Relationship between health belief model constructs and elementary teachers use of food rewards

by

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Abstract

Background: Teachers' actions can influence student health and eating preferences. However, few school policies adequately address classroom food practices. Despite recommendations to the contrary, food rewards are often used to manage student behavior or to recognize academic success.

Objective: To examine the association between elementary teacher use of food rewards and constructs of the Health Belief Model (HBM).

Methods: Elementary school teachers (n = 256) from schools located within the midwestern region of the United States completed an online survey which included demographic questions and rating scales to measure a) the types and frequency of classroom food rewards, b) perceived health and wellbeing threats associated with the use of food rewards, c) perceived barriers to refraining from the use of food rewards, and d) awareness of food policy cues relating to classroom food rewards. Pearson correlation coefficients were used to measure the association between food reward frequency and scores for each of the HBM constructs. Multiple regression analysis was used to predict food reward frequency and scores for perceived threat, perceived barriers to refraining from the use of food rewards, and school food policy cues.

Results: With 56% of teachers reporting its use at least occasionally, candy was the most frequently utilized food reward. Additionally, all but 14% (n = 35) reported that they used food rewards during the 30-day period prior to the survey. A majority of teachers either disagreed or strongly disagreed that using food rewards would lead to poor eating habits (n = 156, 61.3%) or would distort a child's relationship with food (n = 142, 55.5%). In the bivariant analysis, food reward frequency was negatively correlated with school food policy cues ($r = -.22$, $p < .01$) and positively correlated with barriers to refraining from using food rewards ($r = .47$, $p < .01$). The

multiple regression analysis predicted food reward frequency [R^2 = 22, F (3,247) 23.62, $p <$ .001], but only barriers refraining from using food rewards (β = .45; $p <$ .001) contributed significantly to the prediction.

Conclusion: Teachers do not understand the risks associated with the use of food rewards. Barriers to refrain from using food rewards, but not perceived threat or school food policy cues to action, influenced the frequency of food rewards in this sample of elementary school classrooms. The findings of this study have future implications for efficacious policy and training for the discontinuation of the use of food rewards in classrooms.

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Acknowledgements

When I was about 10 years old my uncle asked me where I wanted to go to college when I grew up. Being a kid from New York, I jokingly responded, “Kansas.” While the ten-year-old me had no idea what life would have in store for her, the fact that I have now completed two degrees as a K-State Wildcat feels indescribably serendipitous. My time in school has not been without its struggles but it has been overcoming those low points that has increased my own self confidence and I truly feel like I could conquer all.

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Chapter 1 - Introduction

Food rewards are frequently used by parents and other caregivers to manage child behavior or to encourage desired behavior such as eating a new food. Most often these rewards are highly palatable foods such as candy, desserts, or high fat snacks. While food rewards may produce short term results, they may also produce unintended and negative consequences (Fedewa & Davis, 2015). In a study by Jansen et al. (2020), subjecting children to the use of food rewards at age four was found to be associated with increased emotional and picky eating scores at age nine. Highly palatable foods that are used as rewards have been shown to override basic homeostatic energy controls as well as decrease desirability of alternate food items (Alonso-Alonso et al., 2015). This is especially the case if the more palatable food (i.e., contingent food) is used to encourage consumption of a perceived healthier food. Additionally, adults who reported higher frequency of food rules in childhood were more likely to engage in disordered eating behaviors such as bingeing and restricting (Puhl & Schwartz, 2003). Concerns surrounding the use of food as a reward include decreased intrinsic motivation to achieve tasks, increased risk for eating disorders, as well as eating in the absence of hunger leading to weight gain (Fedewa & Davis, 2015).

Childhood eating patterns have been the focus of continued research to slow the prevalence of childhood obesity. Trends in childhood obesity prevalence show a rise over time with rates around 8% in the early 1980's increasing to nearly 20% in 2020 (Bryan et al., 2021; Ogden et al., 2016). Additional negative health outcomes arising from the COVID-19 pandemic, which saw sweeping lockdowns, decreased physical activity, and increased food insecurity, raise further concerns over childhood weight status in the United States (Lartey et al., 2023).

Children are a unique population in that, they lack the autonomy to make individual food choices and are subject to their environment relying on caregivers to observe best practices. Children also spend large amounts of their formative years in school where they are not only learning core curriculum such as English, math, and social studies, but growing socially and emotionally and forming the foundation of lifelong habits. It is for this reason that schools have become a focal point of interest in the public health crisis of childhood obesity. Changes to the school environment to increase healthfulness have been ongoing and are reflected in mandatory wellness policies. However, most of the rules and policies have solely focused on addressing foods provided outside of the classroom such as in the cafeteria, vending, and fundraising and have neglected the behaviors and habits that occur inside the classroom. Offering food rewards in the classroom is one such behavior that does not follow best practice but is infrequently addressed appropriately in policy. Teachers can have a lasting influence on their students which makes their classroom action an important element to consider when reviewing health policy.

Local Wellness Policies

Local Wellness Policies (LWP) were made a mandatory requirement for Local Educational Agency's (LEA) with the passing of the Child Nutrition and Special Supplemental Nutrition Program for Women, Infants, and Children Reauthorization Act of 2004 and later strengthened by the Healthy Hunger Free Kids Act (HHFKA) of 2010. LWP are written documents that "guide local education agencies or school districts efforts to establish a school environment that promotes students' health, well-being, and ability to learn." These written wellness policies are mandatory for any school or school system that receives funding through

the School Breakfast Program or National School Lunch Program. The HHFKA would change dietary standards in schools with a goal of preventing childhood obesity and reducing childhood hunger. Since the HHFKA took affect the number of wellness policies has increased and the strength of these policies has been measured (Belansky et al., 2010; Micha et al., 2018; Turner & Chaloupka, 2012; Wall et al., 2012). A review of the literature shows increased interest in this topic immediately following the establishment of the HHFKA, but as the novelty of the new requirements declined, published research on the effectiveness of these school wellness policies has dwindled.

Smart Snacks at School Rule

In 2016, the United States Department of Agriculture (USDA) issued a Final Rule that would further strengthen the wellness policy requirements. Within this document the Smart Snacks in School rule required policies be made regarding some, but not all competitive foods sold or provided on school campuses. Competitive foods are any foods that may be sold or provided during the school day that are not reimbursable through federally funded nutrition programs. These competitive foods include fundraisers, vending, and a la cart sales. The Smart Snacks rule requires these foods to meet certain nutrient requirements in regards to sodium, sugar, fat, and energy (USDA, 2016). The USDA's Final Rule guided U.S. schools as they developed stronger policies around competitive foods but did not include compulsory standards to reduce or remove other forms of unhealthy foods such as foods being used as rewards. Foods used as a reward within classrooms were not explicitly addressed within the Smart Snacks ruling which took effect for the 2017-2018 academic year.

Policies and Weight Status

Despite the changes that have occurred to increase the healthfulness of the school food environment the efficacy of school food policies on reducing childhood BMI are mixed. A systematic review and meta-analysis of 91 studies and interventions found that policies only modestly impact childhood intake with decreases in BMI not frequently identified (Micha et al., 2018). In contrast, a study conducted by Chandran et al. (2023), comparing BMI z-scores before and after the enactment of the HHFKA noted a significant decrease in childhood BMI z-scores among 5-18 year olds. As discussed by Fox et al. (2009), children at all education levels are estimated to be consuming greater than 150 calories daily from competitive food sources while the caloric gap contributing to childhood weight gain has been estimated to be less than 150 daily calories (Plachta-Danielzik et al., 2008; van den Berg et al., 2011; Y. C. Wang et al., 2006). The inconsistency of results indicates additional research may be needed to examine the overall dietary intake patterns of children and nutritional quality of foods consumed at schools including those outside of federally funded nutrition programs.

