

# Applying the Theory of Planned Behavior to Analyze the Efficacy of the JUS Media? Global Classroom with Somali American Adolescents

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## Introduction

In the United States, food advertisements make up roughly 11% to 29% of all advertisements with about 70% advertising unhealthy food (Kelly et al., 2010). Adolescents, in particular Black and Hispanic youth, are at an increased risk with food marketers disproportionately targeting them with unhealthy food advertisements (Story & French, 2004; Harris et al., 2019). Recent data suggests that marketing agencies target this vulnerable population through culturally relevant themes such as setting advertisements in spaces that are frequented by people of color (Harris et al., 2019).

The current pilot study provided a low cost and highly accessible digital intervention, the JUS Media? Global Classroom, which was adapted to Somali American culture from the original "JUS Media? Programme", a food-focused media literacy intervention promoting healthier eating among adolescents and mothers in Jamaica (Ferguson et al., 2019, 2021). The goal of the intervention is to use culturally relevant video modules to increase nutrition understanding and media literacy in order to buffer against the effects of food advertisements.

Our hypothesis include:

1. Students with higher pretest score on TPB variables will show a greater increase in pre/post test food readiness scores
2. Student with higher pretest scores on TPB variables will show a greater increase in media literacy

To measure the change in readiness to eat healthier and change in media literacy, we will use the Theory of Planned Behavior (TPB), a theory to measure the change of behavior based on the motivational factors in a participants vicinity, to run linear regressions. We will then compare pre and post test scores utilizing t-tests.

## Methods

**Participants:** 135 students ( $M_{age} = 14.92$ ,  $SD = 1.53$ , 53.7% male, 45.6% female, 0.7% other) from a predominantly Somali American charter school in Minneapolis. Students came from the grades 7<sup>th</sup> through 12<sup>th</sup> health classes. Implementation took place at a charter school in Minneapolis with a predominately Somali American students (US Born = 40.4%, African Born = 58.6%). Students were given an initial survey, followed by a digital intervention in the form of video modules (~35 mins). Two days later the students completed refresher activities and then completed a follow-up survey.

- Measures:**
- **Theory of Planned Behavior** influence on the intention to eat more Somali food was measured via 3 items: **attitude toward the behavior** ( $\alpha = 0.848$ ) (e.g., the students' preference of Somali food), **subjective norm** ( $\alpha = 0.753$ ) (e.g., how often Somali food is consumed around the student), and **perceived behavioral control** ( $\alpha = 0.847$ ) (e.g., the availability of Somali food) (Ajzen, 1991).
  - **Media Literacy** ( $\alpha = 0.793$ ) was measured using a disagree-agree scale that assesses meanings of advertisement messaging, representation, and truth (Powell, 2014).
  - **Food Readiness** was measured using a readiness ladder to assess readiness to change eating habits change before and after the intervention (Wright et al., 2014).

Table 1: T-test Showing Pre/Post scores of Food Readiness Indexes and Media Literacy

Variables	Pre-test mean(SD)	Post-test mean(SD)	t	One-Sided P
Readiness to eat more Fruit	3.48(1.599)	3.31(1.506)	0.941	0.174
Readiness to eat more Vegetables	3.51(2.163)	3.48(1.956)	0.108	0.457
<b>Readiness to eat less sugar</b>	<b>3.37(1.839)</b>	<b>3.67(1.807)</b>	<b>-1.454</b>	<b>0.074+</b>
Readiness to eat less salt	3.27(1.911)	3.48(1.751)	-0.879	0.191
Media Literacy Score	2.93(0.539)	2.98(0.542)	-0.943	0.174

+Trending significance, \*Significant, SE = standard error, B = unstandardized Beta

Table 2: Regression Analysis Showing TPB Predictors of Media Literacy Controlling for Age and Gender

Variables	Media Literacy Post-test Score		
	B	SE	Sig
<b>Media Literacy Pre-Test Score</b>	<b>0.324</b>	<b>0.087</b>	<b>&lt;0.001*</b>
Attitude to Somali Food	0.006	0.043	0.893
<b>Social Norm of Somali Food</b>	<b>0.105</b>	<b>0.045</b>	<b>0.021*</b>
Behavioral Control of Somali Food	-7.036E-5	0.045	0.999
Age	0.003	0.029	0.927
Gender	0.087	0.089	0.329

\*Trending significance, \*Significant, SE = standard error, B = unstandardized Beta

Table 3: Regression Analyses Showing TPB Predictors of Post-Test Food Readiness Controlling for Pre-Test Food Readiness

Variables	Food Readiness Post-Test Scores											
	Fruits			Vegetables			Less Sugar			Less Salt		
	B	SE	Sig	B	SE	Sig	B	SE	Sig	B	SE	Sig
<b>Food Readiness Pre-test Score</b>	<b>0.458</b>	<b>0.080</b>	<b>&lt;0.001*</b>	<b>0.606</b>	<b>0.078</b>	<b>&lt;0.001*</b>	<b>0.373</b>	<b>0.086</b>	<b>&lt;0.001*</b>	<b>0.356</b>	<b>0.099</b>	<b>&lt;0.001*</b>
Attitude	0.144	0.089	0.110	0.041	0.102	0.691	0.114	0.113	0.315	0.100	0.120	0.407
Social Norm	0.007	0.091	0.942	0.172	0.100	<b>0.088+</b>	0.051	0.113	0.649	0.004	0.119	0.974
Perceived behavioral control	0.026	0.096	0.784	0.102	0.104	0.327	0.088	0.117	0.451	0.023	0.126	0.858
Age	0.021	0.059	0.727	0.090	0.064	0.163	-0.035	0.073	0.629	-0.125	0.080	0.123
Gender	-0.011	0.186	0.955	-0.270	0.205	0.190	-0.326	0.227	0.155	-0.374	0.245	0.129

+Trending significance, \*Significant, SE = standard error, B = unstandardized Beta

## Results

**Pre-Post Change:** Paired sample t-test showed that there was no significant differences between the pre and post scores on any of the variables. (See Table 1)

**Regressions predicting Food Readiness:** Linear regression models revealed that students who had a higher social norm of eating Somali food at pre-test had higher media literacy at post-test after controlling for pretest media literacy (suggesting that social norms predicted a significant rise in media literacy pre-to-post intervention).

**Regression predicting Post-test Media Literacy.** Linear regression model showed that there no was no statistically significant association between TPB variables and food readiness to eat healthier diets besides social norms being marginally significantly associated with readiness to eat more vegetables. There was a significant change in the pre-post test scores for food readiness.

## Discussion

The pre-post test comparison was necessary to show the change in student readiness and understand of media literacy before and after the intervention. There was a trending significance for the readiness to eat less sugar suggesting there was some change after viewing the modules.

Results for the linear regressions comparing TPB and food readiness scores showed that TPB had no significant association with the readiness to eat healthier.

In the comparison between media literacy and TPB we saw that social norms was associated with a greater change in media literacy following the intervention. Post hoc analysis suggests this may be due to students who scored higher in the TPB variables had lower media literacy knowledge at baseline. In addition, we can see that students who have a lower understanding of media literacy before the intervention have a better understanding at the end. Therefore, none of our hypothesis were supported.

## References

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Figure 1: Images from the JUS Media? Global Classroom Video