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Publication Date

2018-06-01

DOI

10.1016/j.ypmed.2018.02.036

Peer reviewed

HHS Public Access

Author manuscript

Prev Med. Author manuscript; available in PMC 2019 June 01.

Published in final edited form as:

Prev Med. 2018 June ; 111: 135–141. doi:10.1016/j.ypmed.2018.02.036.

Developing an index of dose of exposure to early childhood obesity community interventions

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Abstract

The recognition of the role of the environment in contributing to the obesity epidemic has led to increasing efforts to address obesity through environmental or place-based approaches in the past decade. This has challenged the use of the quasi-experimental design for evaluating community interventions. The objective of this study is to describe the development of an index of dose of exposure to community interventions that impact early childhood obesity. The goal is to provide an alternative means for evaluating the impact of multiple intervention strategies that target the same community at the same time. Two workgroups developed domains, constructs and protocols for estimating a “community intervention dose index” (CIDI). Information used to develop the protocol came from multiple sources including databases and reports of major funding

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Conflict of Interest: None

organizations on obesity-related interventions implemented in Los Angeles County from 2005–2015, key informant interviews, and published literature. The workgroups identified five domains relevant to the consideration of dose of exposure to interventions: physical resources, social resources, context, capacity development, and programs and policies; developed a system for classifying programs and policies into macro- and micro-level intervention strategies; and sought ratings of strategy effectiveness from a panel of 13 experts using the Delphi Technique, to develop an algorithm for calculating CIDI that considers intervention strength, reach and fidelity. This CIDI can be estimated for each community and used to evaluate the impact of multiple programs that use a myriad of intervention strategies for addressing a defined health outcome.

Keywords

index of dose of exposure; community interventions; childhood obesity

Introduction

Obesity has been declared a global epidemic by the World Health Organization (1) and the United States has one of the highest obesity prevalence rates in the world (2). Its prevalence among American adults increased from 13% to 23% between the 1960s and 1980s, and then quickly climbed to 30% in the 1990s at which it has since hovered. Obesity-related medical care is costly, ranging from $147 billion to nearly $210 billion a year (3). In addition, obesity-related costs associated with job absenteeism and lower productivity at work have been estimated at $43 billion a year and $506 per obese worker per year respectively (3, 4). A cost effective approach to reducing obesity risk is to prevent its development early in childhood since obesity tracks from childhood to adulthood (5). Nation-wide, 9.4% of 2–5 year olds were obese and 1.7% were extremely obese in 2013–2014 (6).

In Los Angeles County, home to about 400,000 children aged 2–5 years, the obesity rate among 3 and 4 year olds from low-income families is considerably higher than in the nation, reaching a peak of about 23% in 2009, and then decreasing to 18% in 2015 (7, 8). Starting in about 2005, considerable amounts of funding from the federal government and private organizations and health systems have been used for local initiatives to address both adult and child obesity (9–13). Initiatives such as The California Endowment's "Healthy Eating and Active Communities" (9), Kaiser Permanente's "Community Health Initiatives" (12) and First 5 LA's "Best Start Initiative" (13) have sought to increase the capacity of communities to improve access to healthy food, provide opportunities for exercise and play and/or provide environments that support optimal growth and development of children. Many initiatives used macro-level strategies to change institutional policies, business practices or the built environment in ways that would increase the accessibility of healthy foods, decrease the accessibility of unhealthy foods, or provide opportunities for physical activity. These macro-level intervention strategies may have had "trickle-down" or synergistic effects on childhood obesity. An example of such a macro-level effort includes the new WIC food package implemented in October 2009 (14), which provided vouchers specifically for the purchase of fruits and vegetables. Such an effort may have led to the stocking of fresh fruits and vegetables by some grocery stores, hence increasing access to

fruits and vegetables by local families, and consequently, increasing consumption of fruits and vegetables and potentially decreasing obesity risk among children. Another example is the Child Nutrition and WIC Reauthorization Act of 2004 (15), which mandated the establishment of local school wellness policies by schools participating in the National School Meals Program. This may have affected the food choices of not only school-aged children but also younger siblings of the families who may already have received nutrition education from the WIC program.

The 21% decrease in the obesity prevalence for 3 and 4 year olds experienced in Los Angeles County from 23% in 2009 to 18% in 2015 (8) suggests that at least some of these efforts "are working". However, it is less clear which specific intervention strategies or combinations of strategies have contributed to this decline in obesity prevalence. Given the number of obesity related intervention efforts that have been implemented in various regions in Los Angeles County since 2005 (most of which were not implemented in a coordinated approach) as well as the lack of "comparison" communities, the use of traditional quasi-experimental designs for evaluating the impact of these interventions has not been practical nor feasible.

