

PERCEPTIONS HELD BY GUARDIANS OF ELEMENTARY SCHOOL CHILDREN ABOUT THE INFLUENCERS AND MOTIVATORS FOR PURCHASING SCHOOL LUNCH MEALS

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ABSTRACT

PURPOSE/OBJECTIVES

This study assessed guardians' influencers and motivators for purchasing school lunch meals for their children; determined motivators for the decision to purchase using constructs of the Self-Determination Theory (SDT); and assessed relationships between influencers to purchase a school lunch meal, body mass index (BMI) of the guardian, and their exercise frequency.

METHODS

An online questionnaire was developed and distributed to all 6,888 faculty and staff members who worked at a Midwest public university. The questionnaire included items regarding motivations to purchase a school lunch meal using constructs of Deci and Ryan's SDT (e.g. competency, autonomy, and relatedness), influencers to purchase a school lunch meal, and demographics.

RESULTS

A total of 174 questionnaires was analyzed. Participants reported being influenced by the convenience of purchasing a school lunch as opposed to packing one ($M=4.65$, $SD=0.74$), lack of time to pack a lunch ($M=4.25$, $SD=1.13$), and preference or request of the child ($M=4.17$, $SD=1.07$); a scale from 1 to 5 was used with 1=unlikely and 5=very likely. A negative relationship between participants' exercise frequency and BMI was found. There was a positive, but weak, relationship between the BMI of the participant and the preference or request of the child influencing the decision to purchase a school lunch meal.

APPLICATION TO CHILD NUTRITION PROFESSIONALS

Results from this study suggest the preference or request of the child has influence over the guardian's decision to purchase a school lunch meal. Marketing of school nutrition programs, such as breakfast and lunch, is generally targeted to students and guardians prior to or early in the school year and often times focused toward children who may be first entering school. Understanding that guardians may have external influences that impact their motivation to purchase a school meal, school nutrition directors could use this information in marketing these programs and potentially increase participation.

KEYWORDS: school lunch, nutrition, motivators, influencers

INTRODUCTION

Based on national participation rates, it is estimated that approximately 40% of children in grades K-12 bring packed lunches to school as opposed to participating in the National School Lunch Program (NSLP) (U.S. Department of Education, n.d; U.S. Department of Agriculture, 2017). These statistics may be surprising considering the cost of purchasing a school lunch meal compared to preparing a packed lunch. Based on data from 2016-2017, which took into account preparation times, homemade packed lunches were found to be more expensive (\$2.92) compared to NSLP lunches (\$2.15) when using median costs (O'Keefe, et al., 2020). Lunches brought from home are not federally regulated. As a result, packed lunches may not meet the nutrient content of NSLP meals (Johnson, Bednar, Kwon, & Gustof, 2009; Minaya & Rainville, 2016). For children, consuming a school-provided meal supports a healthful diet.

There are many environmental influences which impact dietary choices. Individual factors, social environments, physical environments, and macro-level sectors have impact on food choices. Social networks, such as families, influence food choices through support, norms, and role modeling (Story, Kaphingst, Robinson-O'Brien, & Glantz, 2008). In one study, parents were found to have more influence on their adolescent child's fruit and vegetable consumption than peers with researchers finding that perceived behavior, or what parents modeled, was more influential than what parents said (Pedersen, Gronhoj, & Thogerson, 2014). Researchers have also suggested a link between parental body mass index (BMI) and childhood obesity (Svensson, et al., 2011).

This study used Self-Determination Theory (SDT) to assess intrinsic motivation of guardians to purchase school lunch meals for their elementary school child/ren. SDT is a continuum ranging from self-determined (meaning there is high intrinsic motivation) to non-self-determined. Intrinsic motivation has been defined as, "activities that people do naturally and spontaneously when they feel free to follow their inner interests" (Deci & Ryan, 2000, p. 234). SDT also recognizes the human desire to fulfill three needs to be intrinsically motivated; these needs are: competency, autonomy, and relatedness. The need for competency, autonomy, and relatedness along with desires to fulfill each, provide motivation. While some intervention and behavioral survey studies have been conducted regarding intrinsic and extrinsic motivations for healthy eating (e.g. Manganelli & Lucidi, 2016; McSpadden et al., 2016), this is the first known study that applied SDT to a school food environment in the United States.

