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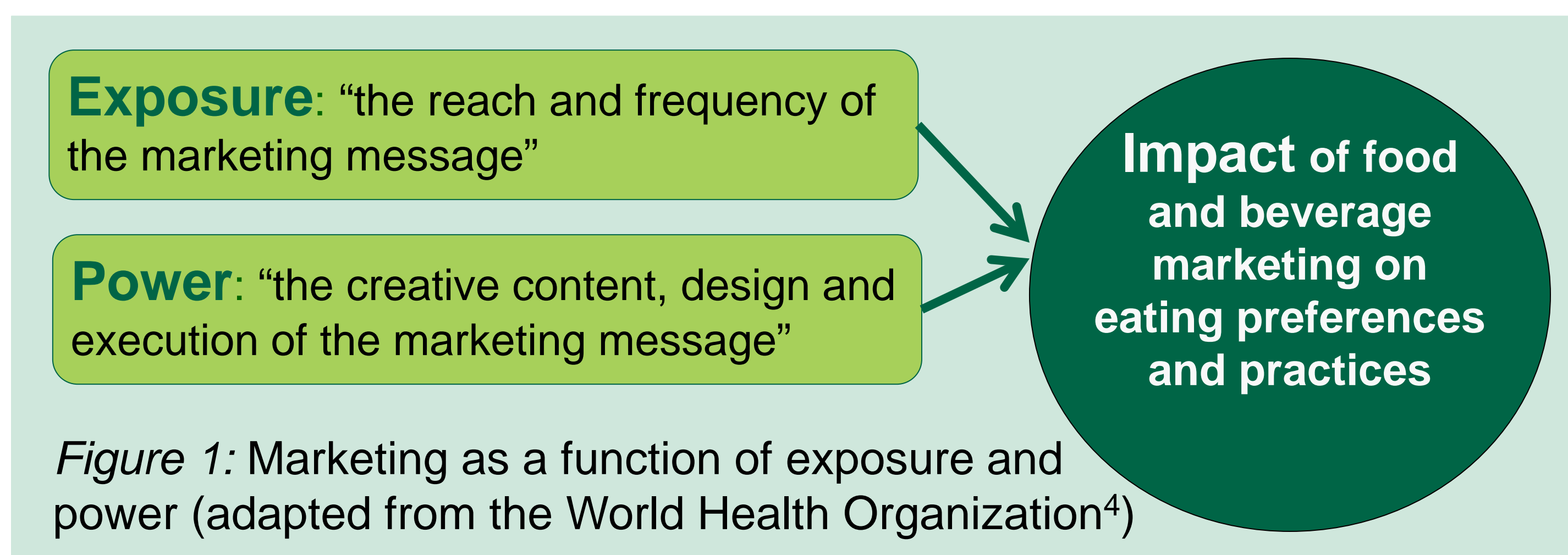
Background

- Despite providing physical activity opportunities for children, **public recreation and sport facilities (RFs)** often sell high calorie, low nutrient foods¹. (REF)
- RFs may also display unhealthy **food and beverage marketing (FBM)** which promotes poor diets and childhood obesity².
- Canadian efforts to improve the healthfulness of foods sold in RFs have not yet addressed FBM³.
- Unhealthy FBM may undermine efforts to improve the sale of healthy foods and is inconsistent with RFs' mandates to promote health.

Objective The purpose of this research was to explore the nature and extent of FBM in RFs in Canada.

Methods

- A cross-sectional audit of FBM was completed in 27 public RFs in Alberta and British Columbia, Canada using a new reliable observational tool.
- FBM in sports areas, food service areas, and other general areas (entrance, hallways, parking lot) in the RFs was observed. Specialty areas (i.e. theatres, day cares, meeting rooms, etc.) were not assessed.
- All instances of FBM were recorded. The following was recorded for each instance:
 - the product, brand, retailer (food store, restaurant, etc.) marketed
 - whether the promotion targeted children
 - whether the promotion related to sports
 - the physical size of the promotion
- FBM scores were developed, informed by a theoretical model (see Figure 1).