Policies and Food as Reward

The practice of using food as a reward within classrooms remains a common practice with limited oversight from federally mandated policies. According to the 2016 School Health Policies and Practice Study, approximately 50% of schools nationwide had policies that prohibited or strongly discouraged the use of food as a reward or incentive (Center for Disease Control and Prevention, 2016). However, a disconnect between established policy and the implementation of said policies has also been documented (Profili et al., 2017; Turgeon, 2013).

Policies written to exceed the standard may not be as strongly worded or implemented as policies that are strictly mandated. Written LWPs with weak language are open to interpretation and with no oversight, motivation to enforce these policies may not be a top priority for schools who have competing obligations. In a review of Colorado schools, LWPs nutrition guidelines were found to have low strength scores in the absence of strong language such as "require" and "mandate" (Belansky et al., 2010). This study of Colorado LWPs confirmed earlier findings that the inclusion of non-mandated policies were uncommon (Metos & Nanney, 2007). Furthermore, the USDA (2022) recommends the involvement of key stake holders in the wellness policy development such as parents, teachers, and students, but this recommendation may not always be followed (USDA, 2022). Wellness policies may be written without input from those who oversee the implementation process, specifically teachers. The lack of teacher involvement may be responsible for the disconnect between policy existence and policy implementation. If schools have a policy to discourage or ban the use of food as a reward, the policy must be well known and discussed. Allowing teachers to partake in the policy making process has the potential to increase compliance. Unfortunately, teachers often lack certainty on the existence of their wellness policies (Arcan et al., 2013).

Food as Reward

Across several studies, teachers overwhelmingly support a healthy school environment (Arcan et al., 2013; Findholt et al., 2016; Kubik et al., 2002; Rossiter et al., 2007). Despite supporting a healthier school environments teachers frequently engage in the use of rewards among their students. Foods commonly used as rewards tend to be energy dense while nutrient

poor, including candy, cookies, and other snack foods. The use of food rewards has been documented across all grades and studied in elementary, middle, and high school settings (Findholt et al., 2016; Hollingworth et al., 2010; Kubik et al., 2002; Metos et al., 2019). While not widely studied, research indicates a high prevalence of using food as a reward in the classroom. In a study of 87 elementary and middle school teachers in rural Oregan, 85.9% of teachers reported using candy as a reward and one-third used other non-candy edible rewards in the classroom (Findholt et al., 2016). In a study by Arcan et al. (2013), 64% of kindergarten and first grade teachers used candy as a reward or incentive for behavior and 59.7% reported keeping candy in their classroom specifically to give to their students.

In one study, teachers were offered the opportunity to provide written statements as a part of their survey responses. In this study Metos et al., (2019), 641 teachers were surveyed and only 6% reported never using food as a reward. There were 29 comments provided on the topic of stopping the use of food as a reward indicating how difficult it would be to end the practice. With one teacher commenting, “We could use rewards in our classrooms that are not food or candy- but it is difficult. Children work for candy, and it is easy to supply.”

The studies that exist on the topic overwhelmingly point to a high prevalence of the use of food inside the classroom whether it be for reward or behavior management. However, there is one noted exception in which Hamilton et al. (2021) found that on average teachers reported using food less than once per month in their classrooms.

Limitation of the current food reward literature are the cross-sectional nature of the research methodology and reliance on self-reported data. Cross sectional research primarily examines prevalence at a given time and does not follow participants over time by collecting prospective data (Thiese, 2014). Additionally, cross sectional studies are prone to several types

of biases, among them sampling (who is selected to participate), non-response (people who complete vs do not complete a survey), and recall (respondents' ability to remember past experiences). However, cross-sectional studies are affordable and relatively quick to conduct and are frequently used to measure prevalence or to generate hypotheses (Wang & Cheng, 2020).

Health Belief Model

Health behavior theories are comprised of interrelated concepts, definitions, and propositions which present a systematic overview of a health issue by specifying relations among constructs to explain and predict a given health behavior or outcome. The Health Belief Model (HBM) is one of the oldest and most widely used health behavior theory. The HBM originated out of a need to understand the weak provocation of individuals to be screened for public health threats such as tuberculosis, cervical cancer, and dental disease among others (Rosenstock, 1974). While the initial use of the HBM increased understanding for researchers and public health professionals about who would and who would not utilize preventative health screenings, the HBM's use has expanded to both predict intention to engage in a health behavior and to inform the design of educational programming (Glanz & Bishop, 2010; Jones et al., 2014).

Constructs of this model are divided into categories: perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action, and self-efficacy. Self-efficacy is defined as one's personal belief and confidence in their ability to complete a certain task and was added to the HBM theory in the late 1980's (Bandura, 1977; Rosenstock et al., 1988). Understanding self-efficacy is an important factor in connecting intent to behavioral actions, however; this aspect of the HBM was not included in this study. Furthermore, modifying variables have been recognized as playing an influential role in individual perceptions of the key

constructs (Rosenstock, 1974). Modifying factors include basic demographics such as race and gender, income, education, and health literacy.

Purpose

Gaining information using a health theory approach provides valuable information on how to best craft effective interventions. The HBM was chosen as the theoretical basis to explore the potential motivations of classroom elementary teachers for or against the use of food rewards. Despite the HBM's wide usage in research, the literature is void of studies in which the model has been applied to the practice of using food rewards in elementary school classrooms.

As such, the purpose of this study was to measure the association between select Health Belief Model constructs and the use of food rewards in elementary school classrooms. Specifically, perceived threats, perceived barriers, and cues to action were explored. Modifying factors in the form of demographics (e.g. gender, education, and years of teaching) were also examined.

Hypotheses

The perceived threat associated with the use of classroom food rewards will be negatively associated with the use of classroom food rewards.

Perceived barriers to refraining from the use of classroom food rewards will be positively associated with the use of classroom food rewards.

Policy cues to action will be negatively associated with the use of classroom food rewards.

Significance

Childhood obesity has been of major concern in the U.S. for many years with modest changes to dietary intake but not adiposity rates through school nutrition policy (Micha et al., 2018). With the recent publication by the American Academy of Pediatrics "Clinical Practice Guidelines for the Evaluation and Treatment of Children and Adolescents with Obesity" in early 2023, the issue of childhood obesity was once again in the nation's spotlight. The new guidelines have made controversial waves in the medical community with the recommendations of intensive treatment for children starting at age two and gives indication of pharmaceutical usage and bariatric surgery given certain criteria (Hampl et al., 2023). It is estimated that by the year 2050, 57% of children aged 2-19 will have obesity when they reach adulthood (Ward et al., 2017). This estimation lends validity to the continued and growing importance of initiating healthy eating patterns in childhood and adolescence.