Although researchers (e.g. Caruso & Cullen, 2015; Farris et al., 2014) have studied what was packed in lunches brought from home and made comparison to school lunch meals, no research studies were found that determined why guardians choose to purchase a school lunch meal as compared to packing a lunch for elementary-aged children in the United States. International research suggests motivating factors for selecting foods packed for lunch are based on child preferences and desire to be a good parent (Bathgate & Begley, 2011; Ensaff, Bunting, & O'Mahony, 2018). Therefore, the objectives of this study were to: (1) explore the influencers over guardians' decisions to purchase a school lunch meal; (2) determine motivators behind this decision using the constructs of SDT; and (3) assess the relationships between influencers to purchase a school lunch meal, BMI, and exercise frequency.

METHODS

This study was a part of a larger study assessing motivators for purchasing school lunches and preparing packed lunches. A questionnaire was developed using previous research (Bathgate & Begley, 2011; Ensaff, Bunting, & O'Mahoney, 2018) and qualitative data (reported elsewhere) to explore guardians' influencers and motivators for purchasing school lunch meals and preparing packed lunches. Approval from the University Institutional Review Board was obtained before participant recruitment began.

Sample

The sample was comprised of all faculty and staff members at a Midwest public university (N= 6,888). The University has a diverse population of employees with about equal distribution of men and women. In order to qualify for the study, participants had to: (1) have a school-age child currently enrolled in kindergarten through fifth grade as younger students, compared to older students, are generally more dependent on their parents/guardians; (2) identify as being involved in school lunch meal decisions; and (3) be over the age of 18. Thus, not all faculty and staff members qualified for the study. It is unknown how many of the 6,888 were eligible. As an incentive, participants had a chance to win a \$25 gift card.

Data Collection Instrument

An electronic questionnaire was developed following the recommended guidelines for scale development as outlined by DeVellis (2012) and the guidelines set forth by Dillman, Smyth, and Christian (2014). A pilot study was conducted with a convenience sample of six guardians and changes were made based on feedback as suggested by DeVellis (2012). The questionnaire included sections as follows: (1) basic information about school lunch meals; (2) influencers to purchase a school lunch meal; (3) motivations to purchase a school lunch meal using the constructs of the SDT; and (4) demographic information.

To explore influencers, participants were presented with 13 influencers to purchasing a school lunch meal. Participants rated each item on a scale of 1 (unlikely to influence) to 5 (very likely to influence).

To determine motivators, four SDT subscales (ie. interest enjoyment, perceived choice, perceived competence, and pressure tension), were used. Items were developed by adding actions to stem statements from the Intrinsic Motivation Inventory Scale (Self-Determination Theory, n.d.). Four items assessed interest and enjoyment, three items assessed perceived choice, three items assessed perceived competence, and four items assessed pressure and tension. Nine of the 14 total items were negatively worded. Participants rated each item on the subscale using a Likert-type scale from 1 (strongly disagree) to 7 (strongly agree). A higher score on interest and enjoyment indicated intrinsic motivation. A higher score on perceived choice and perceived competence are positive predictors of intrinsic motivation, whereas a higher score on pressure and tension are considered negative predictors of intrinsic motivation (Deci & Ryan, 2000).

Data Collection

The questionnaire link, through Qualtrics[®], was sent via email to all university faculty and staff members. Based on recommendations by Dillman et al., (2014), the questionnaire was administered mid-week at 7:30 a.m. in February. The email was sent prior to the beginning of the

day so that faculty and staff would see it prior to starting their day. A follow-up email was sent eight days following the initial request.

Data Analysis

Analysis of data was completed using IBM SPSS Statistics Version 26 with descriptive statistics calculated. Negatively phrased items were reverse coded. Cronbach’s alpha was used to assess the internal consistency of the questionnaire scales. BMI was calculated by multiplying self-reported weight in pounds by 703. This figure was divided by the participant’s self-reported height in inches squared (Calculate Your Body Mass Index, n.d.). The participant’s BMI was classified as either underweight (<18.5), normal weight (18.5 – 24.9), overweight (25.0 – 29.9), or obese (≥30) (About Adult BMI, 2017). Relationships between influencers to purchase a school lunch meal, exercise frequency, and BMI were explored using a Pearson correlation.

