

SCOPING REVIEWS + NUTRITION POLICY

AN OBESITY CASE STUDY

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OBJECTIVES

Scoping Reviews

Example:

“How Obesity Integrates Systems Approaches: A Scoping Review”

Q+A / Discussion

WHAT'S A SCOPING REVIEW?

- **Arksey + O'Malley Framework**
 - originated in 2005
- **As of 2014, 63% of scoping review authors still felt it was necessary to define “scoping review” (or other term) within manuscript (Pham et al., 2014)**
- **aka: scoping study, scoping project, scoping exercise, scoping report, scoping method, scoping exercise method, literature mapping, mapping of research, evidence mapping, systematic mapping, literature review, and rapid review**

“SCOPING” VS. “SYSTEMATIC”

| Scoping Review | Systematic Review |
|--|---|
| Scopes the field of research related to a specific issue / research question | Systematically summarizes the results of controlled trials / high quality studies |
| Question may be very broad + may look very WIDE but not always DEEP into research | One or more research questions that narrowly and critically analyze the existing research |
| Result may be the ability to map the results +/- or a narrative description of the related evidence base | Results in strong form of critical appraisal of the evidence to form practice guidelines and policies |
| Non-linear / iterative process | Very methodological, linear process / protocol |
| Does NOT involve an assessment of the quality of the primary studies | Systematic assessment of study quality and outcomes |
| Often times can be used as the precursor to a systematic review | n/a |

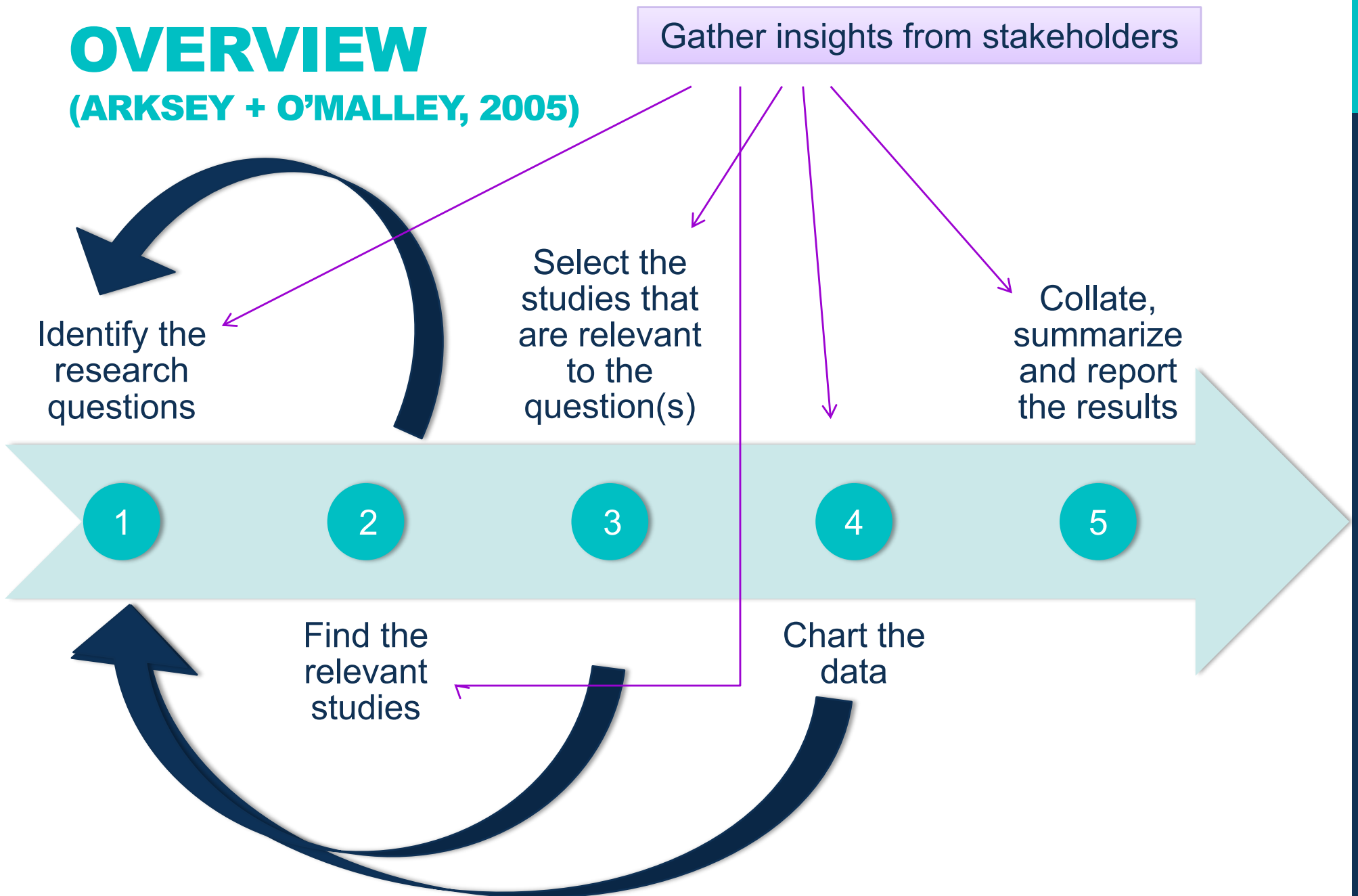
WHY PERFORM A SCOPING REVIEW?