Schools are associated with learning and development in the formative years of children, and the behaviors and choices made in between the established lessons may be just as important as the developed curriculum. The revision to the USDA's final rule helped guide U.S. schools as they developed stronger policies around competitive foods (e.g. foods sold in vending machines and fundraisers) but did not provide guidance on how to reduce other forms of unhealthy foods to include their use as rewards in the classroom. Despite some school districts taking the steps to include language within their policies banning or discouraging the use of foods as rewards in the classroom, the practice is still observed. Due to the continued practice, it is important to understand what additional steps should be taken to end this practice in U.S. classrooms.

Chapter 2 - Methods

Study Design

A cross-sectional design was used to measure the association between select Health Belief Model constructs and the use of food rewards in elementary school classrooms. Following instrument development and pilot testing a 38-item survey was distributed to elementary school teachers in seven Midwestern states. Data collection commenced in November of 2023 and ended in December of 2023. The study was approved by the Kansas State University Institutional Review Board (IRB), approval number 11761 (Appendix A).

Instrument Development

Instrument development was undertaken to create a list of novel questions that aligned with the use of food rewards as well as with the Health Belief Model constructs of perceived threat, perceived barriers, and cues to action. Additional questions were added to measure participant characteristics as well as details regarding the types of food rewards used. The draft questionnaire was crafted and disseminated to professionals in both education (n = 3) and nutrition research (n = 2). The collection of expert feedback was approved by Kansas State University IRB, approval number 11660 (Appendix B). Survey items found to not be applicable or difficult to comprehend were either reworded or removed. Following edits from expert feedback, the survey was piloted among the target population of elementary school teachers within the state of Kansas (n = 90).

Expert Feedback

The purpose of collecting expert feedback on the original draft of questions was two-fold. First, to increase the readability and comprehensibility of the questions asked among the target

population. Second, to increase the relevance of the questions asked and ensure completeness as it related to the theoretical framework. Feedback was gathered from elementary teachers (n = 3) and nutrition professionals who had conducted research in this subject matter previously (n = 2). Feedback was largely gathered by e-mail communications with one face to face conversation held via Zoom with a nutrition professional. A copy of the feedback form may be found in Appendix C. The comments and feedback led to several edits to the questions including rewording statements to improve readability and relevance. For example, the statement "*Classroom food rewards undermine good nutrition,"* was changed to "*Classroom food rewards undermine healthy nutrition practices."* Additionally, several statements were removed due to relevancy, which reduced the length of the survey. For example, the statements regarding cues to action contained four items and in the final version contained two items. A definition of policy was also added to the instruction before the cues to action statements to aid in clarity based on feedback from expert reviewers. See Table 2.1.

Table 2.1 Expert Feedback Changes

Original Cues to Action Statements	Reviewer Comments	Final Cues to Action Statements
My school (school district) has a student wellness policy.	"There should be a district and a separate policy for each school. Which do you want to know about?"	My school district has a policy stating food should not be used as reward.
I have been provided with my school districts wellness	"Very unlikely teachers have been provided a hard	

policy.	copy. Maybe ask, I have access to my school's wellness policies"	
I have read my school districts wellness policy.	"I'm not sure this is useful to your research question."	My school has a policy stating food should not be used as reward.
Our school wellness policy is enforced.	"Enforced is too vague. Again, will this help with your research question? How do you measure "enforced"?"	

Pilot Testing

A recruitment e-mail was designed and sent to elementary school principals and administrators throughout the state of Kansas. The recruitment message briefly explained the study, provided a link to the survey hosted on Qualtrics, and a prompt to forward the e-mail among elementary teachers. To ensure the intended audience was reached, only work e-mails were used in the recruitment phase. E-mail addresses were found via publicly available data on the Kansas State Department of Education website. To increase participation, a second recruitment e-mail was sent two weeks after the initial request. An incentive of $10.00 in the form of an electronic gift card was offered to participants.

The revised survey was pilot tested from September 2023 – October 2023 among Kansas elementary school teachers. The distribution of the survey was conducted by contacting principals throughout the state and prompting them to forward the recruitment e-mail and survey link to teachers in their building. A copy of the recruitment e-mail may be found in Appendix D. Contact information was sourced from the State of Kansas Department of Education website. E-

mail messages returned undelivered due to organizational security features and discontinued employment were common. A follow-up e-mail was sent two weeks after the initial contact to increase participation. There were 90 completed responses at the time of closing the survey.

Inclusion criteria for the pilot study included 1) being 18 years of age or older, 2) being a certified/licensed teacher in the state of Kansas 3) currently teaching grades Kindergarten through fifth grade, and 4) being English-speaking. Respondents to the pilot survey included teachers whose job description was not primary classroom instruction such as music and art teachers, speech pathologists, occupational school therapists, and others. However, the intention was to only collect data from classroom teachers. As a result, additional screening questions were added to the final survey to ensure greater accuracy for reaching the target population. Upon review of the results of the pilot study, an additional statement "*Rewarding my students with food makes me feel good,"* was added. Additionally, responses to the frequency of each type of food reward categories collapsed from an eight-item list to a 6-item list based off of item selection frequency. Crackers were added to the *"chips and pretzels"* category while juice was added to the *"soda and pop"* item. The intention of collapsing these categories was to reduce survey length while still maintaining logical categories.

Measures

Use of Food Rewards

A set of statements containing five items was designed to measure how frequently teachers used classroom food rewards. In this set teachers were asked how often they provided food rewards for scenarios including, good behavior, attendance, task completion, milestones,

and doing well on assignments. Frequency scale response categories were “never,” “1-2 times a month,” “1-2 times a week,” “3-4 times a week,” and “daily.” Responses were assigned a value from 1 (never) to 5 (daily), with assigned values increasing as frequency increased.

Perceived Threat

A set of six statements were developed to measure perceived health threats associated with the use of classroom food rewards. Two of the six items were reverse coded to ensure consistent responses. These statements were then reverse scored from 5 (strongly disagree) to 1 (strongly agree). Sample statements included “*Classroom food rewards undermine healthy nutrition practices,”* and, *“Rewarding students with food is not a big deal to me.”* Teachers were asked to rate their agreement on a Likert scale. Likert scale choices included, “strongly disagree,” “somewhat disagree,” “neither agree nor disagree,” “somewhat agree,” and “strongly agree.”

Perceived Barriers

A set of 6 items representing barriers towards the discontinuation of the practice of food rewards was used. Items included statements such as *“The other teachers in my building use food rewards in their classrooms”, and “Rewarding my students with food makes me feel good.”* Respondents were asked to rate their agreement on a five point Likert Scale from “strongly disagree” to “strongly agree.” All six items asked respondents to assess situational statements that may serve as barriers towards the discontinuation of the practice of classroom food rewards. Respondent responses were scored 1 (strongly disagree) to 5 (strongly agree).

Cues to Action

Cues to action as it relates to the existence of a policy were assessed in a two-item set of statements. Teachers were asked to indicate their level of agreement on a 5-point Likert scale. Statements included *"My school district has a policy stating food should not be used as a reward,"* and, *"My school has a policy stating food should not be used as a reward."* Likert scale choices included, "strongly disagree," "somewhat disagree," "neither agree nor disagree," "somewhat agree," and "strongly agree."

Participant Recruitment

An e-mail was sent to elementary school principals, administrators, and teachers among seven Midwestern states including Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, and South Dakota. The recruitment e-mail was sent in November with follow-up contact occurring two weeks after the initial e-mail. The recruitment e-mail stated the purpose of the study, a link to the electronic survey, and an invitation to either pass along the survey or to complete the survey. Incentives were provided in the form of a lottery system with eighteen $100.00 gift cards available. Participants were prompted at the end of the survey to provide a contact e-mail to be entered into the drawing. The survey was closed for responses on December 19, 2023, with 256 responses recorded.

