MISSOURI FOUNDATION FOR HEALTH

Healthy Schools Healthy Communities

LET'S BUILD A HEALTHIER FUTURE

Community Survey

Findings Year 1

November 2014

Executive Summary

Background

Addressing childhood obesity is a national priority. Traditionally, obesity has been perceived as an individual issue for which personal accountability is the solution, but increasingly research has reinforced that society as a whole is responsible and there is a need for transformative approaches to the environments in which kids live, learn, and play. As part of a comprehensive effort, there is a growing awareness of the role of communication or the "messaging environments" in addressing obesity.

Healthy Schools Healthy Communities

The Missouri Foundation for Health created Healthy Schools Healthy Communities (HSHC) to help address childhood obesity in Missouri. The HSHC communication efforts aim to increase statewide and local awareness of the initiative as well as create a messaging environment that increases public support for, and consequently the feasibility of, policy and environmental changes that address obesity. This report presents the findings of a household survey aiming to establish a baseline and better understand community views on childhood obesity, government policies, and overall awareness of efforts to address childhood obesity, including the HSHC initiative.

Methods

A household mail survey was conducted across the 12 communities (13 school districts) engaged in the HSHC Initiative between August and October 2014 with a total of 2,000 randomly selected households. JSI Research & Training Institute, Inc. (JSI) worked with MFH and its communications contractor, GMMB, to develop the 28-question survey on views on childhood obesity, responsibility, strategies/solutions, awareness, and community engagement.

Overall descriptive analyses were conducted to describe respondent/household characteristics, views, awareness, community engagement, and ways they access information in their community. Additional analyses to identify differences in views and opinions across demographic groups were also conducted. Responses to open-ended question were reviewed and categorized for common themes.

Findings

Respondent Characteristics

A total of 586 surveys were analyzed resulting in a 35.3% overall response rate. Sixty-six percent of respondents were females, 78% identified as White/Caucasian, and the average age of respondents was 56. Twenty-eight percent of households had at least one child under the age of 18 – with an average of two kids per household and 70% of respondents were overweight (35%) or obese (35%).

Respondent Views

Respondents gave their opinions and views on the issue of obesity including whether their community should be involved in addressing the problem, reasons they think more people are overweight and obese, and how much responsibility certain groups of people should have for addressing childhood obesity.

Sixty-two percent believed that both individuals and communities need to work together to address obesity; 36% felt it is up to individuals and families to deal with on their own and 2% thought it was something that the whole community should deal with alone. Respondents were asked to rate how important it is for their community to be involved in addressing childhood obesity on a scale of 1 to 5. Fifty-eight percent rated a 4 or 5 indicating that it is important for their communities to be involved. Certain demographic groups were more likely to think that community involvement is important.

Respondents were asked about the reasons they think that more people are overweight or obese these days. Individual factors indicated as major reasons include people spending too much time in front of the TV, video games, and computer screens (81%) and their unwillingness to change (46%). Environmental factors indicated as major reasons include inexpensive and easily accessible fast food (64%), expensive healthy foods (54%), and too much advertising of unhealthy foods (44%).

The majority thought that parents/family (99%), individuals themselves (95%), and doctors and health care professionals (92%) have very large-large-moderate responsibility for addressing childhood obesity. Schools (87%) and the food industry (81%) also have responsibility. Between 53% and 59% thought that the community/local leaders and local, state and federal governments should have responsibility and almost half believed these entities have little/no responsibility.

Respondents were also asked to consider different government policies that can support, and increase, opportunities for healthy eating and physical activity. The majority of respondents were in favor of providing nutritional guidelines and information to people for making healthy choices (86%) and funding healthy community initiatives (83%). Most people also favored school-level policies, including requiring more physical activity in schools (84%), healthier school meals (80%), and healthier options in school vending machines (78%). Fewer people favored taxing the sale of unhealthy foods and drinks (20%) or limiting the types or amounts of foods and drinks people can buy (9%).

Awareness

Respondents were asked if they have heard of childhood obesity efforts, in general and more specific activities, in the past year. One-third of respondents reported that they have heard of general obesity efforts in the community in the past year with approximately 1 in 5 learning about these efforts via the media. Respondents were also asked about their awareness of thirteen specific efforts/activities associated with increased access to physical activity and healthy foods. The top three things that they

have heard about included Farmers Markets/CSAs (56%), Community Gardens (40%), and Menu Labeling at Restaurants (30%). Less than 10% knew about Food Deserts, Complete Streets, and Urban Sprawl. Overall, 90% of respondents have heard of at least one of these efforts.

Twenty-three percent of respondents reported that they have heard of HSHC. A higher percentage of households with children have heard of HSHC than households without children (28% vs. 21%) and about 25% of those who were overweight/obese have heard of HSHC, compared to 17% of those who were not overweight/obese. Respondents who have heard about HSHC were asked to write in a short description about HSHC; only 30% of the individuals who provided a response demonstrated an understanding of the initiative.

Community Engagement

Overall, 70% of respondents reported that living in their neighborhood gives them a sense of community. Seventy-five percent of respondents were willing to work with others to improve their community, 66% were willing to work with others to increase availability of healthy foods in the community, and 64% were willing to work with others to increase the number of places to be physically active in the community. Certain respondent groups were more willing to work with others to promote healthy eating and physical activity, specifically females, non-Whites, Blacks/African Americans, younger individuals, those with higher education levels, and individuals with children. Respondents also provided suggestions on ways to improve the community and promote healthy eating and physical activity.

Sixteen percent of respondents reported membership in neighborhood or community organizations such as book clubs, parent teacher associations, condo associations, or coalitions. Respondents indicated how often they accessed news/information from a variety of sources or media outlets. The majority (78%) accessed news from watching TV, 62% from the internet, 59% from the local radio, 45% via Facebook and 39% from the local newspaper.

Discussion

Individual vs. Societal Responsibility

Treatment and prevention of childhood obesity have typically been considered the primary responsibility of the individual children or their parents often obscuring the value of a comprehensive approach to address the problem. For example, the majority of survey respondents consider obesity to be the responsibility of parents/family and individuals themselves (86% and 72%). It is recommended that HSHC be framed as a societal responsibility to create an environment that supports individual behaviors. Messages that embrace personal responsibility as a value by placing priority on how the HSHC activities (e.g., environmental and regulatory actions such as improving school nutrition, menu labeling, and banning food marketing to children) are likely to support

responsible behavior would bridge the divide between views on personal and societal responsibility.

Relationship between Childhood Obesity and Environmental & Policy Changes

While survey data indicate that people were aware of specific efforts to improve healthy eating and physical activity (e.g., farmers markets/CSAs, community gardens, menu labeling, National School Food service guidelines, bicycle/pedestrian/park master plans, Walk to School/Safe Routes to Schools), only one-third of respondents reported being aware of childhood obesity efforts in the past year. These data suggest a disconnect and lack of understanding about how community, policy, and environmental level interventions are related to addressing childhood obesity. Marketing and messaging strategies should communicate how these specific efforts contribute to the comprehensive solution for addressing the many causes of childhood obesity. Building on the experience of previous public health issues, including alcohol, tobacco, and violence, success in addressing childhood obesity will be more likely to occur when obesity is considered a social responsibility that includes policy and environmental change strategies and HSHC communication efforts should consider this strategy to maximize buy-in.

Community Engagement

Best practice obesity prevention efforts suggest the importance of community engagement to ensure sustainability and to create a message of societal responsibility. Among those more willing to promote healthy eating and physical activity were non-Whites, younger individuals, and individuals with children. Communication efforts should target these individuals in an effort to increase community engagement.

