



UNIVERSITY OF ALBERTA
SCHOOL OF PUBLIC HEALTH



Assessing the Exposure and Power of Food and Beverage Marketing in Public Recreation Facilities: A Validated Setting-Based Observational Tool

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Conflict of Interest

The COI disclosure statement was made and it is available on the abstract book.

No conflicts of interest to declare.



2010 WHO Recommendations:

Set of recommendations on the marketing of foods and non-alcoholic beverages to children

#1. Implement food marketing regulations to **reduce the impact** of unhealthy food marketing on children

#2. Policy should **reduce** both the **exposure** to, and **power**, of marketing of unhealthy foods

#5. **Children's settings are free of unhealthy food marketing**

#12. Member states should study food marketing in their own country

Research Methods Gaps

1. Assessment focuses on **single marketing channels/ techniques not settings**.
2. Methods do not measure marketing **comprehensively**.
 - 1 out of the 4Ps; present/absent
3. Most are not tested for reliability and **validity**.
4. Sports-related methods use **self-reported data**.
5. **Theory** is not present in assessment methods.



Objective

To develop a **novel theory-informed validated environmental assessment tool** and **scoring algorithm** to measure the nature and extent of **food marketing** *in municipal recreation facilities**

**Adaptable for other settings*



brampton.ca



wordans.ca

Why study food marketing by settings?

"Health is created and lived by people within the **settings of their everyday life**; where they learn, work, play, and love."



#5: **Children's settings** are free of unhealthy food marketing

1. Product
2. **Place**
3. Price
4. Promotion



Why study food marketing in sport settings?

- Use of sponsorship in sport (Inoue et al. 2015 J Sport Management)
- Children recall sport sponsors (Kelly et al. 2013 Public Health Nutr)
- Food industry emphasizes physical activity (Brownell & Warner 2009 Milbank Quarterly)
- Halo effect of marketing food+physical activity (Castonguay 2015 Communication Research)
- Children associate unhealthy foods and beverages with sport (Pettigrew et al. 2013 Public Health Nutr) and beverages with sport (Smith et al. 2014 Appetite)
- Large population reach (Kelly et al. 2014 J Sci Med Sport)

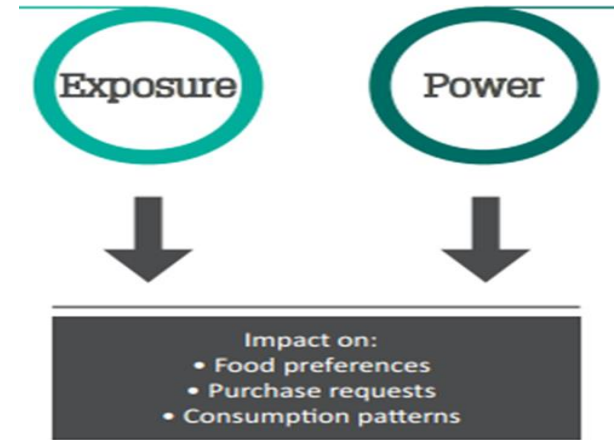


Food Marketing Assessment Tool for Settings (FoodMATS)

Business
(Marketing):



Public
Health:



Perreault Jr WD, McCarthy EJ, Cannon JP. Basic marketing: A marketing strategy planning approach: McGraw-Hill/Irwin; 2006.

World Health Organization. A framework for implementing the set of recommendations on the marketing of foods and non-alcoholic beverages to children. 2012.

Section 2 - Entrance, Reception Area & Hallways

Location	Product(s) or brand(s) advertised	Child-directed?		Sports-related?		Size of advertising ²		
Facility pamphlets or brochures <input type="checkbox"/> No food/bev ads <input type="checkbox"/> Not applicable	1.	Yes	No	Yes	No	S	M	L
	2.	Yes	No	Yes	No	S	M	L

FoodMATS Scoring

Factor	Exposure		Power			
Feature	Frequency (FREQ)	Repetition (REP)	Content (UNHE)	Design (CHIL / SPOR)		Execution (SIZE)
Indicator	<ul style="list-style-type: none"> Number of times food/beverage products, brands, retailers are marketed 	<ul style="list-style-type: none"> Repeated marketing of the same product, brand or retailer across the facility 	<ul style="list-style-type: none"> Nutritional quality of product, brand, or retailer that is marketed 	<ul style="list-style-type: none"> Use of child-targeting marketing techniques 	<ul style="list-style-type: none"> Inclusion of physical activity theme in marketing* 	<ul style="list-style-type: none"> Size of the marketing