Data Analysis

Descriptive analyses were performed to characterize the sample, portray the reported use of specific food reward types, and summarize responses to each set of questions designed to

operationalize food reward use as well as the three HBM constructs under study (i.e., perceived threat, perceived barriers, and policy cues to action). For each question set designed to operationalize the study variables, principal component analysis with varimax rotation and Cronbach's alpha values were determined to assess construct validity and internal consistency, respectively. Relationships between the resulting scales were explored using Pearson correlation coefficients. Multiple regression analysis was conducted with perceived threat, perceived barriers, and policy cues to action scale scores as independent variables and food reward scale scores as the dependent variable. All data were analyzed using IBM SPSS Statistics for Windows, Version 29.0 (IBM, Armonk, NY, USA).

Chapter 3 - Results

A total of 256 teachers from seven states and 92 different school districts completed the survey. Most respondents identified themselves as being white (92.6%) and female (90%). There was relatively even participation among all grade levels. However, 20.7% indicated that they taught a grade other than K-5. The majority of teachers had either a bachelor's (48.8%) or a master's degree (47.3%) and about half (n = 132) have been teaching for ten years or less.

Table 3.1 Participant Demographics

Variable	n	%
Gender		
Male	20	7.8
Female	234	91.4
Prefer not to Answer	2	0.8

Ethnicity		
White	237	92.6
Non-White	11	4.4
Prefer not to Answer	8	3.1
Grade Taught		
Kindergarten	43	16.8
1st grade	24	9.4
2nd grade	31	12.1
3rd grade	37	14.5
4th grade	33	12.9
5th grade	35	13.7
Other	53	20.7
Student: Teacher Ratio		
≤ 1:10	45	17.6
1:11 – 1:15	37	14.5
1:16-1:20	81	31.6
1:21-1:25	78	30.5
≥1:26	15	5.9
Experience		
≤1 year	10	3.9
2-5 years	69	27.0
6-10 years	53	20.7
11-16 years	42	16.4
17-20 years	15	5.9
21-25 years	32	12.5
≥26 years	35	13.7
Education		
Bachelors	125	48.8
Masters	121	47.3
Professional	8	3.1
Doctorate	2	0.8

State		
Iowa	20	7.8
Kansas	32	12.5
Minesota	7	2.7
Missouri	61	23.8
Nebraska	5	2.0
North Dakota	39	15.2
South Dakota	24	9.4

Only 14% (n = 35) of respondents indicated that they did not use any form of food reward in the 30 days prior to the survey. Candy was the most frequently reported food reward, with 19.1% of teachers indicated that they never used candy as a reward in the last 30 days compared to snack foods like chips, pretzels, crackers (52.3%), fruit (gummy) snacks (56.6%), granola bars (60.5%) or drinks like soda, pop, or juice (74.6%). Table 3.2.

Table 3.2 Food rewards over past 30 days

		Never (%)	Seldom (%)	Sometimes (%)	Often (%)	Daily (%)
Type of Food Reward						
	Candy	49 (19.1)	64 (25.0)	88 (34.4)	41 (16.0)	14 (5.5)
	Chips/pretzels/crackers	134 (52.3)	43 (16.8)	50 (19.5)	21 (8.2)	8 (3.1)
	Gummy (fruit) snacks	145 (56.6)	43 (16.8)	41 (16.0)	23 (9.0)	4 (1.6)
	Soda/pop/juice	191 (74.6)	48 (18.8)	15 (5.9)	1 (0.4)	1 (0.4)
	Granola/snack bar	155 (60.5)	39 (15.2)	41 (16.0)	17 (6.6)	4 (1.6)
	Other	167 (65.2)	37 (14.5)	36 (14.1)	11 (4.3)	5 (2.0)

Instrument Evaluation

Principal component analysis of the use of food rewards questions, the perceived barriers to healthy eating questions, and the cues to action questions resulted in the identification of a single dimension for each set with the retention of all items. Cronbach alpha levels ranged from 0.77 - 0.97. Although, the cues to action scale alpha level were found to be high ($\alpha = 0.97$), the statements were similar with subtle differences but ultimately tested different concepts. Individual scale alpha levels can be found in Tables 3.4 and 3.5.

Principal component analysis of the barriers scale resulted in the identification of one dimension with the retention of six of the nine items. Cronbach alpha for the six-item barriers scale was 0.77. It is notable that as opposed to the retained items, all removed statements were written in the negative, meaning, they asked the respondent to consider things that "do not" or "have not" occurred which may have influenced the statement's performance. However, analysis of the remaining three items suggested the items were unrelated to one another. See Table 3.4.

Use of Food Rewards Scale

Teachers were more likely to use food as a reward to celebrate a milestone such as the last day of school or the completion of an exam or project (n = 185, 73.3%) or as recognition for good behavior (n = 160, 62.5%). Teachers were least likely to use food rewards for school attendance. See Table 3.3.

Bivariant analyses revealed that scores on the Use of Food Rewards Scale were positively correlated with scores on the Perceived Barriers Scale ($r = .47$, $p < .01$) and scores on the Policy Cues to Action Scale ($r = .22$, $p < .01$). See Table 3.5.

Perceived Threat Scale

A majority of teachers either disagreed or strongly disagreed that using food rewards would lead to poor eating habits (n = 156, 61.3%) or would distort a child's relationship with food (n = 142, 55.5%). Nearly one-half (n = 110, 42.6%) either disagreed or strongly disagreed with classroom food rewards undermine healthy nutrition practices. Forty-three percent (n = 110) either agreed or strongly agreed that food rewards are harmless while 43.8% (n = 112), and 48% either agreed or strongly agreed that food rewards do not place their student's health at risk or that using rewards are a big deal, respectively. See Table 3.4.

Bivariant analyses revealed that scores on the Perceived Threat Scale were correlated with scores on the Perceived Barriers Scale ($r = .24$, $p < .01$) and scores on the Cues to Action Scale ($r = -.14$, $p < .05$). See Table 3.5.

Perceived Barriers Scale

The overwhelming majority of teachers responded that they see other teachers using food rewards in their building (75.6%, n = 194) and that they believe that their students like receiving food rewards in the classroom (82.4%, n = 211). The majority of teachers (40.6%, n = 104) responded that they like providing food rewards but felt neutral when asked if providing food as a reward made them feel good. Nearly 70% of teachers responded as unsure when asked if they

believed that their students' parents found food rewards a good idea or not and only a small majority (42.1%, n = 108) believed that the use of food rewards made coming to school more fun. See Table 3.4.

Bivariant analyses revealed that scores on the Perceived Barriers Scale were correlated with scores on the Cues to Action Scale ($r = -0.34$, $p < .01$)

Policy Cues to Action Scale

Teacher's over-whelming indicated that they did not believe that their school or district had a policy against the use of food rewards. When asked about having a policy at the district level only 11.3% agreed or strongly agreed that their district had a policy. Similar responses were recorded in relation to policy at the school level with a slight increase in disagreement.