Conclusion

The Missouri Foundation for Health created HSHC to help address childhood obesity in Missouri through policy and environmental changes that increase access to healthy foods and opportunities to be physically active. The framing of obesity needs to embrace personal responsibility as part of a societal approach that places priority on policy and environmental strategies. It is recommended that a messaging environment be created to increase public support for, and consequently the feasibility of, policy and environmental changes that address obesity.

Background

Addressing childhood obesity is a national priority. Over the past three decades, rates of childhood obesity have escalated rapidly. According to the 2011 National Survey of Children's Health (NSCH),[1] obesity rates for children ages 10 to 17, defined as a BMI > 95th percentile for age group, ranged from 9.9% to 21.7%. While there is increasing evidence that the national childhood obesity rate has started to stabilize, and even decline in some places and among certain groups, the rates remain high and disparities persist.[2] Poorer and less educated Americans experience higher rates of obesity than wealthier and more highly educated populations, and Blacks and Latinos suffer higher rates of obesity compared with Whites.[2]

Traditionally, obesity has been perceived as an individual issue for which personal accountability is the solution.[3] As such, parents and children have been assigned primary responsibility for reducing childhood obesity. Increasingly, research has reinforced that this is not the case, but that society as a whole – schools, communities, industry, government, not just children and parents – is responsible.[4] In fact, the Institute of Medicine (IOM) 2012 report *Accelerating Progress in Obesity Prevention: Solving the Weight of the Nation* called for transformative approaches to the environments in which kids live, learn, and play. Included in this call to action was the essential role of individuals and organizations across diverse sectors who alone have positive acceleration potential, but when combined will create synergies that can further accelerate progress in addressing childhood obesity.

As part of a comprehensive effort to address obesity, there is a growing awareness of the role of communication or the "messaging environments."[4] Research has found that people who think about obesity as solely an individual issue are less likely to support policies aimed at changing the environment (e.g., school, community, and industry regulations).[5] In comparison, those who recognize external factors within schools and communities that contribute to rising obesity rates are more supportive of policy change.[6] Heightening public and decision/policymaker attention on the many root causes, associated behaviors, solutions, and ways within which everyone can become involved is of increasing interest. Moreover, messages presenting obesity in broader societal terms (e.g., schools, communities, parents), may be effective in increasing public support for, and consequently the feasibility of, policy and environmental changes that address obesity (e.g., increased opportunities for healthy eating and physical activity).[4]

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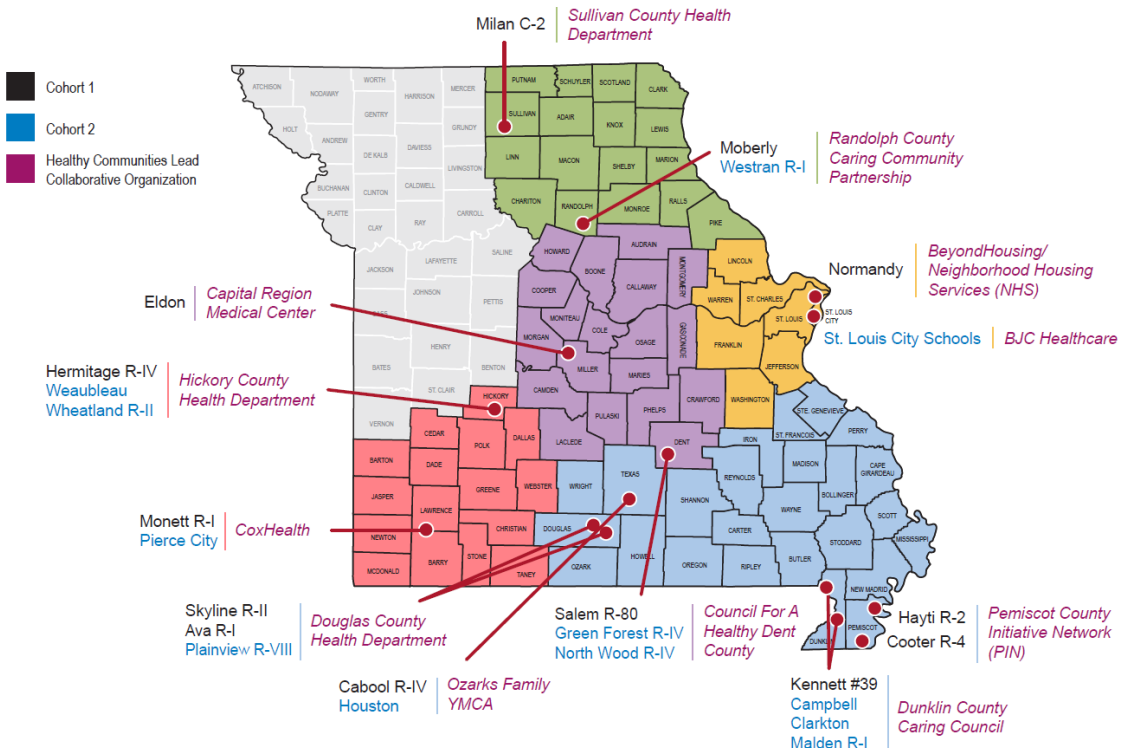
[1] National Survey of Children's Health, 2007. Overweight and Physical Activity Among Children: A Portrait of States and the Nation 2009, Health Resources and Services Administration, Maternal and Child Health Bureau (accessed May 24, 2011).
[2] Ogden CL, Carroll MD, Kit BK, Fegal KM. Prevalence of childhood and adult obesity in the United States, 2011-2012. *JAMA.* 2014; 311(8):808-814.
[3] Brownell KD, Kersh R, Ludwig DS, et. al. Personal responsibility and obesity: a constructive approach to a controversial issue. *Health Aff(Millwood).* 2010; 29(3); 379-387.
[4] IOM. Accelerating Progress in Obesity Prevention: Solving the Weight of the Nation. Washington DC: National Academies Press; 2012.
[5] Niederdeppe J, Shapiro M, Porticella N. Attributions of responsibility for obesity: narrative communication reduces reactive counterarguing among liberals. *Hum Commun Res* 2011; 37: 295-323.
[6] Couper MP. Web surveys: a review of issues and approaches. *Public Opin Quart* 2000; 64: 464-494.

Healthy Schools Healthy Communities

Missouri Foundation for Health created Healthy Schools Healthy Communities (HSHC) to help address childhood obesity in Missouri. HSHC invests in local efforts—driven by schools and community organizations—to create healthier opportunities where kids live, learn, and play. It empowers communities to build a healthier future for children and families across Missouri by bringing together schools, community organizations, businesses, parents and residents to identify and push for changes that increase access to healthy food and physical activity. The HSHC communication efforts aim to increase statewide and local awareness of the initiative as well as create a messaging environment that increases public support for, and consequently the feasibility of, policy and environmental changes that address obesity.

Healthy Schools Healthy Communities



*Note: Cohort 2 school districts were not included in the Year 1 community survey.

Report Purpose

This report presents the findings of a household survey aiming to establish a baseline and better understand community views on childhood obesity, government policies, and overall awareness of efforts to address childhood obesity, including the HSHC initiative. The information will be used to guide the development and implementation of the HSHC communication strategies.

Methods

A household survey was conducted across the 12 communities (13 school districts) engaged in the HSHC Initiative between August and October 2014 to inform ongoing communication planning and implementation efforts. A total of 2,000 households were randomly selected. The distribution of sampling was proportionate to the size of districts/communities, with three groupings:

1) 1400 (70%) for Ava, Cabool, Eldon, Hayti, Kennett, Milan, Moberly, Monett, Salem;
2) 200 (20%) for Cooter, Hermitage, Skyline; and
3) 400 (10%) for Normandy.