RESULTS AND DISCUSSION

A total of 174 questionnaires was analyzed. Participants were not forced to respond to every item on the survey, however, at least 90% of respondents answered each item. Participants self-identified as male (n=48; 28.2%) or female (n=122; 71.8%) (Table 1). The majority of participants (68.0%) were between the ages of 36 and 45 years old. Ninety percent (90.7%) of participants reported they were White/ Caucasian. More participants reported having a four-year college degree (35.9%) than any other level of education. A majority of participants (61.9%) reported exercising one to six times per week, and only four participants claimed to never exercise. Additionally, body mass index (BMI) was calculated using self-reported measures of height and weight. The majority of participants exceeded the normal range for BMI; 35.0% of the participants were classified as overweight and 28.7% reported BMI data classifying them as obese. Slightly more than one-third (36.3%) of participants were within normal weight.

Participants reported grade levels for children whom they were guardians with first grade represented most frequently (n = 23.2%) and fifth grade the least (n = 12.3%). Respondents indicated that the majority of children purchased school lunch meals five days per week (60.9%). The vast majority of participants’ students (95.4%) did not qualify for free or reduced-price lunches. Additionally, 21.7% of participants said their children enjoyed eating school lunch meals and 24% were satisfied with the school lunch meal provided to their children.

Table 1. *Characteristics of Questionnaire Respondents*

Characteristic	Total	
	n	%
Gender (n=170)		
Male	48	28.2
Female	122	71.8
Other	0	0
Prefer Not to Specify	0	0
Age (n=169)		
26 – 35 years	37	21.9
36 – 45 years	115	68.0
46 – 55 years	16	9.5
More than 56 years	1	0.6

Table 1. *Characteristics of Questionnaire Respondents*

Grade of Child/ren ^a (n=174)		
Kindergarten	40	17.5
1 st grade	53	23.2
2 nd grade	30	13.2
3 rd grade	44	19.3
4 th grade	33	14.5
5 th grade	28	12.3
Ethnic Background ^a (n=173)		
White/Caucasian	157	90.7
Hispanic/Latino	5	2.9
African American	0	0
Asian	9	5.2
Pacific Islander	0	0
Other	1	0.6
Prefer Not to Specify	1	0.6
Highest Level of Education		
High school Diploma	0	0
Some College	11	6.5
Four-year college degree	61	35.9
Master's Degree	59	34.7
Ph.D.	33	19.4
Other	6	3.5
Prefer Not to Specify	0	0
Annual Household Income (n=169)		
\$0 to \$24,999	1	0.6
\$25,000 to \$49,999	6	3.5
\$50,000 to \$74,999	23	13.6
\$75,000 to \$99,999	23	13.6
\$100,00 to \$124,999	51	30.2
\$125,000 to \$149,999	29	17.1
\$150,000 and up	30	17.8
Prefer Not to Specify	6	3.6
Exercise Frequency (n=169)		
Never	4	2.4
Rarely (a few times a year)	18	10.7
Occasionally (1- 2 times/month)	41	24.3
Often (1- 2 times/week)	44	26.0
Most of the time (3-6 times/week)	56	33.1
Always (every day)	6	3.5
BMI Classification (n=157)		
Underweight (<18.5)	0	0
Normal Weight (18.5 – 24.9)	57	36.3
Overweight (25.0 – 29.9)	55	35.0
Obese (≥30)	45	28.7

^aParticipants could choose more than one response.