Multiple Regression Analysis

The multiple regression analysis predicted food reward frequency [$R^2 = 22$, $F(3,247)$ 23.62, $p < .001$], but only barriers to restricting food rewards ($\beta = .45$; $p < .001$) contributed significantly to the prediction.

Table 3.3 Behavior Scale Responses

Use of Food Rewards Scale (n=256, α=0.719)	Mean Score	Never n (%)	1-2 times per month n (%)	1-2 times per week n (%)	3-4 times per week n (%)	Daily n (%)
I offer my students food rewards for good behavior.	2.02 (1.06)	96 (37.5)	93 (36.3)	43 (16.4)	15 (5.9)	10 (3.9)
I offer my students food rewards for good attendance	1.09 (0.41)	239 (93.4)	13 (5.1)	1 (0.4)	3 (1.3)	0
I offer my students food rewards when tasks are completed on time.	1.42 (0.90)	194 (75.8)	35 (13.7)	15 (5.9)	5 (2.0)	7 (2.7)
I offer my students food rewards to celebrate a milestone (e.g. last day of school, completion of an exam, completion of a project).	1.88 (0.72)	71 (27.7)	155 (60.5)	20 (7.8)	9 (3.5)	1 (0.4)
I offer my students food rewards when they do well on an assignment, quiz, or test.	1.46 (0.78)	173 (67.6)	55 (21.5)	21 (8.2)	6 (2.3)	1 (0.4)

Table 3.4 Health Belief Model Scale Responses

Health Belief Model Constructs	Mean Score[a]	Strongly Disagree n (%)	Disagree n (%)	Neither agree nor disagree n (%)	Agree n (%)	Strongly Agree n (%)	No Response n (%)
Perceived Threat Scale *(n=256, α=0.86)*							
Classroom food rewards undermine healthy nutrition practices.	2.73 (1.15)	45 (17.6)	64 (25)	74 (28.9)	60 (23.4)	13 (5.1)	-
Classroom food rewards are harmless.	2.79 (1.14)	17 (6.6)	58 (22.7)	71 (27.7)	74 (28.9)	36 (14.1)	-
The use of food rewards will lead to poor eating habits.	2.33 (1.06)	62 (24.2)	95 (37.1)	57 (22.3)	37 (14.5)	5 (2)	-
Using food as a reward does not place my students health at risk.	2.79 (1.17)	21 (8.2)	53 (20.7)	70 (27.3)	74 (28.9)	38 (14.8)	-
Rewarding students is not a big deal to me.	2.73 (1.17)	22 (8.6)	47 (18.4)	63 (24.6)	88 (34.4)	36 (14.1)	-
Classroom food rewards will distort a child's relationship with food.	2.41 (1.11)	64 (25)	78 (30.5)	67 (26.2)	40 (15.6)	7 (2.7)	-
Perceived Barriers Scale *(n=251, α = 0.77)*							
Food rewards makes coming to school more fun for my students.	3.08 (1.16)	38 (14.8%)	29 (11.3%)	76 (29.7%)	91 (35.5%)	17 (6.6%)	5
My students like getting food as a reward in the classroom.	4.17 (0.96)	10 (3.9%)	4 (1.6%)	26 (10.2%)	104 (40.6%)	107 (41.8%)	5
I like providing food rewards to my students.	3.18 (1.09)	27 (10.5%)	28 (10.9%)	92 (35.9%)	82 (32%)	22 (8.6%)	5
The other teachers in my building use food rewards.	3.95 (0.86)	5 (2.0%)	8 (3.1%)	44 (17.2%)	131 (51.2%)	63 (24.6%)	5
My students' parents think it is a good idea to use food rewards in the classroom.	3.18 (0.68)	8 (3.1%)	6 (2.3%)	179 (69.9%)	49 (19.1%)	9 (3.5%)	5
Rewarding my students with food makes me feel good.	2.82 (0.97)	34 (13.3%)	31 (12.1%)	144 (56.3%)	31 (12.1%)	11 (4.3%)	5

Cues to Action Scale *(n=251, α=0.97)*							5
My school district has a policy stating food should not be used as a reward.	2.02 (1.20)	128 (50%)	29 (11.3%)	65 (25.4%)	19 (7.4%)	10 (3.9%	5
My school has a policy stating food should not be used as a reward.	1.99 (1.19)	130 (50.8%)	32 (12.5%)	61 (23.8%)	18 (7.0%)	10 (3.9%)	5

Notes

Table 3.5 Relationship Between Teacher Behaviors, Perceived Threat, Perceived Barriers, and Policy Cues to Action

	Use of Food Rewards	Perceived Threat	Perceived Barriers	Policy Cues to Action
Scale scores				
Use of Food Rewards	1	0.08	0.466**	-0.222**
Perceived Threat	0.08	1	0.244**	-0.135*
Perceived Barriers	0.466**	0.244**	1	-0.341**
Cues to Action	-0.222**	-0.135*	-0.341**	1

** Correlation is significant at the p <0.01 level (2-tailed). *Correlation is significant at the p < 0.05 level (2-tailed)

Chapter 4 - Discussion

The aim of this study was to compare the behavior of using food as a reward against key constructs of the health belief model among elementary school teachers to better understand this practice. The results indicate that perceived barriers predict the use of food rewards whereas perceived threats and policy cues to action as explored in this study do not. Of the barriers, perceptions of a student's acceptance of food rewards and the knowledge of other teachers' practices were most prominent. The frequent use of food rewards was unsurprising as the findings were consistent with other recorded food related classroom practices in which candy is used in some way in the classroom. (Arcan et al., 2013; Fedewa & Davis, 2015; Findholt et al., 2016; Metos et al., 2019). Using candy specifically may be viewed as a classroom management strategy because of its affordability, portability, and is often perceived to be highly desired by the children. While it may seem that rewarding children with food is their preferred choice, children are unlikely to be asked for a preference before being provided with the reward. In one study, children in grades first through fifth preferred social rewards (e.g. praise from teacher) and activity related rewards (e.g. free time, being picking game at recess) over anything tangible including foods and candies (Fantuzzo et al., 1991). This topic was explored in middle and high school students where results were more mixed with students indicating high but fairly equal preferences for snacks, free-time, and positive notes sent home (Tyre et al., 2023). This preference towards snacks in older students could be due in part to conditioning. If children become accustomed to receiving food as a reward for academic success and engaging in desirable behavior from parents, guardians, and teachers, they may be more likely to come to expect such reward even in the higher grades. These students may also be more cognizant of the possible rewards and their availability. While this may appear to indicate food rewards are more

preferable, food rewards were not ranked more desirable compared to earning free time in the study by Tyre et al. (2023), which in the absence of nuisance, does not indicate preference for one or the other. If students prefer other types of rewards and using food rewards are not in observation of best practice, additional steps should be taken towards eliminating the practice.

Interestingly, as an alternative to food rewards token economies have been discussed as a possible solution to the discontinuation of the use of food to enforce good behavior in the classroom. In a token economy, students are given stickers, punch cards, tickets, or other small tokens that can then be traded for small prizes or activities such as wearing pajamas to school or watching a movie. Token economies focus on the use of extrinsic motivation and have been shown to elicit short-term desired behavior (Deci et al., 1999). However, food rewards are frequently used within the token economy with students being able to exchange their tokens for candy or snack foods (Kim et al., 2022). In this scenario food is being used to reinforce a desired behavior or outcome and therefore should be discouraged and alternatives prizes used.