Measures

JSI Research & Training Institute, Inc. (JSI) worked with MFH and its communications contractor, GMMB, to develop the survey. Questions aimed to increase understanding of community views on childhood obesity, government policies, and overall awareness of efforts to address childhood obesity, including the HSHC initiative. The final draft consisted of 28 questions on views (e.g., opinion on whether obesity was an individual or societal issue, reasons why people are overweight and obese, the responsibility of different sectors in addressing obesity, policies they favor); awareness (e.g., if they have heard of any efforts to address childhood obesity, efforts to increase access to healthy eating and physical activity, or specifically about the Healthy Schools Healthy Communities initiative); community engagement (e.g., willingness to work with others, association with community organizations); and how they access information in their community. Additional questions on demographic characteristics included race, level of education, height and weight, household income, participation in SNAP benefits, and number of children living in the home.

Survey Methods

Selected households received a pre-notification postcard in the mail. A week after (beginning of August 2014), initial surveys were mailed with a $5 up front incentive. A second survey was sent approximately two weeks later. Finally, a reminder letter was sent two weeks after the second survey with an announcement for a prize drawing of one of three $250 gift card incentives for anyone returning a completed survey.

Analysis

Overall descriptive analyses were conducted to describe respondent/household characteristics, views, awareness, community engagement, and how they access information in their community. The proportions of respondents who identified with each response category for each question were calculated. Additional analyses to identify differences in views and opinions across demographic groups were also conducted, with chi-square tests used to determine statistically significant differences at the $p<0.05$

level (borderline significant results at p<0.10 are also presented). All data were conducted using SAS 9.2 (SAS Institute Inc., Cary, NC). Finally, responses to open-ended question were reviewed and categorized for common themes.

Findings

Of the 2000 addresses, 338 were invalid or returned to sender. A total of 586 surveys (of the eligible 1,662 households) were analyzed resulting in a 35.3% overall response rate. The response from each of the three groups (Table 1) was representative of the distribution of the initial sampling (70%, 20%, and 10% respectively). Seventy-two percent (421) were from the Main Area, 18% (104) were from Normandy, and 11% (64) were from Small Communities.

Table 1. Area Response Rates

Communities	Sample Size	Invalid/Returned	Valid Surveys	Completed
Main Area (Ava, Cabool, Eldon, Hayti, Kennett, Milan, Moberly, Monett, Salem)	1,400	209	1,191	421 (35%)
Small Communities (Cooter, Hermitage, Skyline)	200	44	156	64 (41%)
Normandy	400	85	315	104 (33%)
Overall	**2,000**	**338**	**1662**	**589 (35%)**

Respondent Characteristics

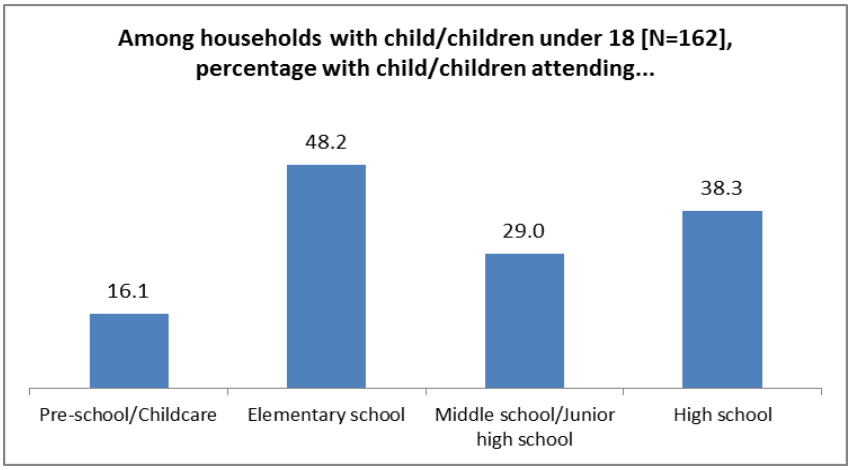
Table 2 describes the characteristics of respondents and their households. Sixty-six percent of respondents were females and 34% were males. Over three-quarters (78%) identified as White/Caucasian, 17% Black/African American, and 3% American Indian/Alaska Native and about 2% other (Asian, Pacific Islander, other). Overall, 3.8% were Hispanic/Latino. The average age of respondents was 56 (range: 19-94; SD: 16.6). By age group, 42% were between 45-64 years old, 34% were 65 years or older, 23% were between 25 and 44 years old, and 2% were between 18 and 24 years old.

Thirty-nine percent completed high school or less, 37% had some college or vocational training, and 23% completed college or graduate/professional school. Fifty percent reported an annual household income of less than $40,000, 14% between $40,000 and $59,999, 15% of households had an income of $60,000 or more, and 21% did not report. Approximately 20% of households received SNAP benefits in the past year. Over two-thirds (68%) own/are buying the home they currently live in (32% renting). On average, respondents lived at their current address for 12 years (range <1-56 years); although the median number of years was 7 indicating that half of respondents lived at

their current address for over 7 years and half for fewer than 7 years.

An average of 2 people lived in each household including the respondent. Twenty-eight percent of households had at least one child under the age of 18 – with an average of two kids per household. The average age of children was 9 (SD=4.7), with the youngest in the household being 7 years and oldest being 11 years old. Of those households with children under the age of 18 (162), 48% had at least one child in elementary school, 38% in high school, 29% in middle school, and 16% in pre-school/childcare (Figure 1).

Figure 1. Reported Grade Level of Respondents' Children



Survey respondents were also asked to report their height and weight, which were used to calculate Body Mass Index (BMI). Seventy-percent of respondents were overweight (35%) or obese (35%), 28% were healthy weight, and 1% underweight (Figure 2). Among those respondents from a household with children, 75% were overweight (38%) or obese (37%), compared to 69% (34% overweight and 35% obese) among those with no children.