Common reasons to do a scoping review include:

- 1. To examine the extent / range / nature of research activity in a particular field or in order to answer a broad question**
- 2. To determine whether a systematic review is feasible / valuable**
- 3. To summarize and disseminate research findings (generally and broadly) to policy makers / practitioners / consumers**
- 4. To identify gaps in the existing evidence base +/- or to draw conclusions regarding the overall state of the research activity in a particular area**

FRAMEWORK OVERVIEW

(ARKSEY + O'MALLEY, 2005)



HOW OBESITY INTEGRATES SYSTEMS APPROACHES: A SCOPING REVIEW

STEP BY STEP EXAMPLE

BACKGROUND

- NASEM released recommendations on redesigning the process for developing the DGA in September 2017

RECOMMENDATION 7: “Commission research and evaluate strategies to develop and implement systems approaches into the DGA”

- Nutrition has not historically integrated systems-based approaches into research and policy-making
- Obesity researchers have been using systems approaches for the past decade
- This scoping review will take the first step of looking into what types of systems-based approaches are currently being used in obesity research to better inform how integration will be possible for nutrition researchers

STEP 1:

IDENTIFY QUESTION

Final Research Question:

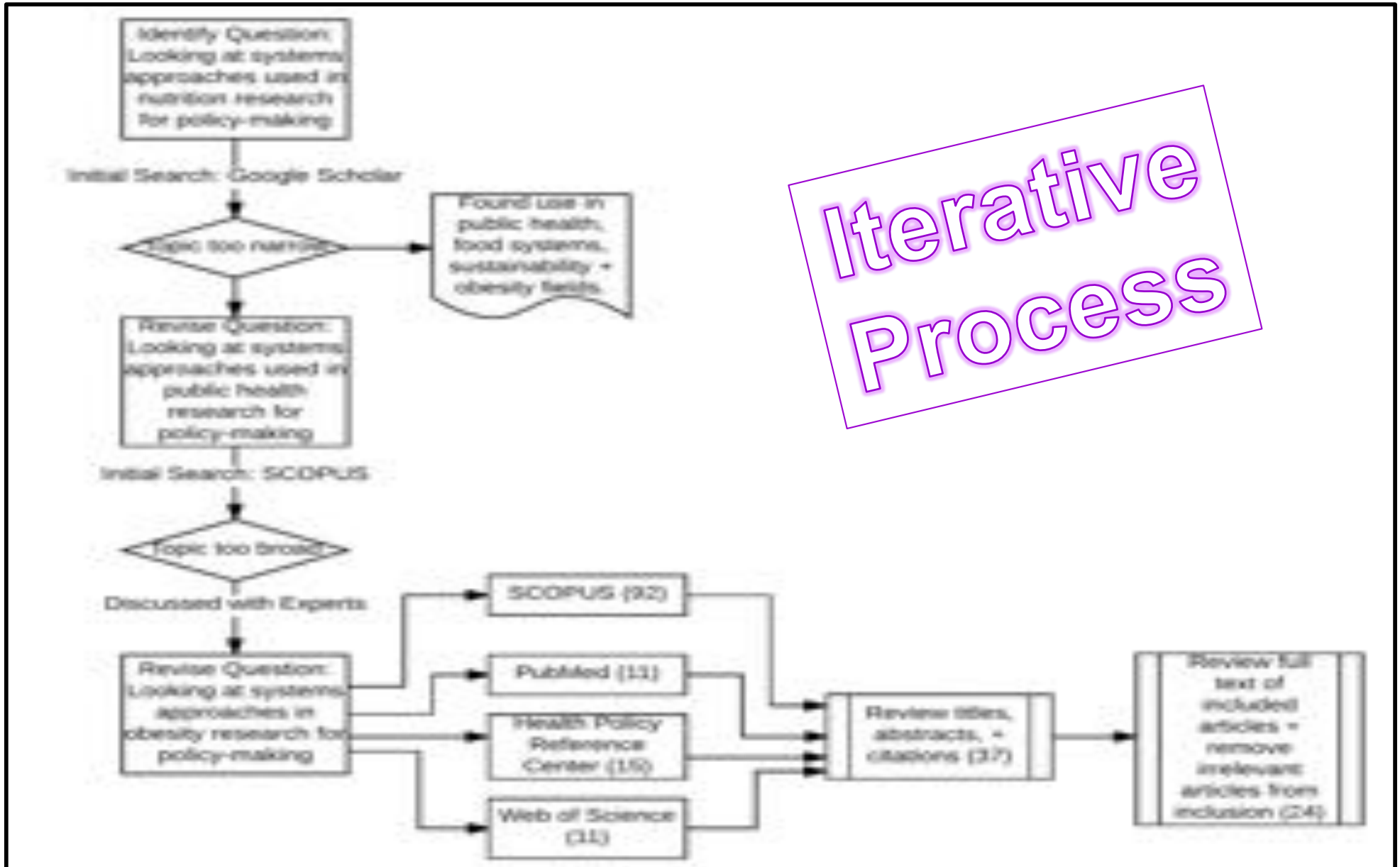
What types of systems-based approaches are currently being used and/or recommended for use within the existing obesity literature to better develop and assess policy?

WHY PERFORM A SCOPING REVIEW?

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3. To summarize and disseminate research (broadly) to policy makers
4. To identify research activity in a

