



From the children's perspective: What are candy, snacks, and meals?



Elizabeth L. Adams, MS^{a, b}, Jennifer S. Savage, PhD^{a, b, *}

^a Center for Childhood Obesity Research, The Pennsylvania State University, 129 Noll Laboratory, University Park, PA 16802, United States

^b Department of Nutritional Sciences, The Pennsylvania State University, University Park, PA 16802, United States

ARTICLE INFO

Article history:

Received 16 November 2016

Received in revised form

1 April 2017

Accepted 28 April 2017

Available online 29 April 2017

Keywords:

Card sort

Qualitative method

Child snacking

Dietary assessment

Portion size

Obesity prevention

ABSTRACT

Objective: There remains a lack of consensus on what distinguishes candy (i.e. features sugar as a principal ingredient, also called sweets or lollies), snack foods, and foods served at meals; therefore, this study examined characteristics elementary-aged children use to distinguish between these food categories.

Methods: Participants were children aged 5–8 years (N = 41). Children were given 39 cards, each containing an image of a common American food (e.g. ice cream, fruit). Children sorted each card into either a “snack” or “candy” pile followed by a semi-structured one-on-one interview to identify children's perceptions of candy, snack foods, and foods served at meals. Verbatim transcripts were coded using a grounded theory approach to derive major themes.

Results: All children classified foods such as crackers and dry cereal as snacks; all children classified foods such as skittles and solid chocolate as candy. There was less agreement for “dessert like foods,” such as cookies and ice cream, whereby some children classified these foods as candy and others as snacks. Specifically, more children categorized ice cream and chocolate chip cookies as candy (61% and 63%, respectively), than children who categorized these as snack foods (39% and 36%, respectively). Qualitative interviews revealed 4 overarching themes that distinguished among candy, snack foods, and food served at meals: (1) taste, texture, and type; (2) portion size; (3) perception of health; and (4) time of day.

Conclusion: Children categorized a variety of foods as both a candy and a snack. Accurate measurement of candy and snack consumption is needed through the use of clear, consistent terminology and comprehensive diet assessment tools. Intervention messaging should clearly distinguish between candy, snack foods, and foods served at meals to improve children's eating behavior.

© 2017 Elsevier Ltd. All rights reserved.

1. Introduction

Childhood obesity rates remain high despite concerted efforts to reduce this global epidemic. In 2015 approximately 42 billion children worldwide under the age of 5 were overweight (UNICEF, WHO, & World Bank, 2015). Concurrent with the rising obesity rates, children's snacking frequency has increased with the largest increases in salty snack foods and candy (Jahns, Siega-Riz, & Popkin, 2001; Piernas & Popkin, 2010; USDA, 2010). The language used in different parts of the world to describe candy, chocolate, and other sweet foods varies greatly. In America, candy is a term used to describe a sweet confectionery food with sugar as the principal

ingredient. However, in the United Kingdom, candy often indicates a sweet food that is coated in sugar or “candied”. Hereon in, the term candy will be used to describe sugar confectionery (e.g. hard candy, sugar candy, and lollies), as well as chocolate confectionery (Minifie, 2012).

On average, children eat snack foods three times per day, accounting for approximately 25% of their daily energy intake (Piernas & Popkin, 2010), while 31% of children report daily candy consumption (Duyff et al., 2015). Given the often energy-dense, nutrient-poor composition of snack foods (Piernas & Popkin, 2010), children's snack food consumption may contribute to the obesity epidemic; however, cross-sectional, observational evidence on the association between obesity and snack intake remains controversial (Larson & Story, 2013; Nicklas, Yang, Baranowski, Zakeri, & Berenson, 2003). Further, associations between candy consumption and childhood obesity remain unclear with observational studies showing candy consumption having positive

* Corresponding author. Center for Childhood Obesity Research, The Pennsylvania State University, 129 Noll Laboratory, University Park, PA 16802, United States.
E-mail address: jfs195@psu.edu (J.S. Savage).

(Nicklas et al., 2003), null (Trier et al., 2016), and negative associations (Gasser, Mensah, Russell, Dunn, & Wake, 2016; O'Neil, Nicklas, Liu, & Berenson, 2015; Pei et al., 2014) with children's weight.

The inconsistencies between children's candy, snack, and meal consumption with health outcomes is in part due to the lack of operational definitions and diverse approaches for measuring the composition and frequency of eating occasions (Johnson & Anderson, 2010; USDA, 2015). Although an eating occasion and what constitutes a meal has been well studied (Leech, Worsley, Timperio, & McNaughton, 2015), it remains unclear what distinguishes candy and snack foods from a meal. One approach to categorizing the foods eaten within an eating occasion is the patient-identified approach, whereby participants self-identify foods eaten as a snack and meal (Bellisle, 2014; Popkin & Duffey, 2010). Another approach is to delineate snack foods and meals based on the time-of-day (Almoosawi, Winter, Prynne, Hardy, & Stephen, 2012; Duffey, Pereira, & Popkin, 2013) and/or minimum energy content (Gibney & Wolever, 1997; Murakami & Livingstone, 2014), whereas some individuals simply do not distinguish between snack foods and meals when assessing a broad measure of "eating occasions" (Duval et al., 2008; Popkin & Duffey, 2010).