Figure 2. Weight Classifications

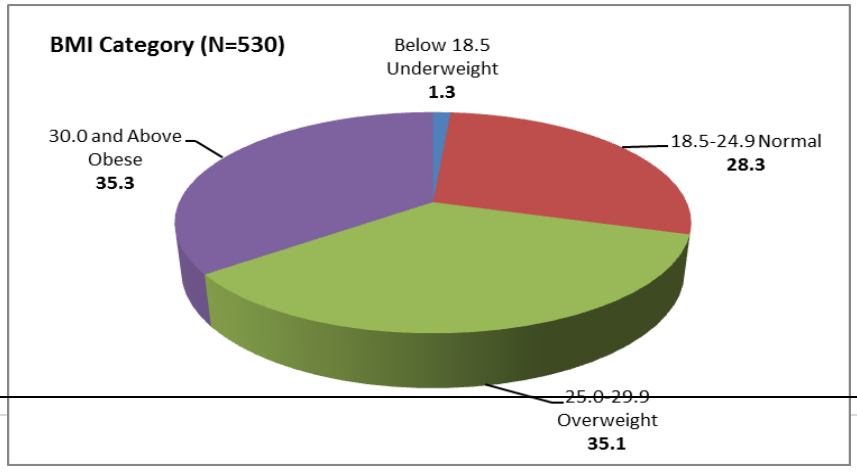


Table 2. Respondent Characteristics

	n*	Percent
Gender		
Male	192	33.8
Female	376	66.2
Race/ethnicity		
White/Caucasian	456	77.8
Black/African American	98	16.7
American Indian/Alaska Native	19	3.2
Other (Asian, Pacific Islander, other)	14	2.4
Hispanic/Latino	20	3.8
Age Group		
18-24 years	12	2.2
25-44 years	124	22.8
45-64 years	226	41.5
65 year	182	33.5
Education		
Less than 9th grade	22	3.9
Some high school	40	7.1
Completed high school	159	28.2
Some college or vocational training	210	37.3
Completed college or university	91	16.2
Completed graduate or professional school	41	7.3
Annual Household Income		
Less than $20,000	160	27.3
$20,000-$39,999	133	22.7
$40,000-$59,999	83	14.2
$60,000-$89,999	50	8.5
$90,000 or more	37	6.3
I would prefer not to say	123	21.0
Received SNAP benefits in the past year	113	20.4
Own/Rent Home Currently Living in		
Rent	177	32.2
Own/buying	372	67.8
Household Composition - At least 1 child under age 18	162	27.6
Of households with children, percent with a child attending:		
Pre-school/Childcare	26	16.1
Elementary school	78	48.2
Middle school/Junior high school	47	29.0
High school	62	38.3

*n=numerators, total numbers may not add up to total number of surveys returned (586), due to missing response to specific questions

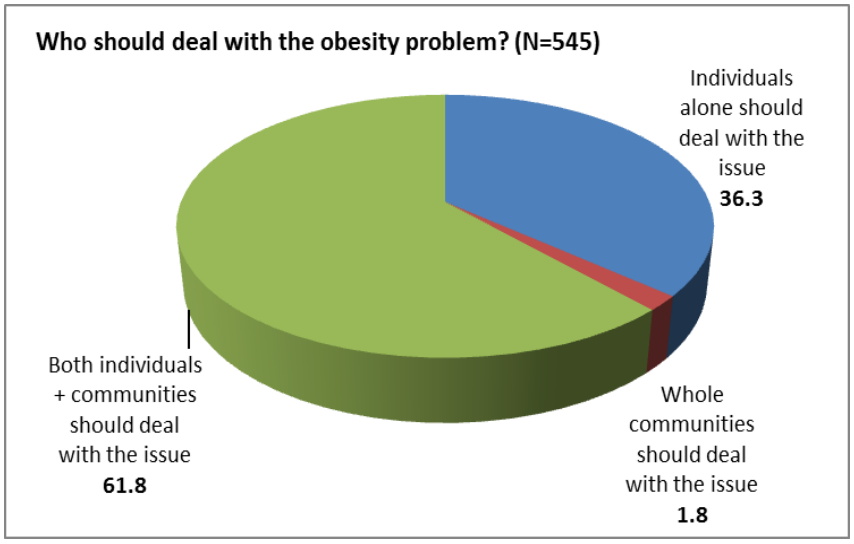
Respondent Views

Respondents gave their opinions and views on the issue of obesity including whether their community should be involved in addressing the problem, reasons they think more people are overweight and obese, and how much responsibility certain groups of people should have for addressing childhood obesity.

Views on the Role of Community in Addressing the Childhood Obesity

Sixty-two percent believed that both individuals and communities needed to work together to address obesity; 36% felt that maintaining a healthy weight is up to individuals and families to deal with on their own. Only 2% thought that it is something that the whole community, including schools, government, health care providers, and the food industry should deal with alone (Figure 3).

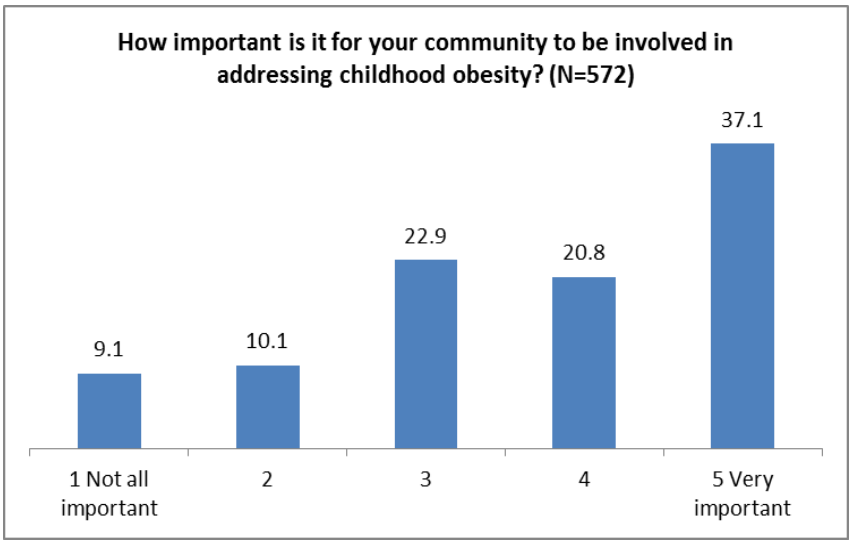
Figure 3. Role of Community in Addressing Obesity



People were asked to rate how important it is for their community to be involved in addressing childhood obesity on a scale of 1 to 5. Fifty-eight percent rated a 4 or 5 indicating that it is important for their communities to be involved (Figure 4).

- Certain demographic groups were more likely to think that community involvement is important (4 or 5 rating) , specifically 63% of females (vs. 48% of males), 71% of non-Whites/Caucasians (vs. 54% of Whites), and 76% of Blacks/African Americans (vs. 54% non-Blacks) (all $p<0.05$). Sixty-six percent of those who had a college degree or higher rated a 4 or 5 compared to 56% of those with less than a college degree ($p<.05$). Approximately 59% of people who were overweight/obese cited that community involvement is important compared to 55% of those who were not, though not statistically significant. There were no differences across age groups or among households with or without children.

Figure 4. Importance of Community Involvement



Views on Reasons Contributing to Overweight or Obesity

There are a variety of factors at both the individual and environmental level that can contribute to the problem of obesity. Respondents were asked about the reasons they think that more people are overweight or obese these days (Table 3). Individual factors that respondents indicated as major reasons for why people are overweight and obese include people's spending too much time in front of the TV, video games, and computer screens (81%) and their unwillingness to change (46%). Environmental factors that respondents indicated as major reasons for why people are overweight and obese include inexpensive and easily accessible fast food (64%), expensive healthy foods (54%), and too much advertising of unhealthy foods (44%).

Table 3. Respondents reported reasons for overweight/obesity

Reasons	N*	Major	Minor	Not a Reason
		%	%	%
Too much time in front of TV, video games, and computer	576	81.4	17.0	1.6
Fast food is inexpensive and easy to find	574	64.3	28.8	7.0
Healthy foods are expensive	578	53.8	34.1	12.1
People do not want to change	572	45.5	46.0	8.6
Too much advertising of unhealthy food, snacks, and drinks	576	44.4	40.3	15.3
People do not know how to control their weight	573	41.0	43.8	15.2
People do not have enough information about what is in food	574	37.6	41.5	20.9
Too much unhealthy food, snacks, and drinks for sale in schools	573	32.5	46.4	21.1
Not enough safe places for people to be physically active	575	24.2	39.5	36.4
People do not have time to prepare healthy food	576	22.9	43.9	33.2
People do not have time to be physically active	578	20.2	46.4	33.4

Notes: In *italics* are individual-level factors that can contribute to obesity; *N= number of respondents with a response to question.

Figures 5 and 6 show the combined percentages of respondents indicating each factor as either a major or minor reason or not a reason at all for the growing obesity problem.