Of note in this study is that teachers indicated that they did not believe this practice of using food to reward students would be harmful, however this belief did not significantly predict the use of food rewards. There was a small but positive correlation between perception and threats and barriers meaning that these two may be related. It may be that educators know that using food within the classroom is discouraged but do not understand the reason why and therefore do not take personal steps to eliminate the practice. Educating teachers on the risks associated with childhood use of food rewards would be recommended as increasing the perception of threat effects motivation for engaging in behavior (Sheeran et al., 2014).

Most teachers definitively responded that their school and district did not have a policy against the use of food rewards. Strongly worded written policies are associated with improved

adherence to the policy but as identified in this study dubiety exists as to whether a policy exists at the district or school level with many teachers confident that their area lacks a policy addressing food rewards. This corroborates previous research that found that teachers were uncertain if their school had a local wellness policy (Arcan et al., 2013). If there is a policy, the policy is not well known, or the policy is not enforced and therefore disregarded. This thought is reflected in this study because teachers identified that they knew other educators in their buildings also use food rewards. Seeing others engaged in a practice without a repercussion may be reinforcing of the behavior. As discussed previously, it is unlikely for policies to be written in a way that exceeds the standard and if the USDA has not set a standard of mandatory removal of the use of food as reward, schools will be unlikely to independently adopt a strict, enforceable policy (Metos & Nanney, 2007). While not found to be significantly correlated with behavior in this study, having a policy could decrease the use of food rewards with the use of strong direct language (Belansky et al., 2010).

This study had several strengths including the regional nature of the data and the inclusion of teachers from 92 different school districts in seven states. The scales used, while novel, were evaluated by expert feedback, piloted, and subjected to psychometric evaluation before being used for hypothesis testing. An acceptable level of Cronbach alpha is generally considered to be between 0.70-0.95 which was achieved in all cases except the cues to action scale which while high (α=0.98) was determined to measure independent thoughts (Tavakol & Dennick, 2011). To the knowledge of the author there have been no other studies examining teacher behavior using food rewards and the health belief model constructs which contributes to the sparce research in this area.

Limitations of this study include the cross-sectional research design and self-reported nature of the data. Self-reported data is subject to recall bias and may reflect a subjective representation of behavior. This greatly limits the ability to identify causality. While this study included teachers from across the midwestern region of the U.S. the sample size is not representative of experiences held by all teachers that may vary by region. Screening questions were included; however, 20% of respondents indicated that they taught something other than kindergarten – fifth grade which could imply that some teachers teach multiple grades, or some respondents had primary roles outside of direct classroom instruction. Additionally, a majority of respondents had 10 years or less of experience in the field, which in previous studies, work experience was found to be negatively correlated with the use of food rewards (Metos et al., 2019). Future research may consider using a longitudinal design across several regions to capture changes that occur in classroom behavior across time and across regions.

Conclusions

Eating habits formed in childhood can last a lifetime and the school food environment plays a role in the health and well-being of children (Małachowska & Jeżewska-Zychowicz, 2021; Movassagh et al., 2017; Scaglioni et al., 2018). Exhibition of best food practices within the classroom is an important consideration given the amount of time children spend at school. This study adds to the paucity of available research exploring the use of food rewards in elementary school classrooms. As confirmed by this study, the journey towards discontinuation of the practice of food rewards is multi-faceted and not fully understood. Addressing barriers alone may affect the individual level decisions being made regarding nutrition related classroom practices, but a more holistic approach including teacher training and strong policy will likely be required to see an end to this practice.

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Appendix A - IRB Approval

KANSAS STATE UNIVERSITY | University Research Compliance Office

TO: Jennifer Hanson
Food, Nutrtn, Dietetics & Hlth
Manhattan, KS 66506

Proposal Number: IRB-11660

FROM: Lisa Rubin, Chair
Committee on Research Involving Human Subjects

DATE: 04/24/2023

RE: Proposal Entitled, "Development of rating scales to assess Health Belief Model constructs regarding the use of classroom food rewards.."

The Committee on Research Involving Human Subjects / Institutional Review Board (IRB) for Kansas State University has reviewed the proposal identified above and has determined that it is EXEMPT from further IRB review. This exemption applies only to the proposal - as written – and currently on file with the IRB. Any change potentially affecting human subjects must be approved by the IRB prior to implementation and may disqualify the proposal from exemption.

Based upon information provided to the IRB, this activity is exempt under the criteria set forth in the Federal Policy for the Protection of Human Subjects, 45 CFR §104(d), category:**Exempt Category 2 Subsection ii.**

Certain research is exempt from the requirements of HHS/OHRP regulations. A determination that research is exempt does not imply that investigators have no ethical responsibilities to subjects in such research; it means only that the regulatory requirements related to IRB review, informed consent, and assurance of compliance do not apply to the research.

Any unanticipated problems involving risk to subjects or to others must be reported immediately to the Chair of the Committee on Research Involving Human Subjects, the University Research Compliance Office, and if the subjects are KSU students, to the Director of the Student Health Center.

Electronically signed by Lisa Rubin on 04/24/2023 3:31 PM ET

203 Fairchild Hall, Manhattan, KS 66502 | (785) 532-3224 | fax: (785) 532-3278

KANSAS STATE UNIVERSITY | University Research Compliance Office

TO: Jennifer Hanson
Food, Nutrtn, Dietetics & Hlth
Manhattan, KS 66506

Proposal Number: IRB-11761

FROM: Lisa Rubin, Chair
Committee on Research Involving Human Subjects

DATE: 08/15/2023

RE: Proposal Entitled, "Classroom Food Rewards: Policy vs Practice."

The Committee on Research Involving Human Subjects / Institutional Review Board (IRB) for Kansas State University has reviewed the proposal identified above and has determined that it is EXEMPT from further IRB review. This exemption applies only to the proposal - as written – and currently on file with the IRB. Any change potentially affecting human subjects must be approved by the IRB prior to implementation and may disqualify the proposal from exemption.

Based upon information provided to the IRB, this activity is exempt under the criteria set forth in the Federal Policy for the Protection of Human Subjects, 45 CFR §104(d), category:Exempt Category 2 Subsection ii.

Certain research is exempt from the requirements of HHS/OHRP regulations. A determination that research is exempt does not imply that investigators have no ethical responsibilities to subjects in such research; it means only that the regulatory requirements related to IRB review, informed consent, and assurance of compliance do not apply to the research.

Any unanticipated problems involving risk to subjects or to others must be reported immediately to the Chair of the Committee on Research Involving Human Subjects, the University Research Compliance Office, and if the subjects are KSU students, to the Director of the Student Health Center.

Electronically signed by Heath Ritter on 08/15/2023 4:38 PM ET
On Behalf of IRB Chair

203 Fairchild Hall, Manhattan, KS 66502 | (785) 532-3224 | fax: (785) 532-3278

Appendix B - Recruitment Message

Greetings,

My name is Lizz, and I am a Master of Public Health student at Kansas State University. I would be grateful if you could forward my research study information through your channels. Kansas State University is conducting an online survey to learn more about the use of food rewards in elementary school classrooms. Your feedback is important in our efforts to learn more about this topic. Participation is completely voluntary, and this study will in no way affect employment status nor will individual results be shared.