- Points were assigned for the number of FBM instances observed and evidence of "powerful" characteristics (healthfulness, appeal to children, themes of physical activity, and physical size) ranked as present/absent or on a 3 point scale based on evidence-based a priori definitions (see Table 1).
- For each area*, a FBM score was calculated:
FBM_{Area} = EXP + (EXP*POW)

*If there was more than one sports area or food area within one facility, each area was scored individually.

- For the entire facility, a total FBM Score was calculated by summing all area scores and adding a repetition factor:
Total FBM_{Facility} = FBM_{Sports} + FBM_{Food} + FBM_{Other} + REP
- Microsoft Excel 2010 was used to calculate marketing scores and descriptive statistics.

Table 1: Food and Beverage Marketing Components & Scoring

Scoring Component	Food-related Marketing Instance	Healthfulness of Marketing	Child-directed Marketing	Sports-related Marketing	Size of Marketing	Repetition of Marketing
	FREQ	UNHE	CHIL	SPOR	SIZE	REP
Definition	Any commercial advertising, promotion, or messaging of food or beverage products/ brands/ food retailers (i.e. restaurant) that is intended to increase the "recognition, appeal and/or consumption" of such products/ brands/ retailer ^{4, p.9}	Classified as "Most Healthy", "Less Healthy", "Least Healthy" informed by provincial nutrition guidelines ^{3,5} and relevant research ⁶ . Ranked as 0, 0.5, 1 for least to most.	Evidence of animated or fictional characters, taste appeals, humour, action-adventure, fantasy, fun (shapes, colours), competitions, give-aways, cartoonish font, or uses a child actor to advertise a food or beverage product/brand that would appeal to children ⁷ . Ranked as present (1) or absent (0).	Any reference to physical activity, exercise, sport, game, recreation, performance or competition. Ranked as present (1) or absent (0).	Classified as "small", "medium", "large", using different dimensions for indoor and outdoor promotions ⁸ . Ranked as 0, 0.5, 1 for small to large.	A product, brand, or food retailer that is marketing ≥ 3 times within 1 facility.
Points assigned	FREQ = # of instances * 0.2 pts	UNHE = \sumrankings / FREQ * 5 pts	CHIL = \sumrankings / FREQ * 5 pts	SPOR = \sumrankings / FREQ * 5 pts	SIZE = \sumrankings / FREQ * 5 pts	REP = # * 1 pt

Results

SCORES

- Overall, the median FBM Score was 43.1 points (range 1.9 to 368.7 points). FBM Scores were higher in Alberta RFs than British Columbia RFs (median 61.8 points versus 34.9 points, respectively). **Lower scores represent a more favourable marketing environment.**

EXPOSURE

- Frequency:** A total of 1072 instances of FBM were recorded. The overall median frequency of FBM per facility was 30 (range 1 – 212). More FBM was found in RFs in Alberta than in British Columbia.
- Repetition:** In Alberta, a median of 3 products, brands and/or retailers were marketed ≥ 3 times. In British Columbia, a median of 1 product, brand and/or retailer was marketed ≥ 3 times per facility.

POWER

- Healthfulness:** The ranking of healthfulness of food and beverage products, brands, and retailers marketing was identical in Alberta and British Columbia. Almost half (46%) were considered "Least Healthy" items (high in fat, sugar, and/or salt) (see Figure 2).
- Child-directed:** Child-directed marketing was less prevalent in Alberta RFs than British Columbia RFs (6% versus 18% of FBM marketing instances, respectively) (see Figure 3).
- Sports-related:** Facilities in Alberta and British Columbia had the same prevalence of sports-related marketing (9% of FBM instances) (see Figure 3).
- Size:** 40% of FBM instances recorded in Alberta and British Columbia were large in size (see Figure 3).

