



A toy story: Association between young children's knowledge of fast food toy premiums and their fast food consumption



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ABSTRACT

Fast food restaurants spend millions of dollars annually on child-targeted marketing, a substantial portion of which is allocated to toy premiums for kids' meals. The objectives of this study were to describe fast food toy premiums, and examine whether young children's knowledge of fast food toy premiums was associated with their fast food consumption. Parents of 3- to 5-year old children were recruited from pediatric and WIC clinics in Southern New Hampshire, and completed a cross-sectional survey between April 2013–March 2014. Parents reported whether their children usually knew what toys were being offered at fast food restaurants, and whether children had eaten at any of four restaurants that offer toy premiums with kids' meals (McDonald's, Burger King, Subway, Wendy's) during the 7 days preceding the survey. Seventy-one percent of eligible parents participated (N = 583); 48.4% did not receive any education beyond high school, and 27.1% of children were non-white. Half (49.7%) the children had eaten at one or more of the four fast food restaurants in the past week; one-third (33.9%) had eaten at McDonald's. The four restaurants released 49 unique toy premiums during the survey period; McDonald's released half of these. Even after controlling for parent fast food consumption and sociodemographics, children were 1.38 (95% CI = 1.04, 1.82) times more likely to have consumed McDonald's if they usually knew what toys were offered by fast food restaurants. We did not detect a relationship between children's toy knowledge and their intake of fast food from the other restaurants. In this community-based sample, young children's knowledge of fast food toys was associated with a greater frequency of eating at McDonald's, providing evidence in support of regulating child-directed marketing of unhealthy foods using toys.

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1. Introduction

Approximately one-third of U.S. children between ages 2–11 years consume food or beverages from fast food (FF) restaurants (also referred to as Quick Serve Restaurants-QSRs) daily (Powell & Nguyen, 2013; Powell, Nguyen, & Han, 2012). Children's FF consumption is associated with higher intakes of total energy, fat, and sugar; consequently, it is a dietary behavior of public health

concern (Bowman, Gortmaker, Ebbeling, Pereira, & Ludwig, 2004; Institute of Medicine [IOM], 2005; Powell & Nguyen, 2013). In 2009, the FF industry spent \$583 million on child-directed marketing, of which \$341 million was spent on toy premiums for kids' meals (Federal Trade Commission [FTC], 2012). Premiums are non-food items that are distributed with a company's food products; toys are one common example of a premium (FTC, 2012; Otten, 2014). These toy premiums frequently involve cross-promotional tie-ins (CPTIs) with entertainment media or children's games (FTC, 2012). By linking advertised foods with children's favorite toy, movie or television characters, CPTI marketing strategies are particularly persuasive (Connor, 2006; Jenkin, Madhvani, Signal, & Bowers, 2014). In 2014, FF kids' meal toy premiums were tied to

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many of the highest-grossing youth-rated movies, including *How to Train Your Dragon 2*, *The Lego Movie* and *Rio 2* (IMDb, 2015). Popular TV shows (e.g., Nickelodeon's *SpongeBob Squarepants*) and toys or games (e.g., Mattel's *Barbie*) are also common themes for FF CPTI toy premiums. Because many of the toys offered in FF kids' meals feature children's favorite media characters, some researchers have suggested that it is children's relationships with these media characters, rather than the toy per se, which drives requests for FF kids' meals (Kraak & Story, 2015a). FF restaurants often offer CPTI toy premiums in collectible series, which encourage repeat visits and consumption of kids' meals to collect all toys in the series (McAlister, 2012). More than a billion kids' meals with CPTI toy premiums are sold annually (FTC, 2012), nearly all of which are high in fat, sodium, and sugar (Harris et al., 2013).

Five of the ten top quick-service restaurants based on annual sales offer toy premiums with their kids' meals: Burger King, Chick-Fil-A, McDonald's, Subway and Wendy's (QSR Magazine, 2015). Among these, McDonald's surpasses the others in terms of overall sales (QSR Magazine, 2015). In 2013, McDonald's U.S. sales revenue exceeded \$35 billion, compared to approximately \$12.7 billion for Subway, \$8.6 billion each for Wendy's and Burger King, and \$5.0 billion for Chick-Fil-A (QSR Magazine, 2015). McDonald's also outpaces the other restaurants in terms of child-targeted advertising, accounting for 70% of televised FF commercials aimed at young children, most of which include references to CPTI toys (Bernhardt et al., 2013).