Figure 5. Individual-level reasons for overweight/obesity

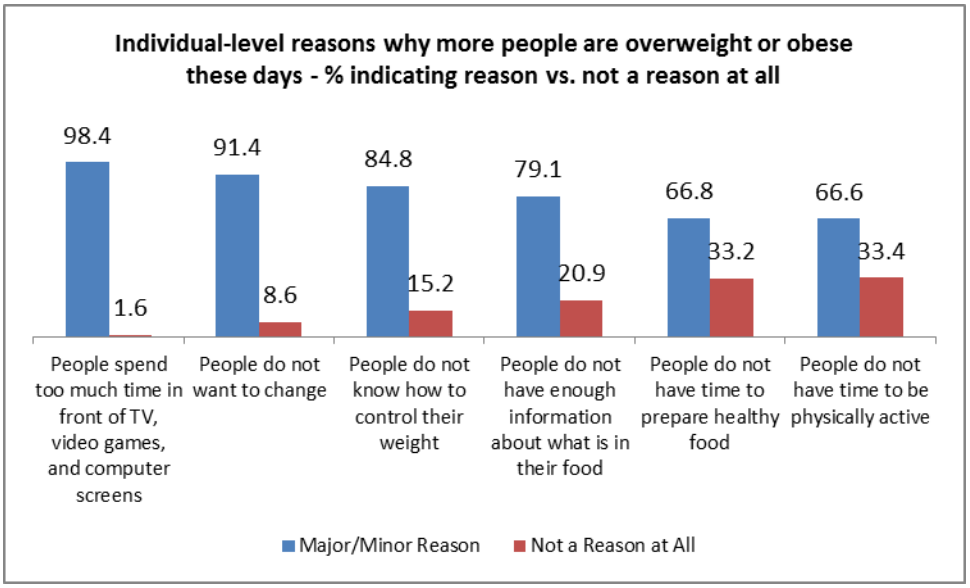
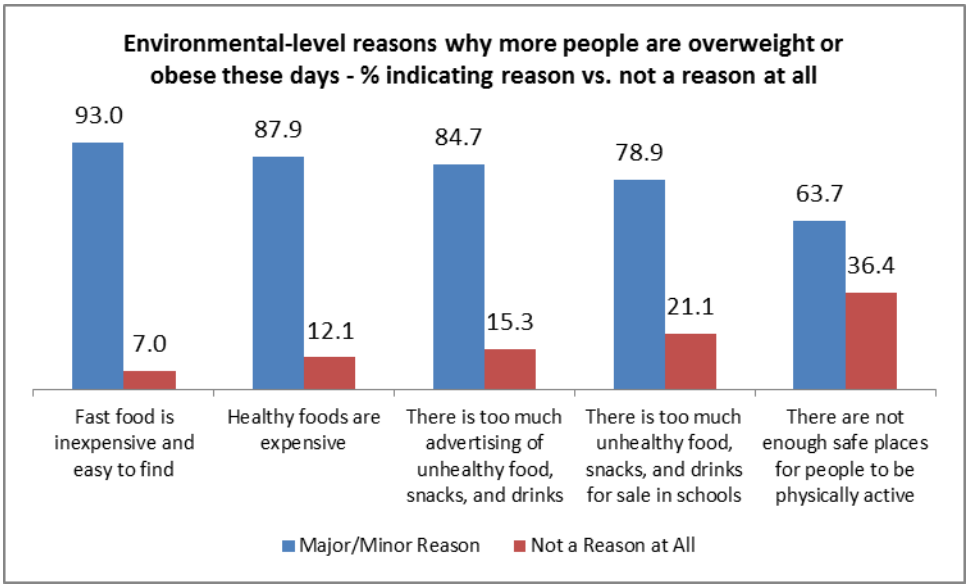


Figure 6. Environmental-level reasons for overweight/obesity



Views on Who is Responsible for Addressing Childhood Obesity

Respondents were asked to indicate who had responsibility for addressing childhood obesity (Table 4). The majority thought that parents/family (99%), individuals themselves (95%), and doctors and health care professionals (92%) have very large-large-moderate responsibility. Schools (87%) and the food industry (81%) also have responsibility. People thought that health insurance companies should be responsible (very large/large-20%; moderate 47%). Between 53% and 59% thought that the community/local leaders and local, state and federal governments should have responsibility and almost half believed these entities have little/no responsibility. Less than half (48%) of respondents believed employers have any responsibility for addressing childhood obesity (Figure 7).

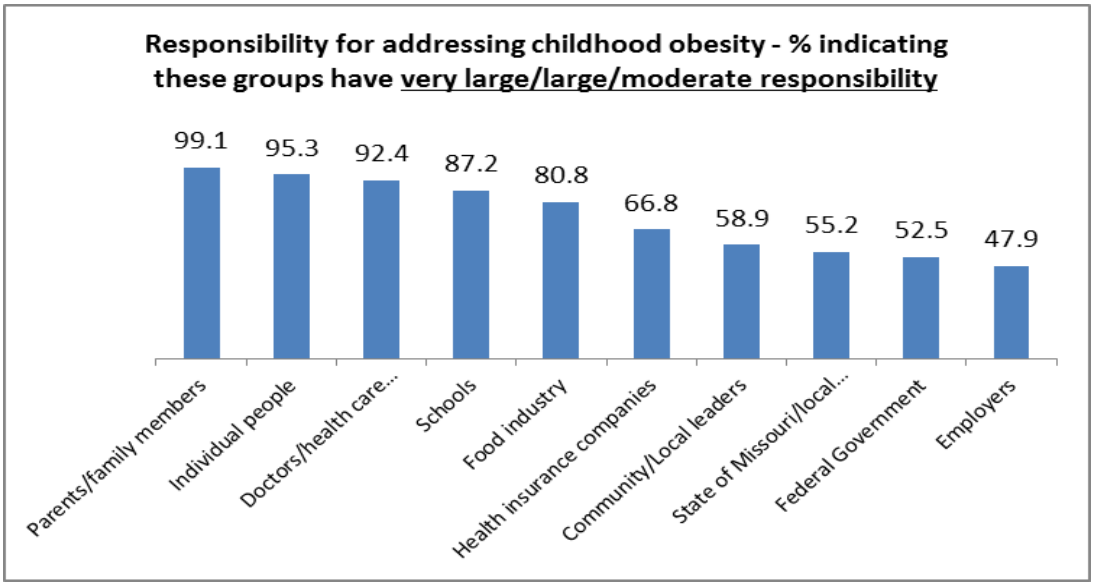
An additional analysis compared the views of overweight/obese and non-overweight/obese respondents. Overweight/obese individuals were just as likely to place responsibility on individuals, parents, and families as those who were not overweight/obese. However, those who were overweight/obese were more likely than non-overweight/obese individuals to place higher responsibility on the food industry (41% overweight/obese vs. 34% not overweight/obese, though not statistically significant), federal (18% vs. 12%) ($p=0.06$), state and local governments (20% vs. 12%) ($p<0.05$), community leaders (13% vs. 9%, not statistically significant), and employers (10% vs. 5%) ($p<0.05$) for addressing obesity.

Table 4. Responsibility for Addressing Childhood Obesity

Sector	Amount of Responsibility			
	N*	Very large/large	Moderate	Little/none
		%	%	%
Parents and other family members	578	85.5	13.7	0.9
Individual people	578	72.3	23.0	4.7
Doctors and other health care professional	578	44.5	47.9	7.6
Schools	577	39.9	47.3	12.8
The food industry	573	39.6	41.2	19.2
Health insurance companies	575	20.0	46.8	33.2
State of Missouri and local governments	576	18.1	37.2	44.8
The Federal Government	572	17.0	35.5	47.6
Community/Local leaders	576	12.0	46.9	41.2
Employers	576	8.3	39.6	52.1

Notes: *N= number of respondents with a response to this question.

