

Allowing and Using Foods of Low Nutritional Value in Elementary School Classrooms: The Implications of Teachers' Beliefs

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ABSTRACT

Objective: To investigate elementary teachers' behavior toward allowing and using foods with low nutritional value in the classroom.

Design/Setting: A survey guided by the *Theory of Planned Behavior* was administered in fall, 2012 in 10 schools.

Participants: Elementary public school teachers in grades pre-kindergarten through 6.

Main Outcome Measures: Teachers' behavior and beliefs regarding allowing and using foods with low nutritional value in the classroom and *Theory of Planned Behavior* determinants.

Analysis: Pairwise correlation coefficients and multivariate linear regression to assess relationships between theory determinants and descriptive statistics.

Results: All 3 determinants, Attitude Toward the Behavior ($t = 4.04$; $P < .01$), Subjective Norms ($t = 3.78$; $P < .01$), and Perceived Behavioral Control ($t = 5.19$; $p < .01$), were statistically significant predictors of behavior. The majority of teachers (94%) allowed foods of low nutritional value for celebrations at least some of the time, and 75% stated that they had control over what foods they allow.

Conclusions and Implications: Discussions among teachers and school health professionals should ensue to improve nutritional content of foods allowed in classrooms. School policies can be developed and evaluated for effectiveness to have a positive impact on childhood obesity and school nutrition environments.

Key Words: energy-dense foods, teachers, school policies, *Theory of Planned Behavior* (*J Nutr Educ Behav.* 2016;48:86-92.)

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INTRODUCTION

In Mississippi, the Child and Youth Prevalence of Obesity Surveys found that 23.9% of Mississippi children are classified as obese and 18.5% as overweight. More specifically, in elementary schools, 24.1% of Mississippi students were classified as obese and 17.7% as overweight.¹

Because school-aged youth consume nearly half their daily nourishment at

school,² the school setting can provide a unique opportunity to have a positive impact on students' eating patterns, contributing to a healthier life.^{3,4} Whereas the Healthy, Hunger-Free Kids Act of 2010⁵ brought the school food environment to the forefront by strengthening nutrition regulations for school meals and setting the first nutritional standards for competitive foods, little attention was given to foods allowed and/or

used in the classroom. This is of particular concern because of findings that foods consumed in the classroom can affect students' nutritional intake negatively.^{2,3,5} Although the use of food for classroom rewards, incentives, and fundraising is discouraged by national health organizations,^{6,7} the practice continues to be prevalent in many schools.⁷⁻¹¹

The classroom teacher is a stakeholder affected by policies regulating foods allowed in the classroom for parties, celebrations, and fundraisers. Research has shown that teachers believed it was important to have a healthy school food environment, but they still used candy as a student incentive or reward in the classroom.^{8,12,13} One approach that may be used to investigate teachers' attitudes and intentions further regarding the use of food in the classroom is the *Theory of Planned Behavior* (TPB). The TPB is a

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theoretical framework used to explain and predict attitudes and behaviors based on the premise that an individual's intention to perform a given behavior is a strong indication of how likely he or she will perform the behavior.¹⁴ Measures used for 3 determinants of behavioral intention are identified as follows: Behavioral beliefs, weighted by their outcome evaluations, form an indirect measure of an individual's attitude toward the behavior. Normative beliefs, weighted by the motivation to comply, form an indirect measure of subjective norm. Control beliefs, weighted by perceived power, comprise an indirect measure of perceived behavioral control (PBC).¹⁵ Individuals are more likely to perform a behavior they believe is positive (behavioral beliefs and outcome evaluations) if people important to them think they should (normative beliefs and motivation to comply) and they have the ability to do so (control Beliefs and perceived power).¹⁶ The TPB determinants have been used successfully to design interventions targeting beliefs in a wide variety of health behaviors and healthy eating.¹⁵⁻²⁰

