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Development and implementation of a local government survey to measure community supports for healthy eating and active living

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ABSTRACT

The ability to make healthy choices is influenced by where one lives, works, shops, and plays. Locally enacted policies and standards can influence these surroundings but little is known about the prevalence of such policies and standards that support healthier behaviors. In this paper, we describe the development of a survey questionnaire designed to capture local level policy supports for healthy eating and active living and findings and lessons learned from a 2012 pilot in two states, Minnesota and California, including respondent burden, survey sampling and administration methods, and survey item feasibility issues. A 38-item, web-based, self-administered survey and sampling frame were developed to assess the prevalence of 22 types of healthy eating and active living policies in a representative sample of local governments in the two states. The majority of respondents indicated the survey required minimal effort to complete with half taking <20 min to complete the survey. A non-response follow-up plan including emails and phone calls was required to achieve a 68% response rate (versus a 37% response rate for email only reminders). Local governments with larger residential populations reported having healthy eating and active living policies and standards more often than smaller governments. Policies that support active living were more common than those that support healthy eating and varied within the two states. The methods we developed are a feasible data collection tool for estimating the prevalence of municipal healthy eating and active living policies and standards at the state and national level.

1. Introduction

In the United States, poor diet and physical inactivity are leading contributors to death and health loss (US Burden of Disease Collaborators, 2013). Over 75% of people do not consume adequate amounts of healthier foods such as fruits, vegetables, whole grains, and low fat dairy and 86% exceed fat, sugar, and salt intake recommendations (National Cancer Institute, Division of Cancer Control and Population Sciences, Applied Research Program, 2015; U.S. Department of Agriculture & U.S. Department of Health and Human Services, 2010). In 2013, about a third of adults were inactive and 79% did not meet aerobic and muscle-strengthening physical activity guidelines (HP2020 Objective Data by Topic Area, 2017a, 2017b).

Changing the places where people live to support healthy choices may be needed to improve diet and physical activity (Khan et al., 2009; Story et al., 2008; Frieden, 2010). Over 80% of the U.S. population lives in incorporated cities and towns with at least 2500 people (urban areas) (U.S. Census Bureau, 2013a) and expert bodies suggest that policies and standards enacted by local governments that govern these areas may be one way to support and promote healthy choices (Khan et al., 2009; Institute of Medicine and National Research Council, 2009). The remainder of the population lives in areas not governed by their own local municipal corporation, but may be administered as part of a township, parish, borough, county, city, canton, state, province, or tribal government. Although strategies that local governments can use to support healthier lifestyles have been recommended (Khan et al., 2009; Institute of Medicine and National Research Council, 2009) and the Centers for Disease Control and Prevention funds state and local health public actions across the U.S. to support healthy eating and active living, little is known about how prevalent policy supports are and no systems are available to systematically assess how changes occur over time. To better understand local policies and standards that support healthy eating and active living, we developed a survey of local governments, the Community Based Study of Supports for Healthy Eating and Active Living (CBSS).

CBSS was designed to assess the feasibility of collecting state and nationally representative data on local government policies and

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standards that support healthy eating and active living among residents. Policies and standards were defined in the survey as any written codes or standards, including regulations, ordinances, organizational policies, resolutions, and formal rules. Local governments include cities, boroughs, towns, and villages as defined by the U.S. Census Bureau (U.S. Census Bureau, 2016). We conducted a pilot study to address key methodological issues including 1) survey applicability to local governments of various population sizes; 2) response burden; 3) feasibility of collecting state and nationally representative data; and 4) impact of study recruitment methods and nonresponse follow-up on response rates. In this paper, we describe the development of the survey questionnaire, survey sample design and administration, findings, and lessons learned from a 2012 pilot in two states: Minnesota and California. Results from this pilot informed the development of a protocol used to conduct a national study of how supportive communities are of healthy eating and active living across the U.S (Onufrak et al., 2016; Carlson et al., 2016; Omura et al., 2017) and can be used in future state level follow up studies.