Figure 7. Sector Responsibility for Addressing Childhood Obesity



Views on Government Policies to Address the Obesity Problem

Policies and environmental changes can have far reaching impact on obesity prevention. Respondents were asked to consider different government policies that can support, and increase, opportunities for healthy eating and physical activity (Table 5). The majority of respondents were in favor of providing nutritional guidelines and information to people for making healthy choices (86%) and funding healthy community initiatives (83%). Most people also favored school-level policies, including requiring more physical activity in schools (84%), healthier school meals (80%), and healthier options in school vending machines (78%). Seventy-three percent favored incentives to the food industry to produce healthier foods. Roughly two-thirds (65%) were in favor of requiring restaurants to post calorie information on menus and half (54%) were in favor of banning advertisements for unhealthy foods aimed at children. Fewer people favored taxing the sale of unhealthy foods and drinks (20%) or limiting the types or amounts of foods and drinks people can buy (9%).

Overweight/obese respondents were more likely than non-overweight/obese respondents to be in favor of government policies to address obesity, including requiring more physical activity in schools (87% vs. 79%, respectively) ($p<0.05$), funding for community initiatives (86% vs. 79%) ($p=0.07$), incentives for the food industry to produce healthier foods (75% vs. 67%) ($p=0.07$), requiring calorie information on restaurant menus (67% vs. 59%) ($p=0.07$), and taxation on unhealthy foods and drinks (21% vs. 16%) though not statistically significant.

Table 5. Government policies

	N*	% In Favor
Providing nutritional guidelines and information to people about how to make healthy choices about diet and physical activity	579	85.8
Requiring more physical activity in schools	573	83.9
Funding healthy community initiatives (e.g., farmers markets, bike paths)	572	83.0
Requiring healthier school meals	576	79.9
Requiring healthier foods and beverages in school vending machines	578	78.2
Providing incentives to the food industry to produce healthier foods	575	72.7
Requiring restaurants to put calorie information on menus	579	65.1
Banning advertisements for unhealthy foods aimed at children	573	53.9
Placing a tax on the sale of unhealthy foods and drinks	574	19.5
Limiting the types or amounts of foods and drinks people can buy	578	8.7

Notes: *N= number of respondents with a response to this question.

Awareness

Respondents were asked if they have heard of childhood obesity efforts, in general and more specific activities, in the past year.

Awareness of General Obesity Efforts and Source of Information

One-third (184/557) of respondents reported that they have heard of general obesity efforts in the community in the past year (54% have not and 13% did not know). About 1 in 5 (22%) learned about these efforts via the media, 15% from local schools, and <5% from other sources. Not all respondents indicated a source (Table 6).

Table 6. Source of General Childhood Obesity Information

Source	% Heard From (N=184)
The media	22.3
The local school	14.1
Other	4.9
Your health care provider	3.8
Community-based organization (e.g. YMCA, Boys & Girls Club)	2.7
Local childcare/daycare facility	1.1
Your church or faith-based organization	0.5

Awareness of Specific Activities

Thirteen efforts associated with increased access to physical activity and healthy foods were listed. All respondents were asked about their awareness of these efforts in the past year (Table 7). The top three things that they have heard about included Farmers Markets/CSAs (56%), Community Gardens (40%), and Menu Labeling at Restaurants

(30%). About one-quarter of respondents were also aware of the National School Food Service Guidelines (27%), Bicycle/Pedestrian/Park Master Plans (27%), and Walk to School/Safe Routes to School (23%). Twenty percent have heard of taxing sugar sweetened beverages and EBT/SNAP acceptance at farmers markets. About 12% were aware of Healthy Restaurant/Retailer programs and physical activity prescription from doctors. Less than 10% knew about food deserts, complete streets, and urban sprawl. Overall, 90% (525/586) of respondents have heard of at least one of these efforts.

Table 7. Awareness of Specific Activities

Specific Activity	% Who were Aware (N=586)
Farmers Markets/Community Supported Agriculture (CSA)	55.5
Community Gardens	39.9
Menu Labeling at restaurants	30.4
National School Food Service Guidelines	27.1
Bicycle/Pedestrian/Park Master Plans	26.8
Walk to School/Safe Routes to School	23.4
Taxing sugar sweetened beverages (e.g., soda or pop)	21.3
Farmers markets accepting EBT/SNAP benefits	19.6
Healthy Restaurant/Retailer programs	12.0
Doctors writing physical activity prescriptions to patients	11.8
Food Deserts	8.9
Complete Streets Designs	5.6
Urban Sprawl	5.6

Awareness of Healthy Schools Healthy Communities (HSHC)

All respondents were asked if they had heard of HSHC. Twenty-three percent of respondents (130/554) reported that they have heard of HSHC, versus 64% who have not, and 13% who did not know. A higher percentage of households with children have heard of HSHC than households without children (28% vs. 21%) ($p=0.08$). About 25% of those who were overweight/obese have heard of HSHC, compared to 17% of those who were not overweight/obese ($p<.05$). Also, 29% of those renting their home compared to 21% of those who own/buying were aware of HSHC ($p=0.07$); and 35% of those with reported household incomes of $60,000 or more were aware of HSHC compared to between 22% and 26% of those with lower incomes ($p=0.09$). There were no differences by gender, age, or race.

Respondents who have heard about HSHC were asked to write in a short description about HSHC; only 30% (33 of 105) of the individuals who provided a response demonstrated an understanding of the initiative. For example, they described HSHC as an initiative to raise awareness of healthy lifestyles/environments, something that the

community is working on together, and an effort to increase opportunities for physical activity and healthy eating.

"*Raising awareness of healthy lifestyles and encouraging people to work together to be healthy."*

"It's a group of community leaders working together to end childhood obesity."

"Joint effort between school and community leaders to create a healthy environment for students both in and out of schools."

"It's developed and administered by the local school and health department to provide access to healthier foods and physical activity."

"It's a program designed to encourage healthier lifestyles through healthy eating, increasing physical activity, and educating families on healthier choices."

Many individuals provided a response that did not demonstrate an understanding of the initiative. Responses frequently mentioned included statements that that they had heard of it but failed to provide detail, that it was associated with President Obama, a government program, or that it included the changes in the National School Lunch Program. Others provided comments on their opinion of what they thought it was.

"The previous menus were high in nutrition required for alertness, keeping them full through the afternoon and brain function. Now no."

"*I am not sure what they mean, but I have heard of it."*

"Kids don't get fat from school food. I have never seen hungry kids in my life until I moved to [community]. The kids here only have school lunch. That hurts so bad I give my food and my family food."

"Kids should have healthy meals (coke and cupcakes are not healthy) while in school."

"Kids are starving with what they are having to eat at schools to meet guidelines."

"Obama started this program, more physical activity. Less sugar, salt and fatty foods."

"Would be beneficial to envision this, but not easily attainable. If work is involved getting this, most people avoid it."

"I saw this on a TV commercial."

"More government interference in our lives and not needed or wanted!!"

Community Engagement

Overall, 70% of respondents reported that living in their neighborhood gives them a sense of community. Respondents indicated whether they agreed or disagreed on statements related to their willingness to engage with others in the community to promote healthy eating and physical activity (Table 8).