Area Scores: $\text{FoodMATS}_{\text{Area}} = \text{FREQ} + (\text{FREQ} \times \text{POW})$,
 where $\text{POW} = \text{UNHE} + \text{CHIL} + \text{SPOR} + \text{SIZE}$

Facility Scores: $\text{FoodMATS}_{\text{Facility}} = \text{FoodMATS}_{\text{Sports}} + \text{FoodMATS}_{\text{Food}} + \text{FoodMATS}_{\text{Other}} + \text{REP}$





A cross-Canada initiative:

- Evaluate impact of **voluntary provincial nutrition guidelines**
- Evaluate impact of randomly assigned **capacity building intervention** for sites in guideline provinces





- N=51 recreation facility measurement sites
- Baseline data collection: December 2015-April 2016
 - FoodMATS (food and beverage marketing)*
 - Concession audit
 - Vending audit
 - Concession and vending sales reports*
 - Facility food policies
 - (Requested sponsorship/advertising dollars from a subset (n=27)*)

*used in validation analysis



Construct Validity

Predictive Validity

Do FoodMATs scores predict sales of “Least Healthy” foods and beverages?

“Least Healthy” = processed/energy-dense, nutrient poor foods and beverages with high levels of fat, sugar, and/or salt. i.e. deep fried foods, sugary drinks

Convergent Validity

Do FoodMATs scores correlate with facility sponsorship dollars (total, and food-related)?

Sponsorship dollars = dollars that outside companies paid to support the facility and/or to advertise in and around facility; may be part of advertising contracts or be simply financial donations.

Construct Validity

World Health Organization. A framework for implementing the set of recommendations on the marketing of foods and non-alcoholic beverages to children. 2012.

Exposure

the reach and frequency of the marketing message

Exposure

Power

the creative content, design and execution of the marketing message

Power

*Convergent validity
via partial Pearson's Correlation*

Facility Sponsorship Dollars

FoodMATS_{Facility} score*

*Higher FoodMATS scores are less favourable

*Predictive validity
via stepwise linear regression*

- Impact on:
- Food preferences
 - Purchase requests
 - Consumption patterns

Predictive Validity:

Do FoodMATs scores predict sales of “Least Healthy” foods and beverages?

Variable	n	Median	Interquartile Range ^a
<i>Weekly “Least Healthy” Sales</i>			
Total Sales (\$)	21	1100.35	290.32, 2521.94
Concession Sales (\$)	30	1515.94	466.82, 2354.15
Vending Sales (\$)	23	280.53	121.00, 567.58
<i>Marketing Scores</i>			
FoodMATs (points)	51	43.3	18.6, 71.0

^a 25th percentile, 75th percentile

Predictive Validity:

Predictor		Beta ^b	Beta ^c	R ² (adjusted)	R ² change (adjusted)	F
On concession sales (n=30) ^a						
Model 1:	Facility Size			0.328**	0.351**	15.149**
	Number of Sports Areas	0.593**	0.517**			
Model 2:	Marketing Scores			0.451***	0.138*	12.929***
	FoodMATS Score		0.379**			
On total (concession and vending) sales (n=21) ^a						
Model 1:	Facility Size			0.210*	0.250*	6.329
	Number of Sports Areas	0.500*	0.505**			
Model 2:	Marketing Scores			0.428**	0.235*	8.485**
	FoodMATS Score		0.485*			

^a Square root transformed

^b Standardized regression coefficients without marketing scores entered into the regression

^c Standardized regression coefficients with marketing scores entered into the regression

*p<0.05. **p<0.01. ***p<0.001.

Convergent Validity:

Do FoodMATs scores correlate with facility sponsorship dollars (total, and food-related)?

Variable	N	Median	Interquartile Range ^a
Total Sponsorship (\$)	16	15452.50	7630.50, 32825.00
Food Sponsorship (\$)	18	1350.00	0.00, 4120.50
FoodMATs (points)	27	43.6	10.3, 77.2

^a25th percentile, 75th percentile

- No linear relationship between Total Sponsorship (\$) and FoodMATs scores.
- Strong positive correlation between FoodMATs scores and Food Sponsorship (\$) received by facility in 2015-16 ($r=0.863$, $p<0.001$), after controlling for facility size.

Conclusions & Implications

The FoodMATS is a novel, validated tool that can measure the potential impact of food marketing in settings on facility-level sales.

Adaptable for other settings, the FoodMATS can inform and monitor effective policy interventions to restrict children's exposure to powerful unhealthy food and beverage marketing.

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