EXPLORATORY

STEPS 1-3: FIND + SELECT STUDIES

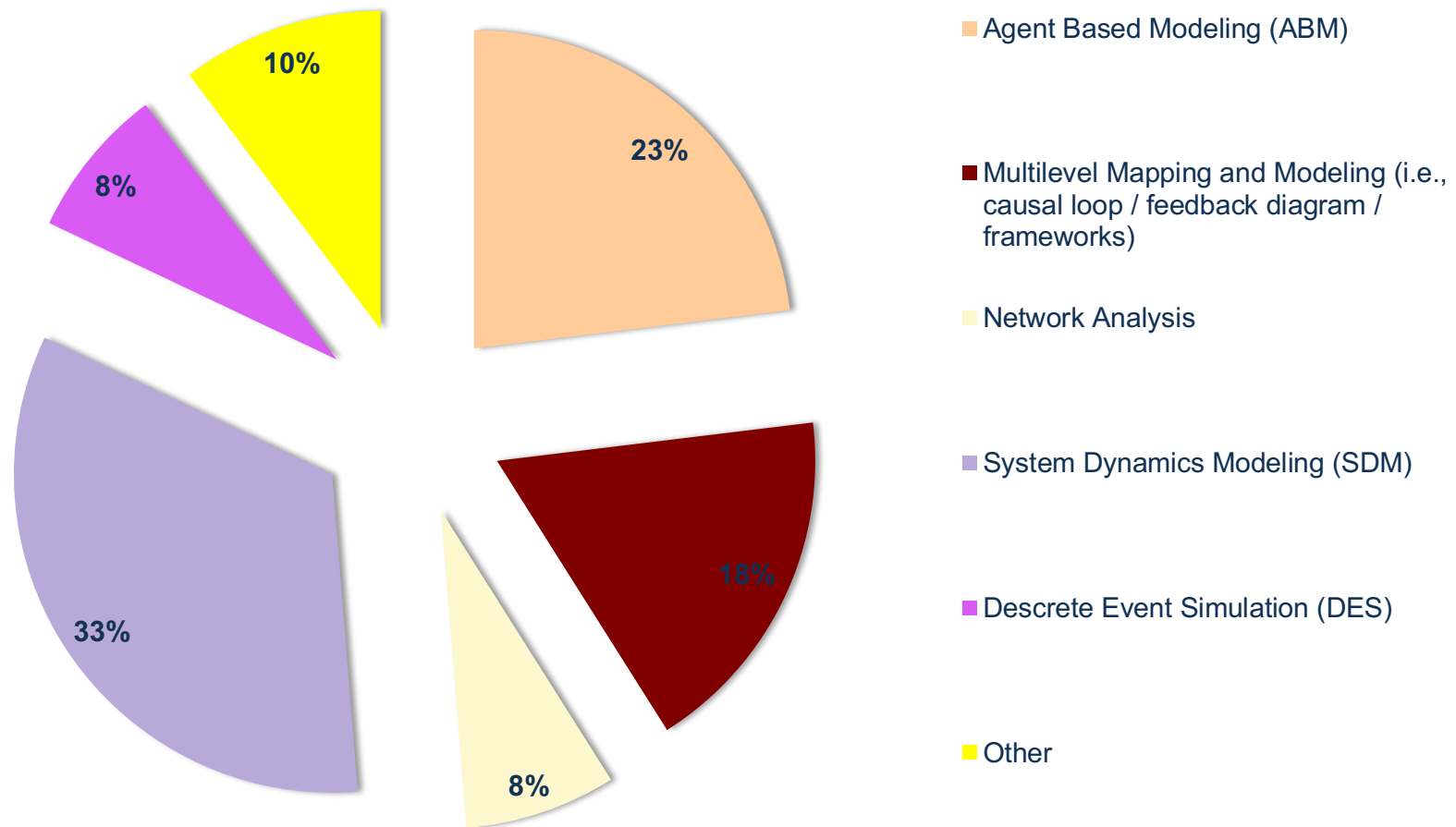


STEP 4: CHART DATA

| Citation | Publication Year | Study type | Systems Approach Used (or Recommended for Use) | Purpose + Outcomes |
|--|------------------|---|---|---|
| Abdel-Hamid, T. K. (2002). Modeling the dynamics of human energy regulation and its implications for obesity treatment. <i>System Dynamics Review</i> (Wiley), 18(4), 435-471. doi:10.1002/sdr.340 | 2002 | reviews 2 empirical studies demonstrating "mixed" results | Systems dynamic Modeling / Simulation model | demonstrate the utility of system dynamics modeling to study and gain insight into the physiology related to weight gain and loss. A simulation model is presented that integrates nutrition, metabolism, hormonal regulation, body composition, and physical activity. |
| Abdel-Hamid, T. K. (2003). Exercise and diet in obesity treatment: An integrative system dynamics perspective. <i>Medicine & Science in Sports & Exercise</i> , 35(3), 400-413. doi:10.1249/01.MSS.0000059698.82126.20 | 2003 | Comparative Study | systems dynamic computer modeling | demonstrate the utility of System Dynamics computer modeling to study and gain insight into the impacts of physical activity and diet on weight gain and loss. A holistic System Dynamics computer model is presented that integrates the processes of human metabolism, hormonal regulation, body composition, nutrition, and physical activity. These processes are not independent of one another, and the model captures the complex interdependencies between them in the regulation of body weight and energy metabolism. The article demonstrates how such an integrative simulation model can serve as a viable laboratory tool for controlled experimentation to investigate the impacts of physical activity and diet on body weight and composition. |
| Beets, M. W., Webster, C., Saunders, R., & Huberty, J. L. (2013). Translating policies into practice: A framework to prevent childhood obesity in afterschool programs. <i>Health Promotion Practice</i> , 14(2), 228-237. doi:10.1177/1524839912446320 | 2013 | Review / Practice guidelines | Framework development | describe the development of a framework that identifies critical modifiable levers within afterschool programs that can be altered and/or strengthened to reach policy goals. These include the policy environment at the national, state, and local levels; individual site, afterschool program leader, staff, and child characteristics; and existing outside organizational partnerships |