In 2013, the Early Childhood Obesity Systems Science Study (ECOSyS) – a partnership among UCLA, PHFE-WIC, the Los Angeles County Department of Public Health (LADPH), University of Washington, University of California at Berkeley, Samuels Center, First 5 LA and Kaiser Permanente – supported by the National Institutes of Health, was implemented to pioneer the use of causal inference and systems science methods for evaluating community interventions. Using data from the WIC program, ECOSyS designed a natural experiment for evaluating the independent and combined effects of the many intervention strategies implemented in Los Angeles County over the past decade on early childhood obesity.

To evaluate the impact of exposure to multiple intervention strategies on early childhood obesity risk, ECOSyS developed a "*community intervention dose index*" (CIDI) for the purpose of measuring simultaneous exposure to multiple interventions. Exposure to multiple interventions is conceptualized as having a *dose effect* that is influenced by community resources and capacity (16–18). Such an index would consider the combined effect of several intervention efforts by quantifying the efficacy and reach of each intervention strategy, and also implementation fidelity. For example, a community where a farmers' market has just been established, and where residents are exposed to a campaign to promote healthy eating and have the opportunity to participate in nutrition education classes would receive a higher index score than one where residents are exposed to a similar campaign and nutrition education classes but a proposal to establish a farmers' market has *not* been implemented. ECOSyS hypothesized that: (i) the impact of multiple obesity-related policies and interventions in a community can be quantified using an index of intervention dose that considers the effectiveness of each intervention strategy and the reach and fidelity of the intervention; this impact is influenced by the community's characteristics (resources and capacity including neighborhood environment); (ii) the index of intervention dose will demonstrate good reliability, construct validity and predictive validity; and (iii) Considering differences in community resources, a higher index of intervention dose will be associated

with reduced obesity prevalence among preschool-aged children in a manner consistent with a causal effect. The objective of this paper is to describe the development of this community intervention dose index and its implications for using this method in community health research and evaluation.

Methods

Two work groups were established to develop the community intervention dose index (CIDI). Workgroup I was charged with identifying domains and constructs relevant to forming this index using a life course perspective (22) and the socio-ecological model as frameworks (23). This workgroup was made up of an interdisciplinary team of 15 members from a range of organizations including academic research institutions, major funding and health organizations, WIC, non-profit organizations and the local health department, and with training and experiences in public health, economics, social sciences, nutrition and/or pediatrics. Workgroup II reviewed the domains and constructs identified by the first workgroup, and provided guidance on the development of methods for operationalizing variables and gathering relevant data for analysis. It consisted of 15 members and included researchers with expertise in the development of indices and the collection and/or analysis of evaluation data, as well as representatives of major funding organizations experienced in gathering data from grantees.

The workgroups were supported by research staff who reviewed: (a) the published literature on methods for assessing exposure to multiple interventions and childhood obesity related interventions; (b) recent requests for proposals by major funders to address early childhood obesity so as to understand current thinking about intervention approaches and knowledge gaps relevant to childhood obesity efforts; and (c) descriptions of relevant databases maintained by major funders to determine the types of available data. These activities identified two major barriers to gathering data for estimating exposure to community interventions: (1) inconsistent use of terminology referring to various intervention strategies, indicating a need for a system for classifying and defining various intervention strategies to facilitate data gathering efforts to determine intervention strategy strength; and (2) lack of adequate information necessary for estimating intervention outcomes.

To address the first barrier, a classification system of intervention strategies was developed by determining how obesity intervention experts thought about intervention approaches. This information was obtained by interviewing a select group of six obesity intervention experts, and identifying references to obesity related intervention strategies in the published literature and requests for proposals issued by major funders to address obesity in Los Angeles County.