Descriptive statistics were calculated on the scale assessing influencers for having the student purchase a school lunch meal as opposed to preparing a packed lunch (Table 2). The top four reported influencers, based on mean ratings, were: (1) “convenience of purchasing as opposed to packing” (M=4.65, SD=0.74); (2) “lack of time to pack a lunch” (M=4.25, SD=1.13); (3) “preference or request of my child” (M=4.17, SD=1.07); and “desire to provide my child a healthy lunch” (M=3.88, SD=1.14). The convenience of purchasing a school lunch meal, as opposed to preparing a packed lunch, appeared to influence the decision to purchase. Additionally, a lack of time to prepare a packed lunch and the preference or request of the child also appeared to influence the decision to purchase a school lunch meal. These findings are consistent with previous international research indicating the child’s influence on items selected and the parent’s desire to provide a healthy meal (Bathgate & Begley, 2011; Ensaff, Bunting, & O’Mahony, 2018; O’Rourke et al., 2020). Participants’ anxieties about packing lunches (M=2.16; SD=1.32) did not appear to influence the decision to purchase a school lunch meal, nor did the participants’ budget for groceries (M=2.49; SD=1.36). Participants did not appear to be influenced by using a school lunch meal as a reward for their children (M=2.21; SD=1.07).

Table 2. *Influencers for Guardians when Purchasing a School Lunch: Mean Scores*

Items	n	Mean	SD
Convenience of purchasing as opposed to packing	171	4.65	0.74
Lack of time to pack a lunch	170	4.25	1.13
Preference or request of my child	170	4.17	1.07
Desire to provide my child a healthy lunch	170	3.88	1.14
Quality of food the school lunch provides	171	3.78	1.23
Time allotted for my child to eat lunch at school	167	3.32	1.19
Experiencing school lunch	165	3.27	1.18
Price of school lunch	169	2.99	1.36
Child’s excitement to purchase a lunch	166	2.96	1.29
Unexpected situation (e.g. child forgot packed lunch at home, no food at home)	167	2.92	1.44
My budget for groceries	164	2.49	1.36
Reward for my child	159	2.21	1.07
My anxieties about packing lunches	164	2.16	1.32

Note. Scale ranged from 1 (unlikely to influence) to 5 (very likely to influence).

The scale used to assess motivators for purchasing a school lunch meal was comprised of four SDT subscales: (1) interest and enjoyment, (2) perceived choice, (3) perceived competence, and (4) pressure tension (Table 3). Cronbach’s alphas for the subscales ranged from .355 (perceived choice) to .696 (pressure tension). Previous research indicated scale reliability (Self-Determination Theory, n.d.); however, the original 22-item scale was reduced to 14 items to reduce redundancy and the overall length of the questionnaire. The perceived choice subscale was reduced to three questions, which could explain the low alpha score for this subscale.

Descriptive statistics were calculated for all subscale items (Table 3). Considering all subscales, the top three motivators for purchasing a school lunch meal based on mean ratings were: (1) “it

is my choice to purchase a school lunch for my child” ($M=6.09$, $SD=0.99$); (2) “I am satisfied with my ability to make lunch decisions” ($M=5.79$, $SD=1.03$); and (3) “I feel relaxed when purchasing a school lunch for my child” ($M=5.16$, $SD=1.28$). Participants reported it was their choice to purchase a school lunch with 82.76% agreeing or strongly agreeing with this statement. Only 2.30% did not believe it was their choice to purchase a school lunch meal. Perceived choice, as a subscale, had the highest mean score as a motivator for purchasing a school lunch ($M=6.09$, $SD=.730$).

Additionally, about three-fourths of participants (73.99%) agreed or strongly agreed they were satisfied with their ability to purchase lunches. Although participants might have been influenced by the request of the child (see Table 2), they were likely the final decision-maker when deciding to purchase a school lunch meal, which indicates choice. Participants were also relaxed when making lunch purchasing decisions. In fact, 48.85% of participants agreed or strongly agreed they were relaxed when making school lunch meal decisions. This question was negatively worded and assessed lack of pressure or tension. If a participant indicated pressure or tension when making a decision, this could have a negative influence on intrinsic motivation (Deci & Ryan, 2000). Only 2.9% of participants strongly disagreed or disagreed with this statement, which would indicate pressure or tension when purchasing school lunch meals. If the participants believe it is their decision to purchase lunch meals, they may also feel relaxed when making this decision. These are positive indicators of intrinsic motivation (Deci & Ryan, 2000).