Whereas studies have reported practices of using food in the classroom,^{3,4,8,11} the authors could find no theory-based research regarding teachers' attitudes and intentions regarding these practices. The TPB has been efficacious in explaining teachers' intentions and behaviors in the classroom toward educational strategies and use of classroom technology,^{15,21-24} which lead to successful strategies in developing teacher in-services. Therefore, the authors decided to use the TPB as a framework to examine teachers' behavior. The objectives were to (1) describe teachers' agreement with beliefs regarding allowing foods of low nutritional value (LNV) to be brought into the classroom by students (ie, celebrations); (2) describe teachers' agreement with beliefs regarding using LNV foods in the classroom for celebrations, incentives, and rewards; and (3) identify which, if any, theoretical determinants of behavioral intention contribute significantly to teachers' behavior regarding allowing and using LNV foods in the classroom.

METHODS

Participants

The researchers recruited a convenience sample of 10 public elementary schools (grades pre-kindergarten to 6) in 3 northern Mississippi school districts to participate. These grades were selected because of previous research identifying the prevalence of LNV foods being used in the classroom.^{3,11,25} Teachers who taught a single grade, a combination of grades, and/or specialized subject (music or gym) were included. School district 1 was the largest, averaging 788 students and employing 137 teachers. School district 3 was the smallest, averaging 288 students and employing 72 teachers. The majority of teachers in all school districts were white females (Table 1). Districts 1 and 2, where surveys were distributed through teacher in-services, had the highest response rate, with 127 (93%) and 108 (83%), respectively. District 3, where surveys were delivered through teachers' mailboxes, had a response rate of 42 (57%). Twenty-one of the 277 returned surveys (8%) contained ≥ 1 missing values. Missing values were checked for randomness and were filled with imputed values if the probability of a missing value was determined not to be random and to depend on observed data. Seventeen surveys with values missing completely at random were dropped, which resulted in 260 surveys for final analysis (96%). The sixth grade had the fewest teachers because only 1 school had a sixth grade. The Combined category included teachers responsible for ≥ 2 grades in the same classroom and the Other category included areas such as special education, music, and phys-

ical education. Most teachers (93%) had > 1 year teaching experience (Table 2). Gender and race are included only for schools districts' demographics and were not captured for teachers on the survey instrument. The study was approved by the University of Mississippi's Institutional Review Board before data collection.

Instrumentation

Guided by *Constructing Questionnaires Based on the Theory of Planned Behavior: A Manual for Health Services Researchers*²⁶ and measures gleaned from Ajzen,¹⁴ and Glanz et al,¹⁶ the researchers designed survey items to measure theoretical determinants of behavioral intention. Before administration, the survey was piloted with 10 graduate student teachers, who were asked to evaluate the survey instrument for clarity of instruction, definition of terms, readability, and content of items. Input resulted in some rewording and rearrangement of item placement. Reliability of each determinant was calculated using Cronbach alpha procedures, and all scales were found to have acceptable internal consistency ($\alpha \geq .07$).²⁷ A total of 46 items were used to measure teachers' behavioral intentions. Items included behavioral beliefs (3), behavioral outcomes (15), normative beliefs (12), motivation to comply (4), control beliefs (6), perceived power (3), and actual behavior (3). Forty-three of the items used a 5-point Likert-type scale from 1 (strongly disagree) to 5 (strongly agree). The 3 behavior items used a 4-point Likert-type scale from 1 (never) to 4 (always). Finally, teachers were asked what grade they taught and the number of years they had taught.

Table 1. Characteristics of Teachers in Participating School Districts

Demographics	District 1 Teachers, n (%)	District 2 Teachers, n (%)	District 3 Teachers, n (%)
Gender			
Female	66 (92)	127 (98)	133 (97)
Male	6 (8)	3 (2)	4 (3)
Race			
White	41 (57)	113 (87)	129 (94)
Black	31 (43)	17 (13)	5 (4)
Other	0	0	3 (2)

Note: District 1 teachers, n = 72; District 2 teachers, n = 130; District 3 teachers, n = 137.

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