To address the lack of adequate information for estimating intervention outcomes, the Delphi technique was used to obtain expert ratings of the effectiveness of each type of intervention strategy (defined by the classification system developed). The Delphi technique is a method for obtaining the opinions of experts by seeking responses to a questionnaire that is administered in at least two rounds of data collection. With each round, the summarized responses of the entire panel are shared with panel members who are given an

opportunity to revise their responses after reviewing the summarized responses (19). In particular, a panel of 13 experts rated, over two rounds, (i) the effectiveness of each intervention strategy using either a 1–9 Likert scale or a metric that was converted to a 1–9 scale, as well as (ii) the importance of factors that could have potentially influenced the effectiveness of each strategy. The experts were selected to represent various stakeholders in local childhood obesity related interventions and included health department officers, pediatricians, academic researchers, funding organization executives and community health practitioners. The responses of the panel members from the first round were summarized (mean, standard deviation, range) and shared with all panel members who were given an opportunity to revise their individual ratings in the second round. The summarized ratings were used with program-specific information obtained from key informant interviews with program grantees or from program websites to estimate the dose index.

Results

CIDI domains: Conceptual and operational definitions

Five domains relevant for assessing dose of exposure to early childhood obesity related community interventions were identified by Workgroup I. These were physical resources, social resources, context, capacity development, and programs and policies. Conceptual and operational definitions of the constructs for each of these five domains were developed by Workgroup I and Workgroup II respectively (Table 1). In particular, constructs within the physical resource, social resource and context domains were operationalized using published definitions and measures of the food and physical activity environments (e.g. number of supermarkets and green space in a neighborhood) and social environments (e.g. crime rates, median household income at the census tract level) (20–21). Constructs within the capacity development and programs and policies domains were operationalized using definitions of the impact of programs drawn from the evaluation research literature (16–18). Specifically, program impact is assessed by its strength, population reach and fidelity, with strength defined as the effectiveness of an intervention on specific measurable outcomes; population reach as the percent of the target population reached by the intervention; and fidelity as the extent to which the program was implemented as planned.

Classification of intervention strategies

The classification of early childhood obesity related intervention strategies developed by Workgroup II is shown in Figure 1. Using Bronfenbrenner's ecological framework (23), Workgroup II defined micro-level strategies as those that directly affect the individual. Micro-level strategies identified were nutrition counselling, exercise and nutrition education classes, home visitation programs, screening and referral programs, and health communication and social marketing campaigns designed to change behaviors through messages carefully tailored for the target population. Strategies that do not directly target individuals were considered macro-level strategies and these included government and public institutional policies, infrastructure investments and business practices that could potentially affect the eating and/or physical activity behaviors of individuals through pathways that affect the accessibility of various types of food and community features that provide opportunities for physical activity.

Ratings of intervention strategies using the Delphi technique

Ratings of the 13 expert panel members are presented in Table 2. For macro-level strategies, public institutional policies and infrastructure investments were rated the most highly, followed by government policies and business practices in both rounds. For micro-level strategies, group education was rated the most effective and home visitation the least in both rounds; there was inconsistency in the ratings of the other three strategies (health communication and social marketing, counselling, and screening and referral).

Estimation of CIDI

A review of information about intervention programs from various funders' data sources revealed that each program may apply several intervention strategies. We therefore developed an algorithm to calculate a dose index for each intervention strategy within a program that could be summed to yield a program dose index.

Each strategy-specific dose index involves: (1) the *strength* of the strategy determined from ratings of its effectiveness by the Delphi expert panel and assigned a score of 1–9; (2) *population reach* determined either from interviews with program grantees or by the Delphi expert panel (when information from program grantees was not available) and expressed as a percent of the target population reached; and (3) *fidelity* assessed from interviews with grantees and/or funders' databases. For micro-level intervention strategies which usually face fewer implementation barriers than macro-level strategies, fidelity is assumed to be 1 unless there is clear evidence to show that fidelity was compromised, in which case, fidelity is reduced by a percent that reflects the extent to which the program was not implemented as planned. For macro-level strategies which often encounter considerable implementation barriers some of which are not within the direct control of the implementing institution, fidelity is assumed to be 0 unless there is clear evidence to show that the strategy was implemented. If implemented, fidelity will be assigned a score that reflects the extent to which it was implemented as planned.

The dose indices for all intervention strategies employed by a program are weighted and summed to create a program-specific dose index. Macro-level and micro-level strategies are weighted differently based on the ratio of the effectiveness of macro-level strategies to micro-level strategies, determined by applying causal inference methods to available data on relevant interventions implemented in Los Angeles County over about a decade. Dose indices for all programs within the geographic boundaries of a community are summed to estimate the CIDI. The algorithm for calculating the dose index of each program and subsequently, for each community is shown in Figure 2. An example to illustrate the calculation of the CIDI is provided online as supplementary material.