Participants appeared to be intrinsically motivated when making the decision to purchase a school lunch meal. Respondents neither agreed nor disagreed with having interest and enjoyment ($M=4.45$) when purchasing a school lunch based on the mean score, which is not necessarily a positive or negative indicator of intrinsic motivation. However, they did appear to be competent in their ability to purchase a lunch ($M=5.11$), have the choice to purchase a school lunch ($M=6.09$), and did not feel tense when purchasing lunch ($M=5.53$). Perceived competence and perceived choice were positive indicators of intrinsic motivation, whereas pressure and tension could have a negative effect on intrinsic motivation. Although the self-reported score for intrinsic motivation was in the neutral range, the other three subscales do indicate intrinsic motivation based on SDT.

Relationships between influencers to purchase a school lunch meal, exercise frequency, and BMI are reported in Table 4. As expected, there was a negative relationship between exercise frequency and BMI ($r=-.283$, $P<.01$). There was a positive, but weak, relationship between BMI of the participant and the preference or request of the child influencing ($r=.164$, $p<.05$) the decision to purchase a school lunch meal. Additionally, there was a negative, but weak relationship between the BMI of the participant and their anxieties about packing a lunch ($r=-.179$, $p<.05$), influencing the decision to purchase a school lunch meal. No significant relationships were found between exercise frequency and influencers to purchase a school lunch meal.

Additional relationships among influencers were noted. For example, there appeared to be a moderate relationship between a lack of time to pack a lunch and the convenience of purchasing a school lunch meal ($r=.436$, $p<.01$). The quality of the school lunch food elicited a moderate relationship with the desire to provide a healthy lunch ($r=.457$, $p<.01$). A moderate association was also observed between the price of a school lunch meal and the participant’s budget for groceries ($r=.448$, $p<.01$).

Table 3. *Guardians' Internal Motivations for Selecting School Lunch*

Self-Determination Theory (SDT) Subscales	n	Percentage Agreement							Mean Score	SD
		Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree		
Interest Enjoyment										
School lunch is fun for my child.	173	2.3	3.5	7.5	28.3	31.2	25.4	1.7	4.66	1.21
I don't enjoy purchasing school lunches.	174	11.5	29.3	8.6	25.3	15.5	9.2	0.6	4.66 ^a	1.56
I find purchasing school lunches challenging.	173	30.1	40.5	11.6	10.4	4.0	2.3	1.2	5.71 ^a	1.33
I enjoy purchasing school lunches for my child.	174	4.0	6.9	14.4	50.0	7.5	14.4	2.9	4.05	1.30
Subscale Total Mean Score									4.45^b	1.02^b
Perceived Choice										
It is my choice to purchase a school lunch for my child.	174	0.6	1.7	0.0	2.3	12.6	46.6	36.2	6.09	.99
I wish someone else could select a school lunch from the menu for my child.	174	41.4	38.5	8.0	8.6	2.3	0.6	0.6	6.04 ^a	1.13
I am forced to purchase school lunches for my child.	174	49.4	32.8	6.3	7.5	2.3	1.1	0.6	6.14 ^a	1.17
Subscale Total Mean Score									6.09^b	.73^b
Perceived Competence										
I feel skilled at making lunch decisions.	174	0.0	3.4	2.9	32.8	17.2	31.0	12.6	5.07	1.25
I am satisfied with my ability to make lunch decisions.	173	0.0	1.7	1.7	7.5	15.0	52.6	21.4	5.79	1.03
After purchasing a school lunch, I feel confident my child will eat it.	174	1.1	13.8	16.7	9.2	25.9	29.3	4.0	4.49	1.54
Subscale Total Mean Score									5.11^b	.97^b
Pressure Tension										
I feel stressed when I make lunch decisions for my child.	174	19.0	34.5	13.2	14.4	11.5	6.3	1.1	5.11 ^a	1.56
I feel relaxed when purchasing a school lunch for my child.	174	0.6	2.3	4.6	28.2	15.5	35.1	13.8	5.16	1.28
I feel anxious about purchasing school lunch.	174	39.1	34.5	6.3	13.8	5.7	0.6	0.0	5.86 ^a	1.26
I feel pressure to purchase school lunches.	174	40.2	38.5	7.5	9.8	2.3	1.1	0.6	5.99 ^a	1.18
Subscale Total Mean Score									5.53^b	.96^b

Note. Scale ranged from 1 (strongly disagree) to 7 (strongly agree). SDT subscales were part of the SDT questionnaire.