2. Methods

2.1. Development of a web-based survey questionnaire

A self-administered survey was developed based on prior literature reviews, (Khan et al., 2009; Institute of Medicine and National Research Council, 2009; Centers for Disease Control and Prevention, 2009; Freudenberg et al., 2010) scans of existing national policy databases, input from state health departments grantees (Centers for Disease Control and Prevention, 2016), and input from an expert panel of nine individuals. Experts were selected from 8 state and local governments and academic institutions due to their expertise in municipal policy, food and nutrition, physical activity, built environment, local government, city management, urban planning, and public health based on publication and work history with state and local health departments and national organizations such as the American Planning Association and National Association of County and City Health Officials. Many survey items were included in previous Institute of Medicine and CDC reports on strategies local governments can use to support healthy eating and active living (Khan et al., 2009; Institute of Medicine and National Research Council, 2009; Centers for Disease Control and Prevention, 2009). Survey item topics were selected based on the ability of a local government to implement the indicator, the degree to which the indicator is applicable across local governments of different sizes and geographic areas, the potential for seeing change in prevalence over time, and the feasibility of the collection of the indicator. Items were cognitively tested among city managers, planners, and individuals with similar job titles and duties. Initial burden testing estimated the instrument would require 60 min to complete.

The two-part 38-item survey inquired about 1) policies and standards local governments can implement to influence healthy eating and physical activity and 2) respondents' experiences in completing the survey (see Appendix A). In the first section, respondents were asked whether their local government had 22 types of policies and standards (yes/no) divided into three sub-sections: community-wide planning documents (n = 3 questions), physical activity (n = 8), and healthy eating (n = 11 questions). Additional follow-up questions were asked as needed (n = 10 questions). Response options included "I tried and could not obtain this information", or "I do not understand this question" to assess item burden and feasibility in post-hoc analyses. Respondents' experiences in completing the pilot survey was assessed via six items that asked about the types of local government staff who helped complete the survey, the level of effort and time required, and the potential utility of the findings from the survey.

The three questions on community-wide planning documents include whether the local government has 1) a comprehensive/general plan or 2) master plans related to health. The third question asks whether the local government has selected nutrition and physical activity related objectives in their planning documents among those with comprehensive or master plans. The physical activity section included whether the local government has: bike/pedestrian friendly design policies; a formal Complete Streets policy; a policy to install bicycle racks at public facilities; pedestrian friendly policies for new or retrofit development; policies or budget provisions to support activity in parks and recreation areas; a joint-use agreement to allow public use of school recreational facilities; a planning/zoning commission; and a bicycle and/or pedestrian advisory committee. In the healthy eating section, policies included whether the local government has pricing incentives to promote healthier food and beverage purchases, nutrition standards for foods sold in government buildings or worksites, incentives to encourage the availability of healthier foods at food retailers, policies related to transportation to food retailers, funding for Electronic Benefits Transfer (EBT) in farmers' markets, and a food policy council. Breastfeeding friendly policies were also included in this section.

2.2. Pilot survey sampling and administration methods

State health department grantees were solicited to participate in the survey (Centers for Disease Control and Prevention, 2016). California and Minnesota were selected based on their prior experience implementing policies and standards that support healthy eating and active living, their diversity of local governments in the state (e.g. various population sizes, rural vs. urban areas, townships versus local governments), and geographic diversity. The California and Minnesota state health departments provided letters of support for the survey.

A sample of 200 local governments from each pilot state were selected using the 2007 Census of Governments (U.S. Census Bureau, 2013b) for a total of 400 governments. This sample size was determined to account for expected response rates and yield 95% confidence intervals within ± 5 percentage points for all survey wide estimates. The sample size calculation assumed a design effect of 2.0 or less. In Minnesota, townships were excluded from the frame to avoid double-counting populations covered geographically by both a municipal and township government. Local governments within each state were classified into 5 strata based on total population per the Census of Governments and sampled with unequal probabilities of selection. Stratum 1 local governments included the most populated jurisdictions in the state and were selected with certainty into the sample to capture policies that impact the largest population centers. Sampling rates decreased with each successive stratum. Local governments in stratum 2 had a probability of selection of 0.67. Local governments in strata 3 and 4 had selection probabilities of 0.33, and 0.25, respectively. Additional local governments were allocated to stratum 5 to obtain a total sample size of 200. Simple random sampling was used to select local governments in strata 2–5.

The survey was conducted August 24th to November 2, 2012. City managers, planners, and administrators were identified as the best point of contact in the local government to identify healthy eating and active living policies and standards based on literature reviews and expert opinion. Each local government city manager, planner, or administrator was mailed a survey invitation and encouraged to seek input from other staff as needed such as representatives from parks and recreation, tax office, procurement, or transportation. Contact information for the target respondent was obtained from the Census of Governments and was verified via internet searches and contact calls and corrected as needed before sending the invitation packet. Sampled municipalities were each assigned a unique identifier which provided the key informant with security-enabled access to the web-based survey data collection system where they could complete and submit the questionnaire. The questionnaire could also be printed and mailed.

A split sample design with different follow-up intensity was used to determine the amount of follow up needed to achieve a 60–70% response rate. Half of the target respondents were assigned to the e-