

Comparing Effectiveness of Obesity Prevention and Reduction Messages among Canadian Adolescents

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Globesity

The global epidemic of obesity (World Health Organization, 2000) has resulted in a need to develop strategies for its prevention and management - at a global level and in Canada (Canadian Institute for Health Information, 2003).

Causes

Direct Behavioural Causes: Poor eating and physical activity habits, particularly among adolescents (Shields, 2005).

The Social Environment: Key determinant of teen physical activity/healthy eating behavioural habits (Bowman et al., 2004).

E.g., school environment, marketing exposure, screen time, etc.

Interventions

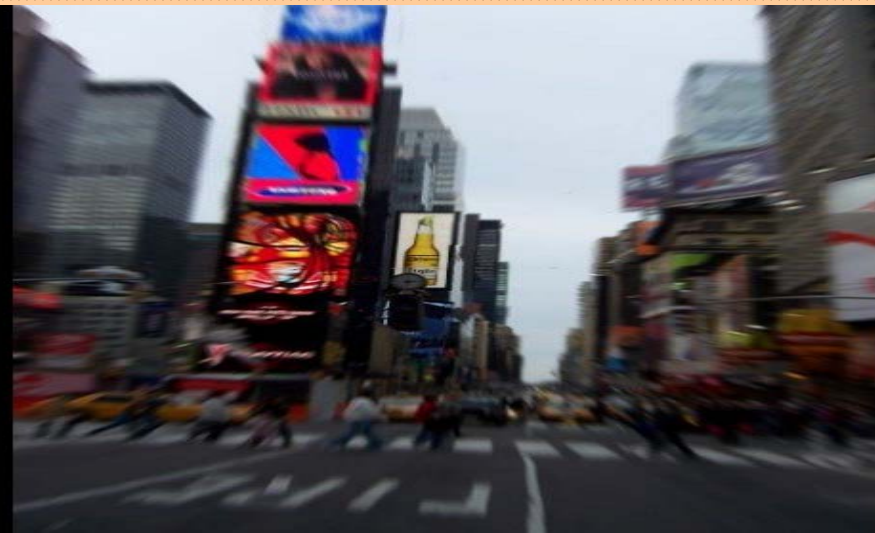
Obesity-Prevention Interventions:

- Individual (Dietz and Schoeller, 1982)
- Environment (French et al., 1997)
- Policy level (Kaiser Family Foundation, 2004)
- School or community (Hoeschler et al., 2002)
- Health communication (Agron et al., 2002; Bauman, 2004)

Our Study: Obesity prevention health promoting messages aimed at adolescents, with a focus on testing the effectiveness of messages by the presence or absence of health and the potential unintended effects associated with this tool.

Messaging

Unintended effects and messaging strategy should be considered when developing teen-focused obesity prevention public service advertisements (PSAs).



Unintended Effects

Psychological Theory of Reactance: When the freedom to engage in health-risk behaviours has been threatened or eliminated, the target may be motivated to re-establish the lost freedom (Brehm, 1966).

E.g., Drug abuse (Fishbein et al., 2002) and smoking (Wolburg, 2004).

There is a research need to examine if harmful outcomes can result from teen-focused obesity prevention messages (O'Dea, 2005).

Health-Benefit vs Positive Experience

Obesity-relevant messages geared towards teens should not focus on positive or negative health consequences, but rather positive experience motivationally-based messages (Mixon, 2001).

Why?

- Rebellion: Teens are likely to engage in risk taking behaviours (Fawcett, 2000).
- Invulnerable: Teens feel invulnerable to health-risk with the premise they can engage in healthy behaviours in the future (Goldman and Glantz, 1998).
- Meaningful: Positive experience messages (e.g., Huhman et al., 2004; Huhman et al., 2005) allow teens to identify with the message and incorporate their beliefs into an identifiable behaviour.

Body-Image and Health-Benefit PSAs

This study examined body-image ads as well as health-benefit ads designed to prevent adolescent obesity.



Formative Research Objectives

- (1) To identify pre-existing adolescent obesity prevention PSAs from countries and provinces outside of Alberta.
- (2) To explore reactions to obesity prevention PSAs and validate the groupings.

Main Pilot Study Hypothesis

- (1) Obesity prevention body-image PSAs would be significantly more likely to induce negative effects (weight attitudes, lower self-esteem and negative mood) compared to control PSAs.
- (2) Obesity prevention positive experience PSAs would receive better ad evaluations and result in more change intentions (physical activity and healthy eating) compared with obesity prevention health-benefit PSAs.

Procedure

Four research phases: exploratory research, formative qualitative research, pre-testing, and main pilot study.