| Brennan, L. K., Sabounchi, N. S., Kemner, A. L., & Roumand, P. (2015). Systems Thinking in 49 Communities Related to Healthy Eating, Active Living, and Childhood Obesity. <i>Journal Of Public Health Management & Practice</i> , 21(5)-549. doi:10.1097/PHH.0000000000000248 | 2015 | Qualitative | Causal loop diagrams synthesized to find emerging themes + policy implications | systems science tools combined with group model-building techniques offer promising methods that use transdisciplinary team-based approaches to improve understanding of the complexity of the obesity epidemic. Purpose of this article is to present evaluation methods and findings from 49 Healthy Kids, Healthy Communities sites funded to implement policy, program, and environmental changes from 2008 to 2014 |
| Bures, R.M., Mabry, P.L., Orleans, C.T., & Esposito, L. (2014). Systems science: a tool for understanding obesity. <i>American Journal Of Public Health</i> , 104(7), 1156. doi:10.2196/AJPH.2014.302082 | 2014 | editorial | modeling, simulations, research on the underlying dynamics of the obesity system, public-private partnerships | this editorial provides examples to demonstrate the advantages of using team-based approaches and systems science tools to help researchers and policymakers better understand the pathways through which drivers of the global obesity epidemic operate and their relative impact. |
| Cockrell-Skinner, A., & Foster E. M. (2013). Systems Science and Childhood Obesity: A Systematic Review and New Directions. <i>Journal Of Obesity</i> , Vol 2013 (2013), doi:10.1155/2013/129199 | 2013 | systematic review | Systems Dynamic Modeling, Agent Based Modeling, and Discrete Event Simulation | systematically review studies that examined the causes and/or consequences of obesity from a systems science perspective. The 21 included studies addressed four general areas of systems science in obesity: (1) translating interventions to a large scale, (2) the effect of obesity on other health or economic outcomes, (3) the effect of geography on obesity, and (4) the effect of social networks on obesity. |
| Fallah-Fini, S., Rahmandad, H., Huang, T. T., Bures, R. M., & Glass, T. A. (2014). Modeling US Adult Obesity Trends: A System Dynamics Model for | 2014 | cross-sectional | | use a system dynamics model that quantifies the energy imbalance gap responsible for the US adult obesity epidemic |

STEP 5: SUMMARIZE FINDINGS

Systems Approaches Used



WHAT ARE THE “RESULTS”?

