Developing A System for Coding Food Receipt Data From Multiple Points of Purchase to Better Understand Within Group Risk Factors for Obesity Among Preschoolers from Low-income Backgrounds

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INTRODUCTION

- Food receipt analysis provides a unique and objective perspective on food purchasing patterns.
- Existing food receipt analysis methods include requiring participants to annotate receipts, which increases participant burden, or only uses receipts from a single chain food retailer. This method can reduce participant burden and can be applied to receipts from multiple food retailers.
- The purpose of this work is to develop a novel system for coding food receipt data that can be utilized irrespective of food points-of-purchase while utilizing data from several independent food markets in a specific geographic area

AIM

To develop a novel system for coding food receipt data that can be utilized irrespective of food points-of-purchase and including data from a variety of independent food markets.

METHODS

- Receipts(N=475) were collected as part of a larger study to determine preschool obesity risk factors within families (N=34) receiving services at two Detroit-based WIC clinics.
- Research staff collected and scanned receipts from food purchases weekly over a four-week period.
- The initial codebook was adapted from the 2015 Dietary Guidelines Advisory Committee food categories to allow for qualitative classification of foods in the absence of nutrient information.
- All receipts were double coded over nine months and discrepancies resolved by discussion with the research team.

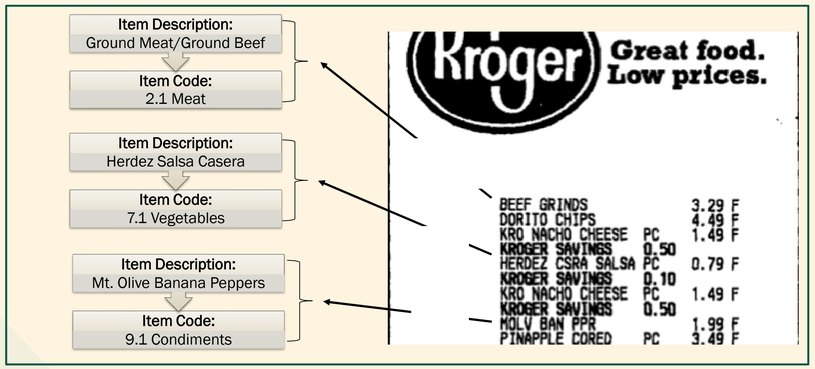
CODE BOOK DEVELOPMENT

- The initial codebook included 10 primary codes, each with 3-6 secondary codes.
- Final codebook included 18 codes to capture items that could not be coded and allow for double coding of items (e.g., sit-down restaurant and breaded/fried food items).
- The list of secondary codes were expanded in order to capture nutritional factors (e.g., expanding the primary code 'grains' to 'whole grains'; see Table 1 for examples).
- A protocol was developed for how to interpret and code receipt items (see Figure 1).

Table 1. Primary and Secondary Code Examples

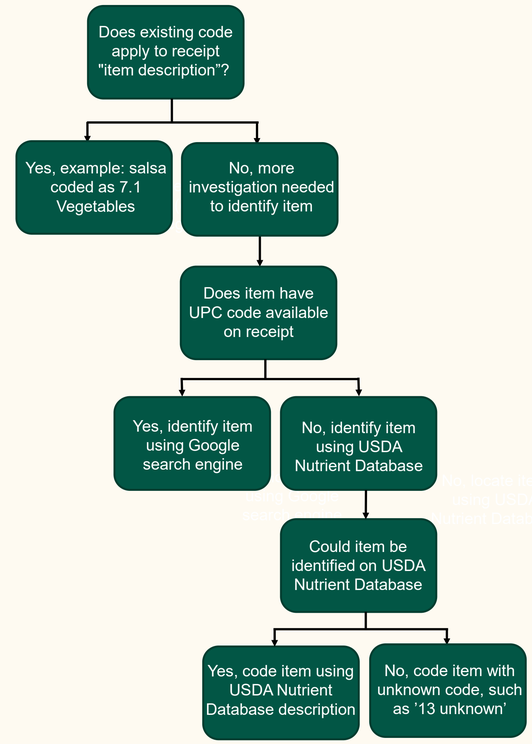
Primary Code	Secondary Code	Label	Description
1		Dairy	
	1.1	Low-fat milk/yogurt	1% low fat milk, skim milk, flavored low/non-fat milk, low/non-fat milk yogurt, milk substitutes
	1.2	Higher fat milk/yogurt	Whole milk, 2% reduced fat milk, flavored whole/reduced fat milk, whole/reduced fat yogurt, milk shakes
	1.3	Cheese	Any type of cheese (cheddar, colby-jack, goat, etc.), ricotta cheese
	1.4	Unspecified milk	Milk that does not specify percentage of fat content

CODING EXAMPLE



CODING PROTOCOL

Figure 1. Coding protocol flow chart



CONCLUSION

- This method of objectively assessing food purchases provides unique data on nutritional quality of food purchases.
- Data gleaned from receipts can inform interventions food purchasing patterns can identify key behavioral patterns and nutrition-related issues. This can inform family-focused programs and interventions targeting obesity and diet quality of young children from low-income backgrounds.

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