^aThe original question is presented but the scale was reversed for calculating the mean score to allow for comparisons.

^bRepresents the overall mean and standard deviation for all items in the subscale.

Table 4. Correlation between Influencers for Guardians to Purchase a School Lunch, Guardian Exercise Frequency, and Guardian BMI^a

	BMI	Exercise frequency	Convenience of purchasing	Budget for groceries	Preference/request of child	Desire to provide healthy lunch	Experiencing school lunch	Reward for child	Lack of time to pack lunch	Anxieties about packing lunch	Unexpected situation	Quality of school lunch food	Time allotted for child to eat	Price of school lunch
Exercise frequency	-.283**													
Convenience of purchasing	-.147	.060												
Budget for groceries	.093	-.011	.096											
Preference/request of child	.164*	-.049	-.108	-.089										
Desire to provide healthy lunch	.141	-.037	.030	.173*	.173*									
Experiencing school lunch	.015	-.085	-.044	.025	.124	.336**								
Reward for child	.062	-.009	-.009	.177*	.150	.297**	.287**							
Lack of time to pack lunch	-.152	.045	.436**	.226**	-.042	.058	.021	.112						
Anxieties about packing lunch	-.179*	.069	.132	.165*	-.249**	.021	.092	.020	.188*					
Unexpected situation	.034	-.028	-.103	.107	.084	-.006	-.063	.273**	.109	.069				
Quality of school lunch food	.007	-.043	.117	.059	.137	.457**	.180*	.085	.127	.146	.013			
Time allotted for child to eat	.007	-.014	.005	.138	.104	.247*	.127	.170*	.203**	.245**	.055	.257**		
Price of school lunch	.022	-.053	-.049	.448**	-.124	.173*	.090	.107	.122	.236	.039	.169*	.211**	
Child's excitement	-.001	.015	.007	.077	.278**	.212**	.258**	.248**	.012	.055	.042	.241**	.140	.245**

^a Exercise frequency was self-reported. BMI was calculated based on self-reported weight and height

*Correlation is significant at the 0.05 level (2-tailed)

**Correlation is significant at the 0.01 level (2-tailed)

CONCLUSIONS AND APPLICATIONS

Influencers over an elementary student guardian's decision to purchase a school lunch meal were explored. Based on mean ratings, participants were influenced by the convenience of purchasing rather than packing a lunch ($M=4.65$, $SD=0.75$), a lack of time to pack a lunch ($M=4.25$, $SD=1.13$), and the preference or request of the child ($M=4.17$, $SD=1.07$). Understanding what influences the decision to purchase a school lunch meal as opposed to preparing a packed lunch can help guide marketing efforts for school nutrition directors. School nutrition directors might create materials that highlight the convenience and time that could be saved when purchasing a school lunch meal with a slogan such as, "Convenient and healthy school lunch meals can save you time in the morning." This slogan could be printed on refrigerator magnets, which would serve as a daily reminder to parents that school lunch meals are an option. Capitalizing on known influencers to purchase a school lunch meal could lead to an increase in participation for the school lunch program.

The results from this study indicated the preference or request of the child also has an influence over the guardian's decision to purchase a school lunch meal. Because about 40% of U.S. school-aged children still bring packed lunch to school (U.S. Department of Education, n.d.; U.S. Department of Agriculture, 2017), school nutrition directors appear to have opportunity to increase their participation rates. While there may be many explanations for why children bring packed lunches, it is suggested that school nutrition directors start to increase participation rates by introducing the school lunch program to children early in the school year, focusing on the children who may be first entering the school. This could include an introduction on how school lunch meals work for kindergarten students at the beginning of each year, short visits to the classrooms to talk about menu options, informational handouts sent home with students every semester, and even tastings of menu items. This introduction to the program could allow students to feel comfortable with purchasing school lunch meals and possibly prompt the child to request a school lunch meal from their guardian. Additionally, samples and tasting of food items could encourage students to taste unfamiliar foods and potentially encourage so-called "picky" children to participate in the school lunch program. The preference or request of the child appears to influence the guardian's decision to purchase a school lunch meal. An opportunity exists to create excitement around school lunch so that students will ask their guardians to purchase them a school lunch meal.