The survey will take approximately 5 minutes to complete and there is no known risk associated with the completion of this survey. Your participation is completely voluntary, and you may exit the survey at any time. Individuals who complete the survey may choose to enter a drawing to win 1 of 18, $100.00 gift cards. Please note that those wanting to collect the gift card will be required to provide additional information.

To begin the survey please click the following link: [SURVEY LINK]

Again, your participation is completely voluntary. Data collected as a result of this survey may be used for future research studies without additional informed consent.

If you wish to discuss on any aspect of the research with an official of the university or the IRB you may contact: Lisa Rubin, Chair, Committee on Research Involving Human Subjects, 203 Fairchild Hall, Kansas State University, Manhattan, KS 66506, (785) 532-3224.

If you have any questions or concerns, please contact, Jennifer Hanson jhanson2@ksu.edu

Thank you,

Lizz Daniels, RDN, LD

[SURVEY LINK]

Appendix C - Instrument Final Version

You are invited to participate in a research study about the use of food rewards in elementary school classrooms. You are eligible to participate if you teach kindergarten - fifth grade and are a licensed teacher working in one of the following states:

Iowa
Kansas
Minnesota
Missouri
Nebraska
North Dakota
South Dakota

Your participation in this study is completely voluntary and you may remove yourself from the study at any time. The following survey will take approximately 5 minutes to complete. As a thank you, you may voluntarily enter to win 1 of 18, $100.00 gift cards.

This study is being conducted by Lizz Daniels a masters of public health student at Kansas State University. Questions can be sent directly to Lizz Daniels at eedaniels@ksu.edu.

IRB-11761

If you wish to discuss on any aspect of the research with an official of the university or the IRB you may contact: Lisa Rubin, Chair, Committee on Research Involving Human Subjects, 203 Fairchild Hall, Kansas State University, Manhattan, KS 66506, (785) 532-3224.

Q1) Are you over the age of 18?
(No)
(Yes)

Q2) Are you a licensed teacher in one of the following states?
Iowa
Kansas
Minnesota
Missouri
Nebraska
North Dakota
South Dakota
(No)
(Yes)

My primary professional role is classroom instruction in kindergarten through fifth grade:
(Yes)

(No)

Thank you for your participation in this research study, as a reminder you are eligible to complete the survey if you are a classroom teacher of grades kindergarten through 5th grade.

Please indicate your gender
(Male)
(Female)
(Non-Binary)
(Prefer not to say)

What race/ethnicity best describes you?
(American Indian of Alaskan Native)
(Asian)
(Black or African American)
(Hispanic or Latino)
(Native Hawaiian or Other Pacific Islander)
(White)
(Prefer not to answer)

Which grade do you currently teach?
(Kindergarten)
(1st grade)
(2nd grade)
(3rd grade)
(4th grade)
(5th grade)
(other)

What is the student to teacher ratio in your classroom?
(≤1:10)
(1:11 -1:15)
(1:16 – 1:20)
(1:21 – 1:25)
(≥1:26)

How many years of experience teaching do you have?
(≤1 year)
(2-5 years)
(6-10 years)
(11-16 years)
(17-20 years)
(21-26 years)
(≥26 years)

What is your highest level of completed education?

(High school)
(Bachelors' degree)
(Masters' degree)
(Professional degree)
(Doctorate degree)

What school district are you currently employed with? (Please spell out name)
_____

Below is a list of common food items. Please indicate the frequency that you have offered each of the following food items to the students in your classroom as a reward in the last 30 days.

	Never	*Rarely*	*Sometimes*	*Often*	*Daily*
Candy	O	O	O	O	O
Chips/pretzels/crackers	O	O	O	O	O
Gummy (fruit) snacks	O	O	O	O	O
Soda/pop/juice	O	O	O	O	O
Granola/snack bar	O	O	O	O	O
Other	O	O	O	O	O

Please read the following statements and indicate the frequency for each. Food rewards are defined as any food provided that are consumed within the classroom. This includes but is not limited to snack items e.g. crackers, cookies, cakes, granola bars, and gummy (fruit) snacks, and candy e.g. chocolate, hard candies, lollipops, and gum.

	Never	*1-2 times a month*	*1-2 times a week*	*3-4 times a week*	*Daily*
I offer my students food rewards for good behavior.	O	O	O	O	O
I offer my students food rewards for good attendance.	O	O	O	O	O
I offer my students food rewards when tasks are completed on time.	O	O	O	O	O
I offer my students food rewards to celebrate a milestone (e.g. last day of school, completion of an exam, completion of a project).	O	O	O	O	O

I offer my students food rewards when they do well on an assignment, quiz, or test.	O	O	O	O	O

Please read the following statements and indicate your level of agreement to each. Food rewards are defined as any foods provided that are consumed within the classroom. This includes, but is not limited to, snack items e.g. crackers, cookies, cakes, granola bars, and gummy (fruit) snacks, and candy e.g. chocolate, hard candies, lollipops, and gum.

	Strongly disagree	*Somewhat Disagree*	*Neither agree nor disagree*	*Somewhat Agree*	*Strongly agree*
Classroom food rewards undermine healthy nutrition practices.	O	O	O	O	O
Classroom food rewards are harmless.	O	O	O	O	O
The use of food rewards will lead to poor eating habits.	O	O	O	O	O
Using food as a reward does not place my student's health at risk.	O	O	O	O	O
Rewarding students with food is not a big deal to me.	O	O	O	O	O
Classroom food rewards will distort a child's relationship with food.	O	O	O	O	O

Attention check: Please select from the following choices when solving this simple math equation. This is not meant to be a trick question.
2+2=
(1)
(2)

(3)
(4)

Please read the following statements and indicate your level of agreement to each. Food rewards are defined as any foods provided that are consumed within the classroom. This includes but is not limited to snack items e.g. crackers, cookies, cakes, granola bars, and gummy (fruit) snacks, and candy e.g., chocolate, hard candies, lollipops, and gum.

	Strongly disagree	*Somewhat disagree*	*Neither agree nor disagree*	*Somewhat agree*	*Strongly agree*
Food rewards make coming to school more fun for my students.	O	O	O	O	O
My students like getting food as a reward in the classroom.	O	O	O	O	O
I do not have administrator support to use other rewards (e.g., extra recess, homework passes)	O	O	O	O	O
I like providing food rewards to my students.	O	O	O	O	O
The other teachers in my building use food rewards in their classrooms.	O	O	O	O	O
My students parents think it is a good idea for me to use food rewards in my classroom.	O	O	O	O	O
I do not have the resources to afford other rewards for my classroom. (e.g., stickers, pencils, erasers, etc. . . .)	O	O	O	O	O
I have never been provided training on using non-food rewards.	O	O	O	O	O
Rewarding my students with	O	O	O	O	O

food makes me feel good.	

Please read the following statements regarding policy and indicate your level of agreement. A policy is a written document that outlines agreed upon rules and guidelines to follow.

	Strongly disagree	*Somewhat disagree*	*Neither agree nor disagree*	*Somewhat agree*	*Strongly agree*
*My **school district** has a policy stating food should not be used as a reward.*	O	O	O	O	O
*My **school** has a policy stating food should not be used as a reward.*	O	O	O	O	O

Would you like to be entered into a drawing for a chance to receive a $100.00 gift card? (Additional information required). Please select "yes" below to be directed to input additional information. Select "no' to submit your responses and close the survey.
(yes)
(no)

Please provide an e-mail address we may contact you with.
_____

We thank you for your time spent taking this survey.
Your response has been recorded.