The CIDI can be used to quantify simultaneous exposure of residents in a community to various interventions. An example would be a community where effort is made to improve the safety of a neighborhood park, implement free or highly subsidized cooking and exercise classes in the local churches, and train local child-care providers on ways to offer healthy food to children. The CIDI would consider the efficacy, reach and fidelity of all of these programs and score them using the algorithm described above. The dose index score for

each program can be examined separately or in combination with each other, allowing for the detection of beneficial effects of each intervention strategy.

Discussion

In clinical health research, the randomized controlled trial (RCT) design is the gold standard for proving efficacy of a treatment for a health condition. The equivalent of such a study design in community health research is the cluster randomized trial where the community intervention ("treatment") is assigned to communities such as schools or neighborhoods. Cluster randomized trials are often expensive and challenging to implement. It is often impractical (or inappropriate) to "standardize" an intervention for a community and expect communities to agree to be randomly assigned to the intervention or comparison group in a cluster randomized trial especially in societies where change and improvement may be underway, aided by today's highly developed information technology which allows information to be conveniently and quickly shared across communities through the internet.

An alternative approach to evaluating such community-level interventions is to assess the dose of exposure to community interventions and use causal inference or systems science approaches to examine relationships between dose of exposure to multiple interventions and the health outcome of interest (24–27). An index of dose of exposure, such as the one described above, can be used to evaluate the impact of multiple intervention strategies or single intervention strategies on the outcome.

In this study, we used a heuristic process to develop an index of dose of exposure to community interventions that may impact childhood obesity risk among low-income children in Los Angeles County where considerable investments have been made to promote healthy communities for families (9–13). Some of these investments focused on addressing childhood obesity directly through educational and health promotion approaches; other investments aimed to improve both physical and social aspects of neighborhood environments with the goal of increasing the capacity of communities to provide environments that promote optimal growth and development in children and healthy living in general. This heuristic process drew from the knowledge and experiences of two workgroups established to (i) identify domains and constructs relevant to assessing "intervention dose", and (ii) develop methods for operationalizing the constructs based on the types of data that can be practically acquired. Our study built on current thinking about the concept of "intervention dose" by reviewing published evaluation research literature and consulting with researchers from two other groups that have pioneered work on evaluating community-wide interventions in the field of obesity and related health behaviors. In particular, Cheadle, et al. (2012), in their effort to evaluate Kaiser Permanente's Community Health Initiative, have created a measure of the impact of a community intervention strategy which they refer to as "population dose" (18). This measure builds on Glasgow's RE-AIM framework and combines "reach" and "strength" or "effectiveness" to create an estimate of strategy impact. Fawcett et al. (2015) developed a community measurement system to capture community programs and policies for the Healthy Communities Study. This system included a protocol for calculating dose of interventions, which they refer to as "intensity" of programs and policies (17). As in the study led by Cheadle et al. (18), intensity (or dose) reflects

behavioral strategy strength and reach. In addition, Fawcett et al. explicitly includes a measure of duration of intervention to distinguish between events of short-term duration (e.g. one-day events) and those of longer-term duration (e.g. ongoing policy). This study conducted 1,500 key informant interviews to capture data on 125 communities and was resource intensive.

Our study attempted to refine the constructs and approaches described by Cheadle et al. (2012) and Fawcett et al. (2015) in three major ways: (1) Assessment of dose of exposure to community interventions considered fidelity; (2) Development of a system of classification of intervention strategies to allow for an expert panel to rate the effectiveness and reach of each intervention strategy using the Delphi technique; this system classified intervention strategies according to whether they directly served targeted individuals to change behavior (micro-level) or addressed policies, business practices, community capacity and infrastructure to indirectly affect behavior (macro-level); and (3) Weighting of macro-level and micro-level strategies based on the ratio of the effectiveness of macro-level strategies to micro-level strategies determined by applying causal inference methods to various interventions implemented in Los Angeles County.

In the future, we plan to determine the predictive validity of the proposed dose index by linking it to early childhood obesity outcomes by neighborhood. Such an effort will allow us to better assess the limitations of our methodology. In particular, the estimation of fidelity remains a challenge; in this study, we did not attempt to obtain Delphi ratings of fidelity since fidelity is program-specific (rather than strategy-specific). However, when programs can be easily identified, the Delphi approach can be used to obtain ratings of fidelity from a well-chosen panel of experts. In addition, the construct and predictive validity of Delphi ratings of intervention effectiveness and reach needs to be assessed by comparing the ratings with actual evaluations.