Beyond understanding the influencers for purchasing decisions, this study explored the motivators for purchasing a school lunch meal based on four SDT subscales. Participants appeared to be intrinsically motivated when making the decision to purchase a school lunch meal. The perceived competence, perceived choice, and pressure tension subscales indicated intrinsic motivation, but the interest and enjoyment subscale trended neutral. This neutral mean score could be explained by the external influences, such as the influence the child has over the decision to purchase a school lunch meal. External influences shift the locus of control away from intrinsic motivation (Deci & Ryan, 2000). In order for the guardian to be intrinsically motivated, they would need to internalize the belief that purchasing a lunch was the right decision for their child. Behaviors that are accepted as a value are performed more autonomously and without prompting, potentially leading to purchasing a school lunch meal more often.

Understanding that parents may have external influences that impact intrinsic motivation, school nutrition directors could use this information to make changes to their communication efforts.

Guardians may not be getting information about school lunch directly from the school website but may be receiving information from the child or other guardians. These external influences may be negatively impacting the guardian's perception of school lunch meals. School nutrition directors could use marketing materials, such as monthly emails, district newsletters, or flyers, to share correct and accurate information about the school lunch program. These materials could highlight the menu, food components offered or served, ingredients, preparation techniques, safety standards, qualifications for free and reduced-cost meals, process to purchase a school lunch meal, and general nutrition information to help guardians internalize the belief that purchasing a school lunch meal is a good decision for their child. Marketing materials available through USDA and School Nutrition Association could be used as starting points to help in promoting school meals as a "good decision" (e.g. Marketing Resources, n.d.; Promotion Calendar, 2020).

Likely, guardians could use the results from this study to recognize that there are various influencers and motivators that may influence the choice to purchase a school lunch meal. A lack of time in the morning and the convenience of purchasing a school lunch meal appear to have the most influence over the decision to purchase a school lunch meal. If a guardian finds they continually have a lack of time in the morning, purchasing a school lunch meal may be the best choice for the guardian and the child. Guardians could recognize that a healthy diet for the child is associated with purchasing a school lunch meal, potentially motivating them to purchase a school lunch meal more often. Furthermore, guardians could encourage the child to participate in the NSLP if their child is hesitant. The guardian could discuss the benefits of purchasing a school lunch meal, such as a balanced meal and the experience of purchasing lunch, with the child to encourage their participation.

LIMITATIONS AND FUTURE RESEARCH

This research study was not without limitations. Specifically, this study had a small sample size. This small sample size may be explained by the mass email approach used. The questionnaire was distributed to 6,888 faculty and staff members at a Midwest public university and 174 participants completed all relevant questions. While it would be difficult to determine the exact number of faculty and staff members who qualified for the study with elementary school aged children in their care, the actual number of responses was lower than expected. Careful attention was given to the day and time the questionnaire was distributed to support a higher response rate. The questionnaire was distributed in February and should not have been influenced by major holidays or events. Furthermore, most of the respondents reported being White/ Caucasian. Based on the limited ethnicities represented, these results are not representative of the United States. Instead, the results are useful to school nutrition directors with schools that reflect similar demographics.

The motivation scale did not perform as well as expected. To assess intrinsic motivation through SDT, subscales were modified for the purpose of this study. Although items on the subscales were modified from reliable scales and pilot tested, the Cronbach's alpha score for the perceived choice subscale was lower than desired. The perceived choice scale was reduced from five items to three items, which could explain the low alpha score. While it is not suspected that this had a significant impact on the outcome of the study, reliability of the subscale might be improved by increasing the scale from three to five questions. Furthermore, this study may be impacted by

socially desirable responses. Some questions, such as weight and exercise frequency, may have elicited socially desirable responses.

Future research could further explore the motivators for purchasing a school lunch meal. There is potential to further assess intrinsic motivation as it relates to purchasing a school lunch meal with the use of the SDT scale. It would be recommended that each subscale have a minimum of five questions to increase the reliability of the scale. Understanding motivators to purchase a school lunch meal could have the potential to support school nutrition directors in increasing their lunch participation rates. Additionally, future researchers could investigate the relationship between perceptions of school lunch meals and how these perceptions influence the decision to purchase a school lunch meal.

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