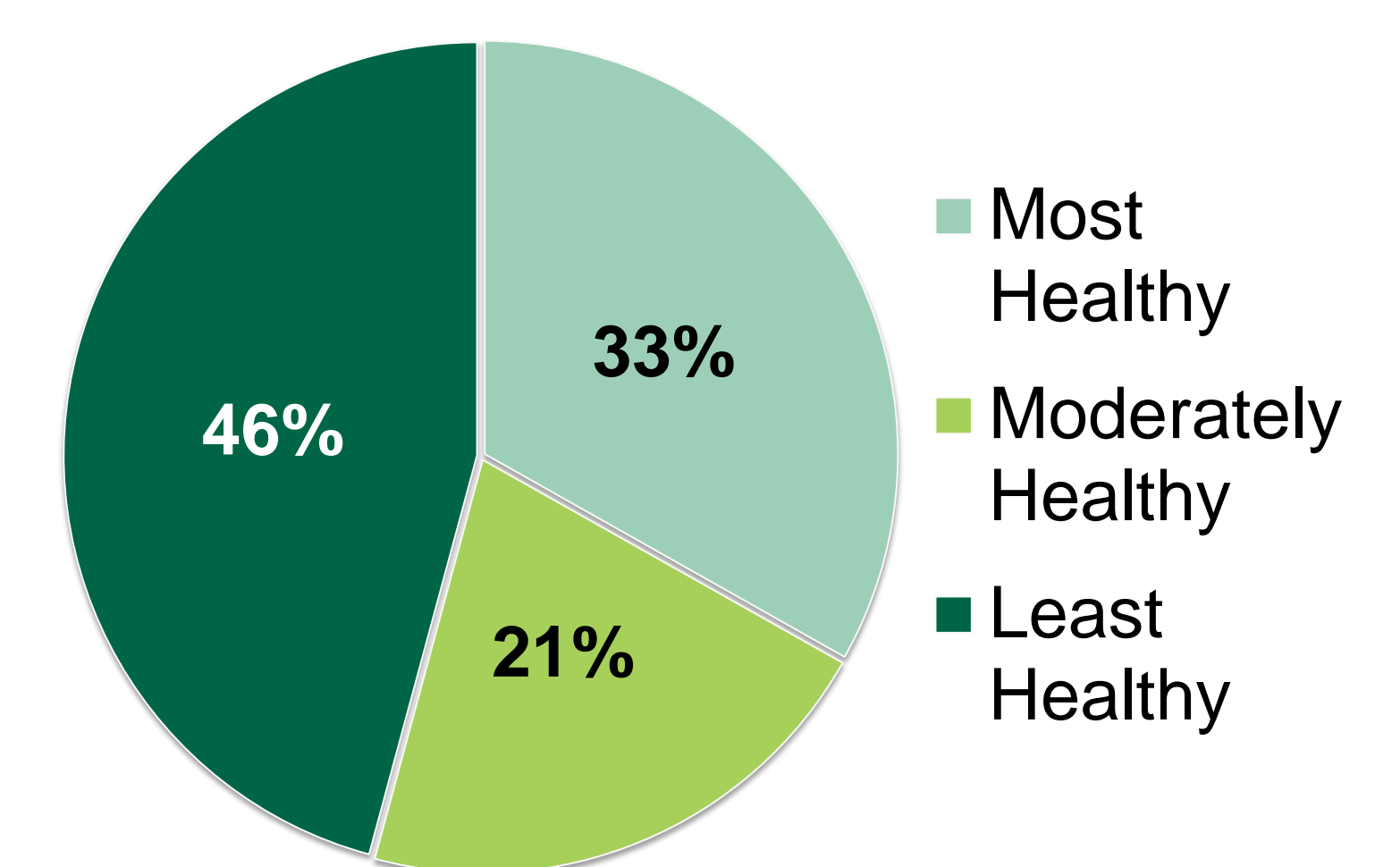


Figure 2: Proportion of products, brands, and retailers marketed all sites by healthfulness.