Conclusion

Our study used information from existing funder databases and reports; key informant interviews were conducted only to supplement the information obtained from these databases and reports. Because Los Angeles County experienced an influx of investments to address obesity over the past ten years, we were able to focus only on the interventions of large funders that targeted all or parts of Los Angeles County. We used two workgroups to develop the dose index and this resulted in efforts to (i) develop a system of classification of intervention strategies, and (ii) seek the opinions of a panel of experts with diverse professional backgrounds (clinicians, academicians, health practitioners, funders) and knowledgeable about childhood obesity interventions, to determine the impact various intervention strategies. In this paper, we publish an algorithm for calculating CIDI for interventions that could impact early childhood obesity. This growing body of research aiming to advance understanding of “dose of community interventions” has potential for informing future priorities with regard to the allocation of limited resources to community health.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgments

Funding Sources: This work was supported by the Eunice Kennedy Shriver National Institute of Child Health and Human Development [R01HD072296]; National Institutes of Health, Bethesda, MD; and First 5 LA, Los Angeles, CA.

Abbreviations

CIDI Community Intervention Dose Index

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Highlights

- Developed a system for classifying strategies into macro- and micro-level strategies
- The Delphi Technique was used to seek expert opinion on strategy effectiveness
- Effectiveness, reach, and fidelity used to estimate community intervention dose index
- An index can be used to evaluate the impact of dose of community interventions

MACRO-LEVEL INTERVENTION STRATEGIES[1]
1) Government policies: National, state or local policies (e.g., principles, rules, guidelines, legislation) that aim to influence the accessibility of healthy and unhealthy foods, increase opportunities for physical activity, improve healthcare access, or promote breastfeeding. *Examples:* Food subsidies to support locally grown foods; food taxes on sugar-sweetened beverages; zoning laws to limit fast food operations; regulation of food marketing practices targeting children; tax breaks to businesses that provide on-site recreational facilities for exercise; health insurance for low-income children; longer maternity leave
2) Public institutional policies: Policies by public institutions such as county governments, school districts, Head Start childcare programs, and healthcare facilities that aim to increase the accessibility of healthy (vs. unhealthy) foods, increase opportunities for physical activity, or promote breastfeeding. *Examples:* Nutritional guidelines for food procurement and foods served; mandatory physical education for students; schools allowing their facilities to be used by residents during weekends (joint-use agreements); baby friendly hospital policies
3) Infrastructure investments: Efforts to change the physical environment to promote healthy eating and active living. *Examples:* Walkable neighborhoods; parks; establishment of healthy food venues (e.g., farmers' markets, supermarkets)
4) Business Practices: Practices by the private sector that influence consumer choice and decision- making. *Examples:* Product placement in a grocery store; restaurant procurement of locally grown foods; menu changes; menu-labeling
MICRO-LEVEL INTERVENTION STRATEGIES[2]
1) Group education: An intervention that involves imparting knowledge and/or skills to a group of individuals, including breastfeeding workshops; nutrition education, exercise and parenting classes; and cooking demonstrations.
2) Counseling: Interactions with the child and/or child's parent/caregiver by a trained counselor or para- professional with the goal of changing food consumption patterns of the child, parenting style, or parenting practices.
3) Health communication & social marketing: The use of communications strategies, consumer research, and/or marketing principles to promote health by influencing individual decisions that affect health.
4) Home visitation: A program that primarily delivers family-oriented services through home-visiting and may address parenting practices and child feeding practices.
5) Screening & referral: A program that screens for suboptimal growth (e.g., overweight/obesity) and/or inadequate nutrition, and refers the child to appropriate programs such as WIC.

[1] Strategies that affect the larger community and obesity-related behaviors and practices only indirectly
[2] Strategies that target a specific population and obesity-related behaviors and practices directly

Figure 1.
Classification of Intervention Strategies

1. Determine intervention strategies that were applied using intervention classification system

2. Determine strength score (SS) of intervention strategy = Mean score from Delphi Survey using a 1-9 scale

3. Determine population reach (RS) = Percent of targeted population reached (estimated from reports or interviews with grantees or if not available, from the expert opinions of the Delphi Survey expert panel)

4. Assess fidelity (FS):
For micro-level strategies, assume to be 1 unless there is clear evidence to show that fidelity was compromised. In such a case, fidelity is reduced by a percent that reflects the extent to which the program was not implemented as planned (obtained from evaluation reports or interviews with grantees)
For macro-level strategies, assume to be 0 unless there is clear evidence to show that the strategy was implemented. If implemented, fidelity is **assigned a score that reflects the extent to which it was implemented as planned**

5. Calculate INTERVENTION DOSE INDEX (IDI) for each intervention strategy = STRENGTH SCORE (SS) * REACH SCORE (RS) * FIDELITY SCORE (FS)

6. Weight the indices for macro- and micro-level strategies using a ratio determined from associations between various intervention strategies and early childhood obesity in Los Angeles County.