- 75% of respondents were willing to work with others to improve their community.
- 66% of respondents were willing to work with others to increase availability of healthy foods in the community.
- 64% of respondents were willing to work with others to increase the number of places to be physically active in the community.

Approximately 52% of respondents indicated agreement and willingness to work with others in all three areas above versus 48% of others with low/lower willingness. Certain respondent groups were more willing to work with others to promote healthy eating and physical activity, specifically 54% of females (vs. 47% of males) ($p<0.10$), 65% of non-Whites (vs. 48% of Whites) ($p<0.05$), and 65% of Blacks/African Americans (vs. 49% of non-Blacks) ($p<0.05$). Younger individuals were more willing to be involved than older individuals (64% of those under 40, 53% age 40-59, and 44% age 60+) ($p<0.05$). Those renting their home (62%) were more willing to be involved than those who own/buying (47%) ($p<0.05$). Those with higher education levels were more willing to be involved (59% some college, 54% college, or 55% graduate) compared to those with high school or less (46% high school and 40% of those with some high school or less), and individuals with children (65%) were more willing to be involved than those without (47% without) ($p<0.05$).

Table 8. Community Engagement

	N*	% Agree
I would be willing to work together with others on something to improve my community	530	75.3
I would be willing to work with others to increase the availability of healthy foods in my community	520	65.8
I would be willing to work with others to increase the number of places available to be physically active in my community	514	63.8
Living in my neighborhood gives me a sense of community	505	69.5

Notes: *N= number of respondents with a response to this question; % agree includes somewhat/strongly agree

Reasons for Unwillingness to be Involved

Respondents were asked to explain their answers. Common themes for why they were unwilling included:

- No interest;
- The belief that healthy eating and physical activity are individuals' responsibility, not the community's;
- Inability to help due to old age or ill-health;
- Lack of transportation;
- Uncertainty about ability or skill set to effect change;
- Limited time and other volunteer commitments;
- Perceived increased government involvement/taxes as a result of efforts; and
- Belief that there are already available healthy foods and places to be physically active in the community.

Reasons for Willingness to be Involved

Common themes for why they were willing to engage in community efforts included:

- Recognition of the importance of healthy eating and physical activity;
- The need for awareness/education about the issues; and
- Relevancy of the effort/projects to their interests.

Suggestions on Ways to Improve the Community

People also provided some suggestions on ways to improve the community and promote healthy eating and physical activity, including:

- Increasing education/awareness that healthy eating and physical activity is important for health (e.g. using word of mouth to spread message, holding community service day);

- Promoting healthy eating by increasing 1) awareness/education about healthy foods (e.g. classes to teach healthier cooking methods at home); 2) availability of healthy foods in the community (e.g. creating more community gardens/farmers markets or better utilizing existing ones, offering healthier foods at grocery stores, restaurants, and food pantries); and 3) affordability of healthy foods in the community.

- Promoting physical activity by 1) providing more opportunities and places for physical activity in the community (e.g. exercise tracks/trails, parks, larger parks, swimming pools, recreation centers, leagues or programs); 2) increasing the number of affordable places to be physically active (e.g. open gyms, reduced membership costs (e.g., YMCA); 3) supporting existing places, such as the

YMCA; 4) ensuring safety and cleanliness of neighborhood/community and places for physical activity.

Some people also noted that it is important for efforts to be cost effective or free; have little or no government involvement; and ensure that improvements are inclusive and benefit everyone.

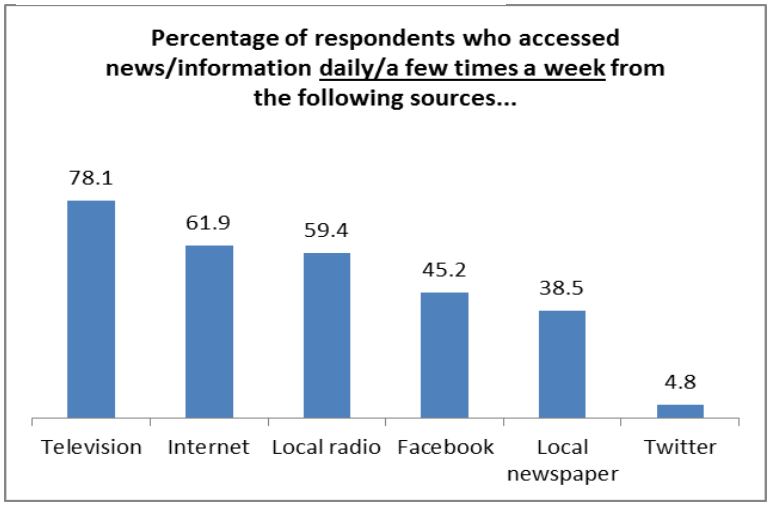
Community Involvement

In terms of actual community involvement, 16% reported membership in neighborhood or community organizations such as book clubs, parent teacher associations, condo associations, or coalitions. Examples of some organizations mentioned included church, parent teacher groups, PTO, PTA, arts/music/theater groups, book club, booster club, YMCA, neighborhood/homeowner's associations, library, community gardens, and others.

Media/Technology – Ways to Reach the Community

Respondents indicated how often they accessed news/information from a variety of sources or media outlets (Figure 8). The majority (78%) accessed news from watching TV, 62% from the internet, 59% from the local radio, 45% via Facebook and 39% from the local newspaper. Less than 5% accessed news via Twitter.

Figure 8. Accessing Information



Facebook Users

Of the 45% of respondents who use Facebook, certain demographic groups were more likely to use the site a few times a week or daily for their source of news or information, specifically 51% of females (vs. 34% of males, $p<0.01$), 64% of those under age 40 (vs. 49% of those aged 40-59 and 31% of those aged 60+, $p<0.0001$), 59% of those with a college education or higher (vs. 41% of those without college, $p<0.01$), and 64% of

those with a child under 18 living in the household (vs. 37% of those without a child under 18 living in the household, p<0.0001). There were no significant differences in usage of Facebook by race (46% of Non-Whites vs. 45% of Whites) or by those respondents who rent (53%) or own/buying their home (42%).

Newspaper Readers

Certain respondent groups were more likely to read the local newspaper a few times a week or daily for their source of news or information, specifically 53% of those aged 60+ (vs. 24% of those under 40 and 31% of those age 40-59, p<0.0001), and 43% of those without a child under 18 living in the household (vs. 28% of those with a child under 18 living in the household, p<0.01). Similar percentages of males (39%) and females (38%) as well as those with a college education (40%) and those without college (37%) read the local newspaper a few times a week or daily. There were also no differences by race (47% of Non-Whites vs. 37% of Whites) or by those respondents who own/buying their home (41%) or renting (32%).

Discussion

Childhood obesity is a national concern and widely discussed problem. In an effort to develop and implement on-going HSHC communication efforts, a survey was conducted in the participating communities to better understand community views on childhood obesity and government policies, and overall awareness of efforts to address childhood obesity, including the HSHC initiative.

Individual vs. Societal Responsibility

Treatment and prevention of childhood obesity have typically been considered the primary responsibility of the individual children or their parents often obscuring the value of a comprehensive approach to address the problem. Until recently, American approaches to improving diet, increasing physical activity, and reducing obesity have largely focused on educational efforts imploring individuals to change their behavior. This focus on individualism is consistent with our culture and politics[7] and has been emphasized in government reports such as the *1979 Healthy People* report.[8] Although there is increasing support for interventions that blend a focus on the individual choices and societal responsibility, the way obesity is viewed likely limits understanding in ways that may influence the ability to address it successfully.[9]

[7] Leichter HM. "Evil habits" and "personal choices": assigning responsibility for health in the 20th century. Milbank Q. 2003;81 (4):603–26.
[8] U.S. Department of Health, Education, and Welfare, Office of the Assistant Secretary for Health and Surgeon General. Healthy people: the surgeon general's report on health promotion and disease prevention. Washington (DC): U.S Government Printing Office; 1979
[9] Dorfman L, Wallack L. Moving nutrition upstream: the case for reframing obesity. J Nutr Educ Behav 2007;39:S45-50.