PRELIMINARY RESEARCH

❶ PHASE I: EXPLORATORY RESEARCH

Obesity-specific PSAs gathered and grouped.

❷ PHASE II: FORMATIVE QUALITATIVE RESEARCH: FOCUS GROUPS

Three same-sex focus groups. Females and males, 14 -17 years ($N=13$).

❸ PHASE III: PRETEST

Cognitive interviews. Females and males, 13 -17 years ($N=10$).



HYPOTHESIS TESTING

❹ PHASE IV: MAIN PILOT STUDY

Randomized pre-post experimental design. Females and males, 12 -18 years ($N=95$).

- Group 1: Body-image PSAs ($n=21$)
- Group 2: Health-benefit PSAs ($n=25$)
- Group 3: Positive experience PSAs ($n=25$)
- Group 4: Control PSAs ($n=24$)

Hypotheses:

- Obesity prevention body -image PSAs would be significantly more likely to induce negative effects (weight attitudes, lower self-esteem and negative mood) compared to control.
- Obesity prevention positive experience PSAs would receive better ad evaluations and result in more change intentions (physical activity and healthy eating) compared with obesity prevention health-benefit PSAs.

Pre-Post Surveys: The State Self-Esteem Scale, the Multiple Affect Adjective Check List, a Healthy Eating Intention Scale, a Physical Activity Intention Scale, the Healthy Eating: Stages of Change Short Form and the Physical Activity: Stages of Change Form.

Post-Only Surveys: Ad Evaluation Scale and the Attitudes About Weight and Dieting Scale.

Participants

Adolescents, 12-18 years were used for all participant data collection stages.



Recruitment

Systematic Snowball Sampling, Public Advertising, and Personal Networks:

- Pre-Test: 10 teenagers, 13-17 years.
- Focus Group: Eight teenagers, 14-17 years.
- Main Experiment: 95 teenagers (45 males, 50 females), 12-18 years.

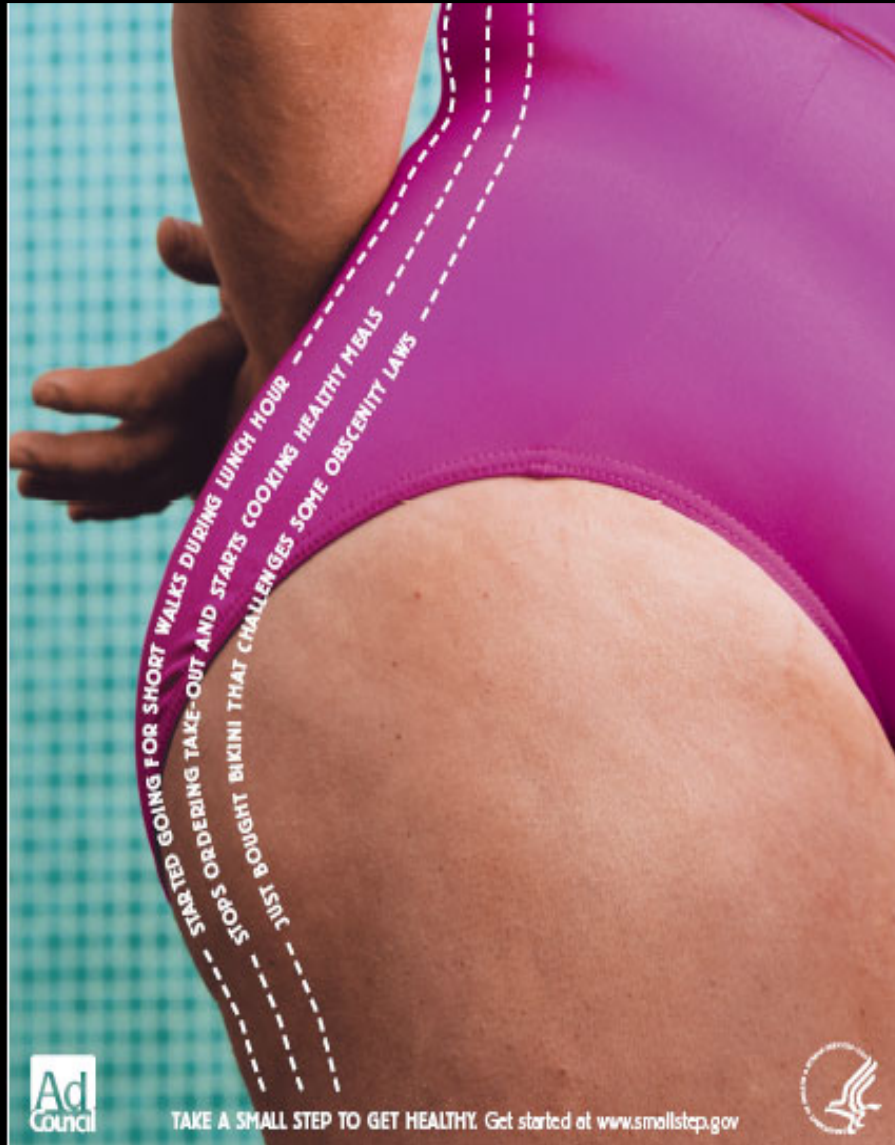
Sample

Youth groups and educational institutes in Calgary, Alberta (Canada) were targeted.