7. Sum strategy-specific IDI for a program to estimate program-specific IDI (IDI_p).

8. Sum program-specific IDI for each geographically bounded community to estimate community intervention dose index:
$\mathbf{COMMUNITY\ INTERVENTION\ DOSE\ INDEX\ (CIDI)} = \sum IDI_p$

Figure 2.
Algorithm for calculating program-specific and community intervention dose index

Table 1

Domains of dose of exposure to childhood obesity-related community interventions: Conceptual and operational definitions of constructs

Domain	Conceptual Definitions	Operational Definitions
Physical resources	Built environment and structural resources in existence for a community to use to take action concerning childhood obesity (e.g. recreational facilities, preschools, grocery stores, etc.)	Count and geographic density of various types of food establishments obtained from the NETS database[a] Availability of public spaces for exercise and play such as parks, from government agencies Count of playgrounds, gymnasiums and sports facilities available to the public, from the NETS database Count of licensed preschools and child-care centers, from NETS database
Social resources	Intra- and interpersonal resources/human resources, including skills, networks, and organizations in existence for community to use to take action concerning childhood obesity (e.g. social networks, leadership, communitybased organizations, faith-based organizations, etc.)	Count of faith-based organizations, from Yellow Pages. Count of community-based organizations that provide recreational services to children, from Yellow Pages, NETS database and interviews with key informants.
Capacity development	Efforts, events or programs to build capacity or build “new” resources that ultimately impact childhood obesity (e.g. training, technical assistance, coordination of activities among organizations, etc.)	Specific programs that develop capacity such as training programs are classified under programs and policies. Other aspects of capacity development that are informal such as coordination of activities are not measured but will be considered qualitatively in the interpretation of findings.
Programs and policies	Actual obesity-related interventions and policies that occurred and are relevant to the Los Angeles County population (e.g. public policies, laws, school policies, clinical and health promotion programs, economic incentives, etc.)	Count of interventions by strategy (defined using the classification shown in Table 2) Community Intervention Dose Index (described in the text and Figure 2) calculated from intervention strength, reach and fidelity.
Context	Other neighborhood or community characteristics and conditions that impact the ability to use resources or implement programs regarding childhood obesity (existing neighborhood characteristics, targeted food marketing, etc.)	Census tract-level characteristics: income, education, ethnicity, nativity, etc. from the Census.

[a]Description of the NETS database can be found at: http://www.kauffman.org/~/media/kauffman_org/microsites/sotf/data_sources/NETS_data_overview.pdf

Table 2

Expert panel ratings[§] of macro-level and micro-level strategies using the Delphi Technique

	Round 1 (N=14)	Round 2 (N=13)
Macro-level strategies	Mean (S.D.)	Mean (S.D.)
Government policies	5.9 (1.6)	6.0 (1.4)
Public institutional policies	6.0 (1.6)	6.3 (1.3)
Infrastructure and other community investments	6.2 (1.7)	6.3 (1.2)
Business practices	5.7 (2.1)	5.6 (1.8)
Micro-level Strategies		
Group education	5.5 (1.1)	5.2 (1.4)
Counselling	5.1 (1.8)	4.8 (1.2)
Health communication & social marketing	4.9 (1.5)	4.8 (1.3)
Home visitation	4.8 (1.4)	4.5 (0.9)
Screening & Referral	4.8 (2.0)	5.2 (1.7)

[a] using a 1–9 scale where a higher rating is better

[b] Panel members were asked the following questions:

> Based on your experience and knowledge, please rate the impact of [NAME OF MACRO-LEVEL STRATEGY] on early childhood obesity prevention in LA County over the past decade. By "impact," we refer to intended or unintended beneficial effects on obesity-related behaviors and/or obesity prevalence.
>
> Based on your experience and knowledge of programs implemented in LA County, how effective has [NAME OF MICRO-LEVEL STRATEGY] been for addressing early childhood obesity over the past decade? By "effective," we refer to the change in obesity-related behaviors and/or obesity prevalence in the targeted population.