

The Transtheoretical Model as a Predictor of Fruit and Vegetable Intake in SNAP Participants

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Introduction

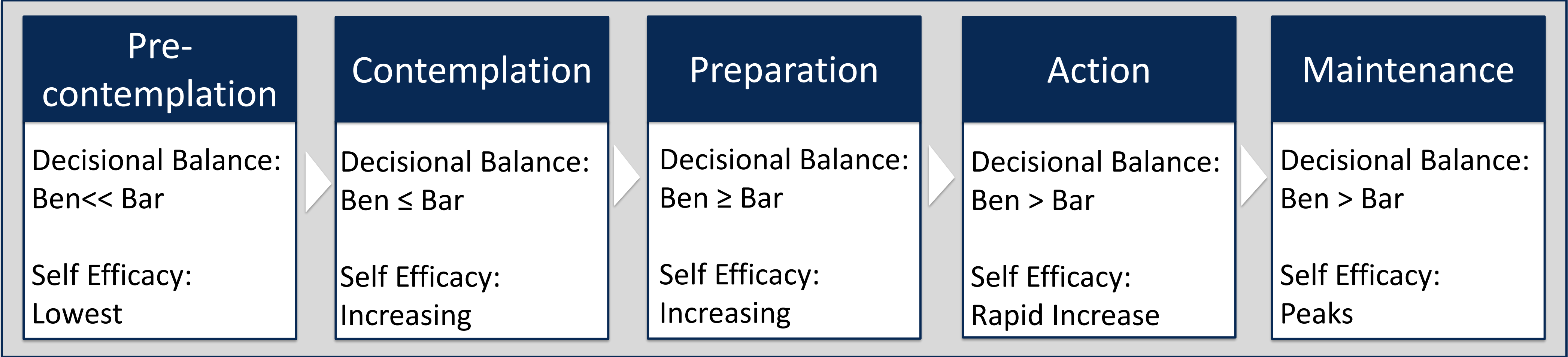
Many Supplemental Nutrition Assistance Program (SNAP) participants do not consume enough fruits and vegetables (F&V). The transtheoretical model (TTM) has been used to predict and improve F&V consumption through public health interventions.¹ This study focuses on self-efficacy and decisional balance (perceived benefits and barriers). The current study was conducted to determine the relationship between decisional balance, self-efficacy and actual F&V intake using validated measurement scales.

Table 1- Demographic Data (n=74)

Race/Ethnicity		Gender	
White	99%	Male	14%
Black/African American	1%	Female	86%
Hispanic/Latino	3%		
Native American	1%		
Income		Marital Status	
\$0-\$9,999	28%	Married	66%
\$10,000-\$19,999	30%	Single	14%
\$20,000-\$29,000	31%	Widowed	1%
>\$30,000	12%	Separated	19%

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Figure 1- Transtheoretical Model²



*Perceived benefits = Ben, Perceived Barriers = Bar

Methods

SNAP participants (n=74) completed a survey containing a food frequency questionnaire (FFQ) for F&V intake and validated scales for perceived benefits, barriers, and self-efficacy of F&V intake. A 24-hour food recall using the Automated Self-Administered Assessment tool (ASA24) was also completed. Internal consistency of each TTM construct was measured using Cronbach Alpha. Linear regression and Spearman correlations were used to analyze relationship between F&V intake and perceived benefits, barriers, and self-efficacy.

Results

Perceived benefits did not have an acceptable internal consistency score ($\alpha=0.33$), however, perceived barriers met the minimum acceptable range ($\alpha=0.62$). In addition, self-efficacy had an acceptable score ($\alpha=0.75$). Perceived barriers and self-efficacy to consume F&V did not have any significant correlations or regression beta coefficients. Perceived benefits had significant correlations ($r=0.5$, $p=0.01$) and regression beta coefficients ($B=2.04$, $p=0.03$) with F&V intake measured by the FFQ when controlling for age, gender, and income, but not the ASA24.

Table 2. Factors Predicting F&V Intake Using Linear Regression (n=74)

Variables	Model 1 β (SE)	p	Model 2 β (SE)	p
Fruit and vegetable consumption measured using ASA 24				
Perceived Benefits	0.33(0.48)	0.50	0.79 (1.03)	0.46
Perceived Barriers	0.26(0.16)	0.13	0.18(0.19)	0.35
Self-Efficacy	-.09(0.17)	0.60	0.04(0.23)	0.87
Fruit and vegetable consumption measured using FFQ				
Perceived Benefits	0.74(0.39)	0.08	2.04 (.84)	0.03*
Perceived Barriers	0.14(0.14)	0.31	0.16(0.15)	0.32
Self-Efficacy	0.11(0.14)	0.44	0.15(0.19)	0.45

Significant variables indicated at $P<0.05^*$; Model 1: perceived benefits, barriers, and self-efficacy as predictors;

Model 2: adjusted for age, gender, and income

Table 3. Spearman Correlations of F&V Intake and Predictors (n=74)

Variables	ASA24 Correlation (p)	FFQ Correlation (p)
Perceived Benefits	0.20 (0.30)	0.50 (0.01) *
Perceived Barriers	0.21 (0.32)	0.26 (0.21)
Self-Efficacy	-0.07 (0.73)	0.29 (0.14)

Significant variables indicated at $P<0.05^*$

Survey Question Examples

Perceived Benefits (3 questions)

- I would feel better if I ate more fruits and vegetables.

Perceived Barriers (3 questions)

- I do not eat more fruits and vegetables because I do not know how to prepare them.

Self-Efficacy (5 questions)

- I feel I can keep fruits and vegetables available at home.

Response options:

- "I disagree a lot"
- "I agree a little"
- "I disagree a little"
- "I agree a lot"

Conclusion

Perceived benefits was the only construct with statistically significant associations to F&V intake. Results contrast previous research that found perceived barriers and self-efficacy to be stronger predictors of F&V consumption in the low-income population.¹ This research suggests that perceived benefits of F&V consumption may still be a worthwhile target for nutrition interventions.

References

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