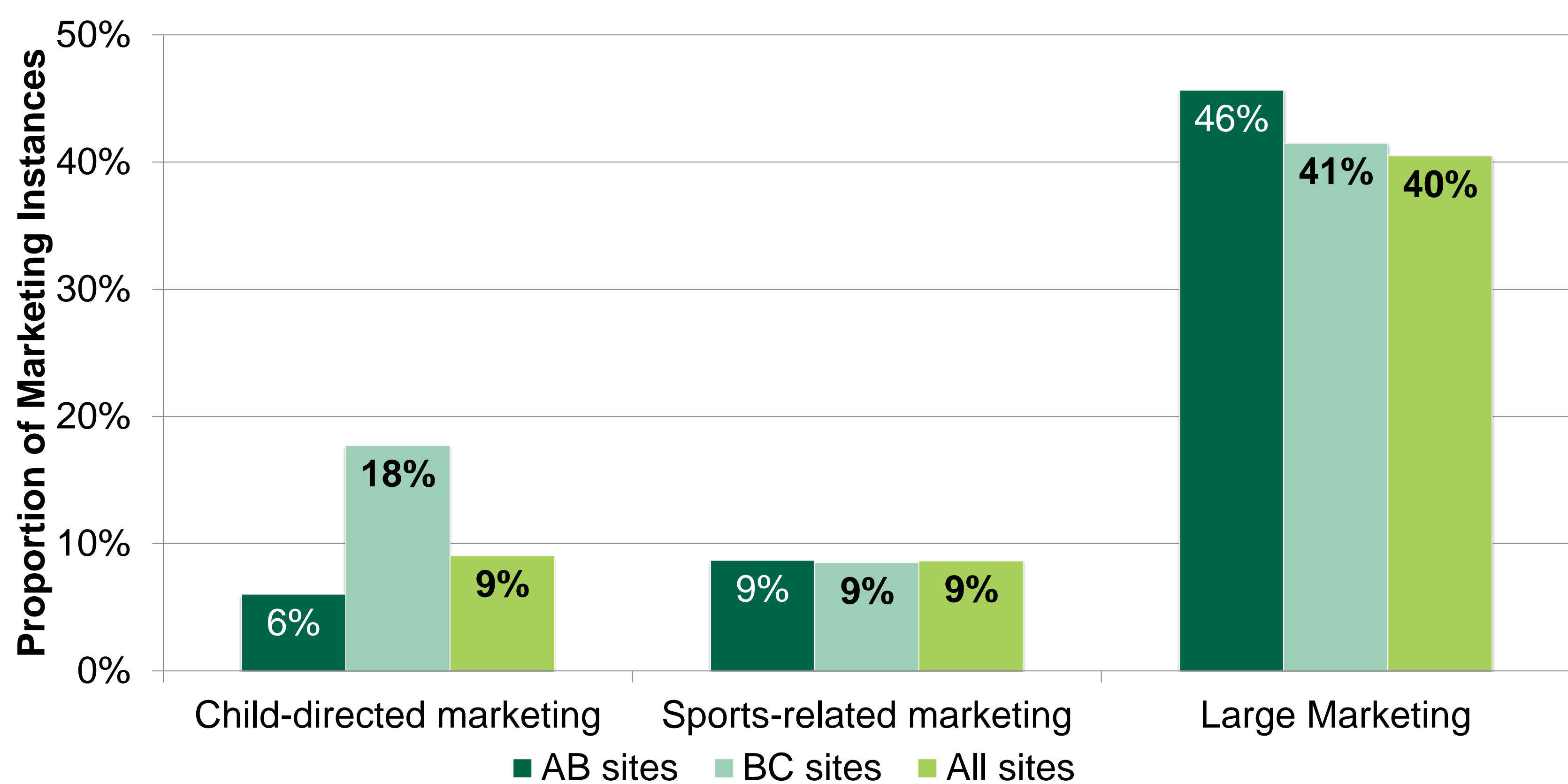


Figure 3: Proportion of FBM instances with evidence of child-directed, sports-related, and large characteristics.

Conclusions

- FBM was present in all RFs assessed in Alberta and British Columbia. Only 1/3 products, brands, and retailers were considered "Most Healthy" which is inconsistent with the health-promoting nature of RFs.
- Interventions to improve food environments in RFs could be improved by addressing FBM in addition to food quality and provision. Furthermore, policies to restrict unhealthy FBM to children may be more effective if they consider non-traditional settings, such as RFs.