20–1.05)	1.16 (0.28–4.70)

* Adjusted Odds Ratio (AOR): Adjusts for state, gender, education, live in the city in which you work and walk/bike for transportation in past week