Appendix D - Expert Feedback Form

Please review the following demographic and participant information questions. Provide any feedback, comments, or suggestions to improve upon the completeness of the study.

Gender:
Male
Female
Non-Binary
Prefer not to answer.

Race:
American Indian or Alaskan Native
Asian
Black or African American
Hispanic or Latino
Native Hawaiian or Other Pacific Islander
White

Which grade do you currently teach?
Kindergarten
1st grade
2nd grade
3rd grade
4th grade
5th grade
Other please explain:

What is the student to teacher ratio in your classroom?
≤1:10
1:11-1:15
1:16-1:20
1:21-1:25
≥1:26

Prior years of teaching experience:
≤1
2-5 years
6-10 years
11-16 years
17-20 years
21-25 years
≥26 years

What is your highest level of completed education?

High School
Bachelors' Degree
Masters' Degree
Professional Degree
Doctorate Degree

What state and with what school district are you currently employed with? (Please spell out name)

Answer:

Do you use candy or food (fruit snacks, chips, cookies, cake, pizza, soda) as a reward or as an incentive in your classroom?

Yes
No

If you do use candy or food as a reward or as an incentive in your classroom, please indicate the frequency at which they are used within your classroom.

	Never	*Seldom*	*Occasionally*	*Often*
Candy	**O**	**O**	**O**	**O**
Chips/pretzels/crackers	**O**	**O**	**O**	**O**
Gummy or fruit snacks	**O**	**O**	**O**	**O**
Soda/pop	**O**	**O**	**O**	**O**
Granola bar/snack bar	**O**	**O**	**O**	**O**
Pizza party	**O**	**O**	**O**	**O**
Other: write in ____	**O**	**O**	**O**	**O**

If you do not use candy or food as a reward or incentive, have you ever done so in the past?

Yes
No

Instructions: Below are five statements to measure the use of classroom food rewards. For the purpose of this study, food includes any food or beverage. Examples include (but are not limited to) candy, gum, fruit snacks, soda, chips, snack crackers, and pizza . Please read the statements and rate the clarity and relevance of each. If you deem an item unclear or not relevant, please explain in the comments section. After rating the clarity and relevance, list (in the area provided)

any issues/topics that were not included but you think should be included to fully assess the use classroom food rewards.

	Rate item clarity		**Is item relevance with regard to measuring classroom foods rewards?**	
1. I offer candy or non-candy foods as a reward for good behavior.	Clear	Unclear	Yes	No
Comments or any issues/topics that were not included but you think should be to adequately assess behaviors				
2. I offer candy or non-candy foods to my students as a reward for good attendance.	Clear	Unclear	Yes	No
Comments or any issues/topics that were not included but you think should be to adequately assess behaviors				
3. I offer candy or non-candy foods to my students to encourage them to complete tasks on time.	Clear	Unclear	Yes	No
Comments or any issues/topics that were not included but you think should be to adequately assess behaviors				
4. I offer candy or non-candy foods to my students to celebrate a milestone. (e.g. last day of school, completion of an exam, completion of a project)	Clear	Unclear	Yes	No
Comments or any issues/topics that were not included but you think should be to adequately assess behaviors				
5. I offer candy or non-candy foods to my students if they do	Clear	Unclear	Yes	No

well on an assignment, quiz, or test.				
Comments or any issues/topics that were not included but you think should be to adequately assess behaviors				

Instructions: Below are seven statements **to measure the perceived risk of using classroom food rewards**. Read the statements and rate the clarity and relevance of each. If you deem an item unclear or not relevant, please explain in the comments section. After rating the clarity and relevance, list (in the area provided) any issues/topics that were not included but you think should be included to fully assess the **perceived threat of using classroom food rewards.**

	Rate item clarity		**Is item relevance with regard to measuring the perceived threat of using classroom foods? rewards**	
1. The use of food rewards may distort a child's relationship with food.	Clear	Unclear	Yes	No
Comments or any issues/topics that were not included but you think should be to adequately assess behaviors				
2. Classroom food rewards undermine good nutrition.	Clear	Unclear	Yes	No
Comments or any issues/topics that were not included but you think should be to adequately assess behaviors				
3. The use of food rewards may lead to poor eating habits.	Clear	Unclear	Yes	No

Comments or any issues/topics that were not included but you think should be to adequately assess behaviors				
4. Classroom food rewards are harmless.	Clear	Unclear	Yes	No
Comments or any issues/topics that were not included but you think should be to adequately assess behaviors				
5. My students' health is not at-risk by using food rewards in the classroom.	Clear	Unclear	Yes	No
Comments or any issues/topics that were not included but you think should be to adequately assess behaviors				
6. Rewarding students with candy or snacks is not that big of a deal.	Clear	Unclear	Yes	No
Comments or any issues/topics that were not included but you think should be to adequately assess behaviors				
7. It is unlikely that food rewards will hurt my students.	Clear	Unclear	Yes	No
Comments or any issues/topics that were not included but you think should be to adequately assess behaviors				

Instructions: Below are six statements to measure the **perceived barriers discontinuing classroom food rewards.** Read the statements and rate the clarity and relevance of each. If you deem an item unclear or not relevant, please explain in the comments section. After rating the

clarity and relevance, list (in the area provided) any issues/topics that were not included but you think should be included to fully assess the perceived threat of using classroom food rewards.

	Rate item clarity		**Is item relevance with regard to measuring the perceived threat of using classroom foods? rewards**	
1. I do not have the resources I need to use non-food rewards (e.g. stickers, extra recess, homework pass)	Clear	Unclear	Yes	No
Comments or any issues/topics that were not included but you think should be to adequately assess behaviors				
2. I do not have the support of my administrators to use other classroom reward strategies (e.g. stickers, extra recess, homework pass)	Clear	Unclear	Yes	No
Comments or any issues/topics that were not included but you think should be to adequately assess behaviors				
3. The other teachers in my building are using food rewards in their classrooms.	Clear	Unclear	Yes	No
Comments or any issues/topics that were not included but you think should be to adequately assess behaviors				
4. I am encouraged by my student's parents to use food	Clear	Unclear	Yes	No

rewards in my classroom.				
Comments or any issues/topics that were not included but you think should be to adequately assess behaviors				
5. Ido not have time to establish a non-food reward system in my classroom.	Clear	Unclear	Yes	No
Comments or any issues/topics that were not included but you think should be to adequately assess behaviors				
6. I have never been provided training on non-food reward classroom management strategies.	Clear	Unclear	Yes	No
Comments or any issues/topics that were not included but you think should be to adequately assess behaviors				

Instructions: Below are four statements **to measure exposure to policy cues related to student wellness**. Read the statements and rate the clarity and relevance of each. If you deem an item unclear or not relevant, please explain in the comments section. After rating the clarity and relevance, list (in the area provided) any issues/topics that were not included but you think should be included to fully assess the perceived threat of using classroom food rewards.

	Rate item clarity	**Is item relevance with regard to measuring the perceived threat of using**

			classroom foods? rewards	
1. My school (school district) has a student wellness policy?	Clear	Unclear	Yes	No
2. I have been provided with my school districts wellness policy.	Clear	Unclear	Yes	No
3. I have read my school districts wellness policy.	Clear	Unclear	Yes	No
4. Our school wellness policy is enforced.	Clear	Unclear	Yes	No