Calgary Board of Education

Body-Image Health-Benefit Focused



Used regularly, it can help fight cancer.

Childhood obesity has been linked to serious health problems, including cancer. Encouraging regular exercise can prevent obesity and improve your kid's long-term health.

Health Line Peel
905-799-7700.

Region of Peel
Working for you

www.peel-obesity.ca

Positive Experience



Control Condition

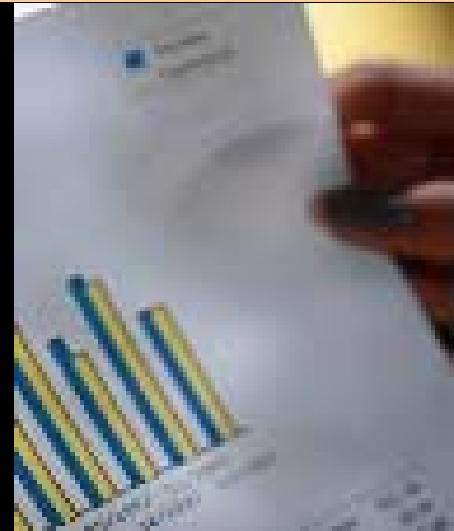


To find out ways to volunteer in your community,
check out www.teensvolunteer.org



Analysis

One-Way Between-Subjects ANOVAs and Chi-Square Tests of Independence were done as primary analysis for the main experiment.



Unintended Effects

No main effects exist for unintended effects; however, a marginally significant main effect of type of PSA on the subscale, anxiety change was found ($F=2.56, p=.06$).

Planned comparisons revealed body-image PSAs were significantly more likely to show an increase in anxiety between pre and post exposure as compared to those exposed to control PSAs.

Ad Evaluation/Behaviour Intention

Health-benefit PSAs received significantly higher subscale readability than experimental conditions ($F=4.59, p<.01$) and were more likely to result in healthy eating planning ($F = 3.19, p< .05$) than control.

One-way ANOVA revealed a significant main effect of PSA type on overall ad evaluation ($F = 8.62, p< .01$) and associated subscales; wherein, control PSAs received significantly lower ratings than other PSAs.

Discussion.

Obesity prevention body-image PSAs may increase anxiety (as predicted), while health-benefit PSAs were more readable and caused healthy eating planning among teens (contrary to predictions).

Unintended Effects

Weight Attitude: No effect - social desirability? (Klesges et al., 2004)

State Self-Esteem: No effect – social comparison theory (Festinger, 1954) or high vs. low self-esteem and perceptions of being obese/overweight (O’Dea, 2005).

Mood: Effect found - overweight/obese images and not just the thin-ideal may cause unintended effects (Haines and Neumark-Sztainer, 2006).

Ad Evaluation/Change Intentions

Ad Evaluation: Health PSAs more readable than other experimental PSAs - advertising design (Bovée and Arens, 1982). Control ads were given lower ratings, salience effect (Zimbardo and Leippe, 1991).

Change Intentions: Health PSAs caused increases in intentions to eat healthy among teens - immediate statistics (Witte, 1997) or advertising design (Bovée and Arens, 1982). No increase in intentions to participate in physical activity was found.

Conclusions and Recommendations.

Researchers and organizations globally are making efforts to use mass media to prevent and reduce adolescent obesity.



Conclusions

- Health focus may not reduce the effectiveness of obesity prevention PSAs;
- Body-image obesity prevention PSAs may increase anxiety among teens - further testing is required;
- Further testing is also required to determine if the health-benefit PSA success is due to short vs. long-term health messages or the visual appeal of healthy eating health-benefit ads;
- Physical activity and healthy eating ads may be more appealing than unrelated control ads.

Further Research and Practice

Research: Participants with different weights to test the social comparison theory, low versus high self-esteem and unintended effects, direct behavioural measures, and real world-setting (longer exposure and professional ad development).

Practice: Multi-disciplinary teams, multi-component intervention (social marketing, environmental, and policy), and formative research.