- **REMEMBER:** quality of the studies is **NOT** reviewed
- **Scoped the related research to answer the research question of assessing what methods are being used by obesity researchers**
- **Results are a narrative discussion of:**
 - Summary of what systems approaches were found to be used in the existing research (previous slide)
 - Definition of systems thinking
 - *Defined as “a method of visualizing interrelationships within a complex problem or system”*
 - Definitions of the different systems approaches

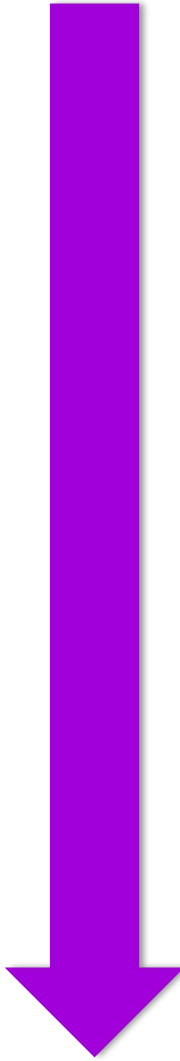
WHAT WERE LIMITATIONS?

- **Systems “science” / “thinking” / “theory” is a relatively new “science”**
- **Similar, but somewhat different names for many of the system science methods were used interchangeably which made it a challenge to group the methods during step 5 (data synthesis)**
- **Studies may have been missed due to the many interchangeable names for the discipline + methods**

IN CONCLUSION:

- **While systems-based approaches are not commonly seen in nutrition research, yet, obesity research is beginning to rely on these strategies, especially when it comes to researching effects of potential policies**
- **Nutrition researchers not specifically focused on obesity, but instead focused on nutrients, nutrient pathways, etc., could potentially begin to integrate systems science in a similar fashion**
- **This scoping review can lay the groundwork for this transition as it scoped the methods being used in a similar / related field (obesity)**

Scoping Review



**Examined the extent of research activity
(systems approaches)
in a particular field
(obesity)
in order to answer a broad question
(how it is being used or recommended for use)**

NEXT STEPS = Using the knowledge gathered:

- **RESEARCHERS:** Consider ways to use systems approaches within emerging nutrition research
- **POLICYMAKERS:** Consider ways to use systems approaches when analyzing research for policymaking

Policy

QUESTIONS?

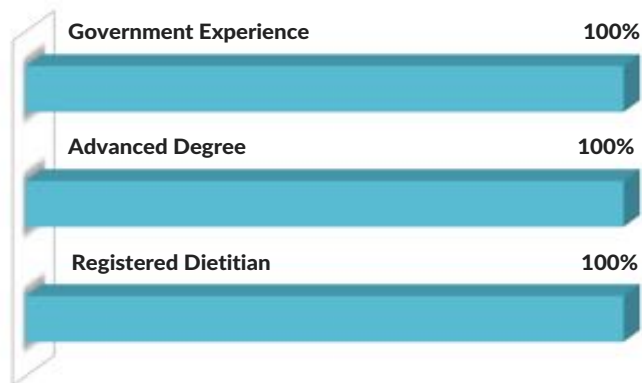
THANK YOU!



CONTACT US!

FD TEAM EXPERIENCE INCLUDES:

- U.S. Department of Agriculture (USDA)
- Department of Health and Human Services (HHS)
- Congress
- Trade associations (senior executive)
- Academia
- Research
- Public relations + communications
- Child Nutrition feeding + education programs



FD TEAM MEMBERSHIPS INCLUDE:

- Academy of Nutrition + Dietetics (AND)
- American Society for Nutrition (ASN)
- Institute of Food Technologists (IFT)



CORE SERVICES INCLUDE:

- Strategic planning
- Implementation expertise
- Policy compliance auditing
- Scientific interpretation
- Trends analyses
- Labeling claims + approvals (US + abroad)
- Social responsibility policy assessment
- Regulatory + legislative interpretation
- Comment + testimony development + preparation
- Relationship + partnership building
- Monitoring: federal, state, local, + international
- Weekly updates + instant alerts
- Presentations
- Conference + webinar planning

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