Contemporary advances in public health have resulted in comprehensive approaches, yet there is a remarkable difference between childhood obesity and other health and safety issues where parents, healthcare, the legal system, and industry all work together. For example, to protect children as vehicle passengers, pediatricians and other health care professionals educate parents on the type of car seat and positioning of the child (front vs. rear facing), instructions are posted on the car seat, warnings of the danger of airbags are posted inside cars, and car seats are legally required. In the case of obesity, mirroring perceptions across the country, the majority of survey respondents consider obesity to be the responsibility of parents/family and individuals themselves (86% and 72%, respectively, believe they have a very large/large responsibility). Only 45% feel doctors and other health care professionals bear responsibility, 40% feel schools are responsible, and 40% feel the food industry has a large/very large responsibility. Almost half reported that community/local leaders and local, state, and federal governments have little/no responsibility (41%, 45%, and 48%, respectively). These findings are in contrast to the recommended comprehensive approach.

While our survey found respondents feel that individuals and communities need to work together to address childhood obesity (64% vs. 36%) and that it is important or very important for their community to be involved (58%), the most highly favored policy (86%) emphasizes individual responsibility by suggesting nutritional guidelines and information should be given to people about how to make healthy choices about diet and physical activity. While some environmental approaches were favored (e.g., requiring more physical activity in schools (84%) and funding healthy community initiatives (83%)), regulatory approaches such as banning advertisements for unhealthy foods aimed at children (54%), placing a tax on the sale of unhealthy foods and drinks (20%), and limiting the types or amounts of foods and drinks people can buy (9%) were viewed less favorably. It appears the perception of community involvement is largely centered on providing education and encouraging individual behavior change and less on collective action involving environmental and regulatory approaches. This focus may challenge attempts to garner support for the environmental and policy approaches because even when obesity problems are discussed in terms of more comprehensive strategies including policy and environmental change, solutions are most often framed in terms of individual behavior.[10] It is recommended that HSHC be framed as a societal responsibility to create an environment that supports individual behaviors. Messages that embrace personal responsibility as a value by placing priority on how the HSHC activities (e.g., environmental and regulatory actions such as improving school nutrition, menu labeling, and banning food marketing to children) are likely to support responsible

[10] Woodruff K, Dorfman L, Berends V, Agron P. Coverage of childhood nutrition policies in California newspapers. J Public Health Policy. 2003;24:150-158.

behavior would bridge the divide between views on personal and societal responsibility.[11]

Relationship between Childhood Obesity and Environmental & Policy Changes

Policy or environmental change approaches to increase opportunities for healthy eating and physical activity may be less likely to be understood by the public, and in turn, less likely to be supported by decision/policy makers if obesity is perceived as the responsibility of parents, families, or children. While our data indicate that people were aware of specific efforts such as farmers' markets/CSAs (56%), community gardens (40%), menu labeling (30%), nutrition standards in National School Lunch and Breakfast Programs (27%), bicycle/pedestrian/park master plans (27%) and Walk to School/Safe Routes to School (23%), only one-third of respondents reported being aware of childhood obesity efforts in the past year. These data suggest a disconnect and lack of understanding about how community, policy, and environmental level interventions are related to addressing childhood obesity. For example, 56% of respondents who were aware of Walk to School/Safe Routes to School reported not having heard of efforts to address childhood obesity. Likewise, 62% and 65% of those who have heard of farmers' markets/CSAs and community gardens respectively said they were unaware of childhood obesity efforts; and approximately half of those aware of the nutrition standards in National School Lunch and Breakfast Programs (49%), restaurant menu labeling (55%), and bicycle/pedestrian/park master plan (56%) have not heard of childhood obesity efforts. Marketing and messaging strategies need to communicate how these specific efforts contribute to the comprehensive solution for addressing the many causes of childhood obesity in order to gain public recognition and support for policy and environmental changes as an appropriate response to obesity.

When asked specifically about awareness of HSHC, only 30% provided a response that demonstrated their understanding of the initiative. Based on the open-ended responses, HSHC seems to be confused with the new nutrition standards in the National School Lunch and School Breakfast Programs and negative feelings regarding changes in school meals and HSHC being another government program. While the intent of the updated nutrition standards is to provide healthier meals for school children, the mandates imposed by the federal government are often deemed as unfavorable and restrictive by the public. These data are consistent with the literature which suggests that public health approaches, particularly those involving governmental strategies, are sometimes caricatured as forcing people to behave in certain ways.[11] Communication efforts should help to praise these strategies in an attempt to overcome negative feelings.

[11] Brownell KD, Kersh R, Ludwig DS, Post RC, Puhl RM, Schwartz MB, and Willett WC. Personal Responsibility and Obesity: A Constructive Approach to A Controversial Issue. *Health Affairs*, 29, no. 3 (2010): 379-387.

Communication efforts to address obesity need to first work to foster an understanding and acceptance that a variety of environmental influences are creating this widespread public health problem. Building on the experience of previous public health issues, including alcohol, tobacco, and violence, success in addressing childhood obesity will be more likely to occur when obesity is considered a social responsibility that includes policy and environmental change strategies, which must be done at the organizational level (healthcare, schools); community level (community and local leaders), and state and federal levels.[12] Tobacco control advocates were able to reframe their issues from the perspective of social responsibility, or how responsibility was shared between individual and environmental causes of the problem.[12] For example, individual smokers should do everything they can to quit, but local, state, and federal government and industry have the responsibility to create smoke-free environments. HSHC communication efforts should consider this strategy to maximize buy-in.

Community Engagement

Best practice obesity prevention efforts suggest the importance of community engagement to ensure sustainability and to create a message of societal responsibility. Seventy-five percent of survey respondents reported willingness to work with others to improve their community, while slightly fewer were willing to work to increase availability of healthy foods and places to be physically active in the community (66% and 64%, respectively). Among those more willing to promote healthy eating and physical activity were non-Whites (65%), younger individuals (64% of those under 40), those renting their home (62%), and individuals with children (65%). Communication efforts should target these individuals in an effort to increase community engagement.

Limitations

Several limitations of this survey should be noted. First, although use of a random sample strengthens external validity, the generalizability of findings should be limited to the targeted communities in this survey. Second, while the influence of the 64.7% of non-responders is unknown, a response rate of 35.3% is very acceptable for a household survey of this nature. Finally, a higher proportion of respondents were women, however this is typical in most surveys and not necessarily a shortcoming for the survey purpose, as women are more likely to volunteer and advocate, thereby an important target population for development of HSHC communication efforts.

Conclusion

The Missouri Foundation for Health created HSHC to help address childhood obesity in Missouri through policy and environmental changes that increase access to healthy foods and opportunities to be physically active. The framing of obesity needs to embrace personal responsibility as part of a societal approach that places priority on

[12] Dorfman L, Wallack L. Moving nutrition upstream: the case for reframing obesity. J Nutr Educ Behav 2007;39:S45-50.

policy and environmental strategies. It is recommended that a messaging environment be created to increase public support for, and consequently the feasibility of, policy and environmental changes that address obesity.