Adding to the complexity of understanding energy intake and eating behavior, few studies use a standardized definition for candy and snack foods. In self-report food recall data, candy is often grouped with other "sweets," such as flour confectionery (e.g., cake, cookies) and sweetened beverages, making its distinction from snack-like foods unclear (Newby, Weismayer, Åkesson, & Wolk, 2006; Nicklas et al., 2003). Both candy and dessert-type foods, or "sweets", are associated with obesity, yet without a clear distinction between these two food groups, the identification of children's eating patterns and parenting behaviors around consumption of candy versus "sweets" can not be determined. The definitions of these food categories (candy, snacks, and meals), which are often categorized using research-defined lists, affect how eating patterns are characterized and consequently how health-related outcomes are concluded. For example, the influence of snacking on the probability of obesity has been shown to vary up to 70%, depending on the chosen definition for "snack" (Gregori, Foltran, Ghidina, & Berchialla, 2011). Thus, a better understanding of how individuals define these food categories will help to clarify, and in turn, better identify eating behavior. Limited research has qualitatively described preschool aged children and/or mother's perceptions of eating and feeding practices specific to snack foods (Fisher et al., 2015; Marx, Hoffmann, & Musher-Eizenman, 2016; Younginer et al., 2016). Surprisingly, no study to date has qualitatively examined how parents or children distinguish between snack foods and candy. This information can be used to develop more efficient and effective obesity prevention interventions and public health messages that better target eating behavior.

This study used a mixed-method approach to examine the characteristics elementary school-aged children use to distinguish between candy, snack foods, and foods served at meals. It is important to better understand school aged children's perceptions, given this is a time when children transition from shared decision-making (parent and child) to independent decision-making (child only) around eating behavior. Knowledge gained from this study can be used to inform dietary intake measurement, as well as obesity prevention intervention and public health messaging.

2. Materials and methods

2.1. Participants

Children 5–8 years of age residing in Central Pennsylvania

participated in this study. To recruit participants, flyers were posted at local schools, daycare facilities, and on website advertisements. Parents were screened via telephone to ensure their child was eligible to participate. Inclusion criteria included children who consumed candy at least 1 time per month, given the larger purpose of this project was to test an intervention to manage candy consumption in the home. Children did not have any health conditions or food allergies affecting food intake. All parents signed an informed consent approved by The Pennsylvania State University's Institutional Review Board, and children's verbal assent was obtained prior to the start of the testing session.

2.2. Procedure

During the children's baseline study visit, height and weight were measured by a trained research assistant following the procedures outlined by Lohman and colleagues (Lohman, Roche, & Martorell, 1991). These values were used to calculate body mass index (BMI; calculated as kg/m²). BMI values were converted to age and sex specific BMI percentiles using Centers for Disease Control and Prevention 2000 growth charts (Kuczmarski et al., 2000); overweight was defined as BMI greater than or equal to the 85th percentile and obese was defined as greater than the 95th percentile. All other testing procedures occurred between the hours of 8:00AM and 1:00PM, during a separate testing session, approximately 2–4 months following baseline. At the start of this testing session, parents of the participating children completed a demographic questionnaire. Children then individually completed a closed card sort task, followed by a one-on-one semi-structured interview with a trained interviewer. During the card sort task, children were given a stack of 39 cards, each containing 1 image of food commonly consumed by children. These foods were selected based on national consumer data for top selling candy and snack products from the 2009–2010 NHANES survey. Children were asked to sort each card into a "snack" or a "candy" pile, given the primary purpose of this study was to understand what characteristics children use to distinguish between snacks and candy. If children were unsure on if a certain food image was a candy or snack food, they were instructed to create a "not sure" pile. Similarly, if children had never consumed a particular food, the child was instructed to place the card into a "never eaten" pile. Following the card sort task, children completed a one-on-one semi-structured interview where they were asked what characteristics distinguish candy, snacks, and meals from one another, including probing questions about time of day (see Table 1).

2.3. Data analysis

Descriptive statistics were calculated for demographic variables using SAS version 9.3 (SAS Institute Inc., Cary, NC, USA) Frequency data for the card sort task was calculated in Excel version 14.5.4 (Microsoft Corporation, Redmond, WA, USA). All interviews were audio recorded and transcribed verbatim. A grounded-theory approach was used to identify emerging themes (Charmaz, 2008). First, two researchers independently open-coded all transcripts to identify initial categories. These researchers then met to achieve a consensus on these categories by merging conceptually similar themes. From this, four major themes were determined. Next, a team of 3 researchers who did not conduct participant interviews independently coded all transcripts using the four identified major themes as a coding scheme. All coding discrepancies were discussed and resolved during group meetings led by an experienced, senior researcher. If children answered they "did not know" to an interview question, this response was not coded into one of the four themes. Data saturation was achieved during coding when

Download English Version:

<https://daneshyari.com/en/article/5044000>

Download Persian Version:

<https://daneshyari.com/article/5044000>

[Daneshyari.com](https://daneshyari.com)