Experimental studies indicate that child-targeted food marketing strategies, including CPTIs with licensed media characters, influence young children's food and taste preferences (Borzekowski & Robinson, 2001; Chernin, 2008; DeDroog, Valkenburg, & Buijzen, 2011; Kotler, Schiffman, & Hanson, 2012; Letona, Chacon, Roberto, & Barnoya, 2014; Robinson, Borzekowski, Matheson, & Kraemer, 2007) requests to parents to purchase advertised foods (Stoneman & Brody, 1981), and short-term consumption (i.e., in a laboratory setting) of advertised foods (Cairns, Angus, & Hastings, 2009; IOM, 2005; Kotler et al., 2012; Roberto, Baik, Harris, & Brownell, 2010). Collectible toys exert an especially strong pull on young children (McAlister, Cornwell, & Cornain, 2011). McAlister (2012) found preschool children had more positive attitudes towards FF meals paired with toys compared to standalone meals, and this difference was greater if the meals were paired with collectible toys.

Despite this compelling experimental evidence, to date, no epidemiological study has examined young children's knowledge of FF toy premiums and its association with FF intake in a natural setting (Kraak & Story, 2015a). The aims of the current study were to describe FF CPTI toy premiums and examine whether preschool-age children's knowledge of FF toys was associated with their FF consumption.

2. Methods

2.1. Study sample and survey design

Between April 2013 and March 2014, trained research assistants approached parents of preschool-age children in the waiting rooms of pediatric and Women, Infants, and Children clinics in two Southern NH metropolitan regions and invited them to complete a cross-sectional survey about children's media use, food choices, and parents' shopping practices. Eligibility for the study was based on children's age (3–5 years) and parents' ability to complete a written survey in English or Spanish. If parents had more than one age-eligible child, we selected the child who was there for an appointment. If two or more age-eligible children were present for a clinic appointment, we randomly selected one for the study.

Seventy-one percent (N = 583) of eligible parents completed a written informed consent and survey. The primary reason for not participating was not enough time (44% of those who declined). Parents received a \$10 gift card and children received a non-branded toy (e.g., pony figurine, small car, or coloring book) for participating.

2.2. Measures

Surveys were cognitively pre-tested with a demographically comparable sample for comprehension, face validity, and completion time. Our analysis included four FF restaurants (i.e., McDonald's, Burger King, Subway, and Wendy's) that met the following inclusion criteria: ranked in the top 10 of quick-service restaurants, based on annual sales (QSR Magazine, 2015); provided CPTI toy premiums with kids' meals; and had at least one outlet located in each recruitment area during the data collection period (this excluded Chick-Fil-A).

2.2.1. Kids' meal CPTI Toy premiums

We monitored the release of kids' meal CPTI toy premiums at the four FF restaurants by checking FF company websites weekly throughout the data collection period. In the rare event that the website did not list or adequately describe a toy, a research assistant called one or more restaurants in the catchment areas to ascertain the current CPTI toy premium. We also recorded the type of CPTI using the following categories: movie; TV show; toy/game (including video games and apps); other.

2.2.2. Children's fast food consumption

We ascertained children's FF consumption by asking parents, "In the past 7 days, did your child have something to eat or drink from the following fast food restaurants?" This was followed by a list of 14 FF restaurants, to which parents responded yes/no/don't know for each restaurant. We created a dichotomous outcome (yes vs. no/don't know) for McDonald's consumption, which we examined separately because of its prominence in both sales and child-targeted advertising. We combined consumption of FF from the other three restaurants into a single dichotomous variable because many fewer children ate at these restaurants. Thus, our two outcome variables were whether children ate at McDonald's and whether they ate at Burger King, Subway, or Wendy's in the past week.

2.2.3. Children's knowledge of fast food toys

To determine children's knowledge of FF toy promotions, we asked parents, "Does your child usually know what toys or giveaways are being offered at one or more fast food restaurants (yes; no; don't know)?" Don't know responses were coded as no. Parents who responded affirmatively were then asked: "How does your child find out about the toys or giveaways? (from me; other family members; friends; TV; the Internet; signs outside the restaurant)." Parents were able to choose multiple answers.

2.2.4. Covariates

We measured and adjusted for child demographics (sex, age, race [white/nonwhite]), family socioeconomic status (annual household income, parental education), parent FF consumption, and whether parents are influenced by children's liking of FF toys. Parents' FF consumption was measured by asking: "How often do you have something to eat or drink from a fast food restaurant? (never; less than once a month; less than once a week; 1–2 times a week; 3–4 times a week; 5 or more times a week)." We asked parents to indicate the extent to which "My child likes the toys or giveaways" influences their decision to go to a FF restaurant with

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