

Mothers of young children cluster into 4 groups based on psychographic food decision influencers

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Received 11 February 2008; revised 28 May 2008; accepted 28 May 2008

Abstract

This study explored how mothers grouped into clusters according to multiple psychographic food decision influencers and how the clusters differed in nutrient intake and nutrient content of their household food supply. Mothers ($n = 201$) completed a survey assessing basic demographic characteristics, food shopping and meal preparation activities, self and spouse employment, exposure to formal food or nutrition education, education level and occupation, weight status, nutrition and food preparation knowledge and skill, family member health and nutrition status, food decision influencer constructs, and dietary intake. In addition, an in-home inventory of 100 participants' household food supplies was conducted. Four distinct clusters presented when 26 psychographic food choice influencers were evaluated. These clusters appear to be valid and robust classifications of mothers in that they discriminated well on the psychographic variables used to construct the clusters as well as numerous other variables not used in the cluster analysis. In addition, the clusters appear to transcend demographic variables that often segment audiences (eg, race, mother's age, socioeconomic status), thereby adding a new dimension to the way in which this audience can be characterized. Furthermore, psychographically defined clusters predicted dietary quality. This study demonstrates that mothers are not a homogenous group and need to have their unique characteristics taken into consideration when designing strategies to promote health. These results can help health practitioners better understand factors affecting food decisions and tailor interventions to better meet the needs of mothers.

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Keywords:

Mothers; Food decision influencers; Psychographic; Cluster analysis; Nutrition; Descriptive

Abbreviations:

ANOVA, analysis of variance; BMI, body mass index; NAR, nutrient adequacy ratio; UPC, universal product code.

1. Introduction

Rising rates of obesity [1] and suboptimal intake of key nutrients [2,3] characterize the current American dietary picture. Exploring psychographic factors (eg, attitudes, values, motivations, perceptions, learning involvement, lifestyle, and behaviors) [4] that influence the food decisions of American families may help health professionals better

understand why Americans are choosing the foods they are. This understanding could subsequently inform the development of health promotion strategies that more effectively improve dietary intake and reverse the obesity trend [5–8]. One group that presents as a key segment of the population for focused nutrition education efforts is the group of mothers of young children because these women often serve as the main food decision makers and preparers for their families [9] and are poised to protect not only themselves, but their families, from diet-related diseases [10,11].

Describing the main food decision influencers of mothers and linking them to dietary intake patterns, as well as foods

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on hand in the household, has not been previously explored in the literature. Evaluating such relationships provides an opportunity to better characterize this population as well as help design tailored health messages that promote healthy diets in the context of key food decision influencers. Because many factors are known to affect food choice [11–23], Multiattribute Expected Utility Theory [24–26] was identified as an appropriate theoretical framework for guiding this investigation. Value expectancy theories such as this one are based on the notion that people behave in a way that they expect will enable them to gain that which is valuable to them [26].

Data reduction techniques, such as cluster analysis, can be used to characterize segments of populations by creating groupings of people with similar or homogenous characteristics that can then be compared and distinguished among each other [27–30]. The purpose of this study, therefore, was to determine how a sample of mothers grouped into clusters according to multiple psychographic food decision influencers. A second purpose was to examine how the clusters differed in nutrient intake as well as household food supply. Because mothers continue to be main food decision makers and preparers for their families and because most families could benefit from dietary improvement, determining whether there are subsegments of this population who differ in their response to food decision influencers could enable educators to develop more audience-specific nutrition education efforts that more effectively address and improve the dietary choices mothers make for themselves and their families.

2. Methods and materials

This nonprobability study was approved by the institutional review board at the authors' university, and informed consent was received from participants. Data were collected via a 3-part self-report survey instrument as well as a home visit to inventory the household food supply.

2.1. Sample recruitment

Parents from a northeastern state were recruited via word of mouth, and announcements were sent to community, religious, civic, and school-based parent groups as well as workplaces. Recruitment materials described the study and invited parents to complete a brief online eligibility questionnaire. To be eligible, individuals had to be mothers with at least one child 12 years or younger; not employed in a health-related profession; married or living with a domestic partner who was not employed in a health-related profession; food secure (all household members had access at all times to enough food for an active, healthy life) [31]; have the primary responsibility in their households for meal planning, grocery shopping, and meal preparation; and eat with most family members at home at least 3 times weekly.

Recruitment for the full study (completion of survey instrument and household food supply audit) occurred first.

Of the 318 individuals completing the eligibility questionnaire, 149 were eligible to participate. Invitations were issued in the order in which the eligibility questionnaire was completed until 100 individuals agreed to participate; 18 did not respond to the invitation, and the remaining 31 were invited to participate in the survey-only portion of the study. An additional 367 individuals completed the eligibility questionnaire for participation in the survey-only portion of the study with 227 being eligible to participate. Again, invitations were issued in the order in which the eligibility questionnaire was completed until 101 individuals agreed to participate. The main reasons interested participants were ineligible were they had children older than 12 years and/or did not have the primary responsibility for meal planning, grocery shopping, and/or meal preparation.

2.2. Survey instrument

The first part of the survey instrument consisted of items that established the participant's basic demographic characteristics, time spent weekly on food shopping and meal preparation activities, hours of paid employment weekly, exposure to formal food or nutrition education (ie, related work experience and coursework completion), and education level and occupation of the participant and her spouse/partner. Participants reported age, sex, height, and weight data for each household member. Using a 4-point scale (ie, excellent, good, fair, poor), participants rated their nutrition and food preparation knowledge, food preparation skill, and their own and each family member's health and nutrition status.

The second section examined food decision influencer constructs. Development and description of this section has been reported in detail elsewhere [32]. In brief, this section included a series of 5-point Likert-type scales that assessed a broad array of constructs identified from the literature that may affect food choices. The food decision influencer scales included in the survey are summarized in Table 1. To facilitate discussion, the scales were grouped into 7 broad areas: (1) outlook on life examined ability to follow through on goals, extent to which life and stress are "under control," and overall satisfaction with life; (2) health characteristics assessed the value placed on health, health locus of control, healthy eating self-efficacy, belief in the link between diet and health, and health protective behaviors; (3) food-related activities explored meal planning, enjoyment of food-related activities, value placed on food product information, food price consciousness, belief that food-related activities are worth the time and effort, and family involvement in food-related activities; (4) interest in learning about meals investigated interest in learning to make nutritious meals and quick meals; (5) food characteristics explored value placed on food "purity" (eg, preservative-free, additive-free), beliefs about "healthy" and convenience foods, and use of convenience foods; (6) eating/food relationships characteristics established eating style, beliefs that their diet was varied, and determined the extent to which participants were

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