CHILDHOOD OBESITY CAMPAIGNS: A COMPARATIVE ANALYSIS OF MEDIA CAMPAIGNS TARGETING GENERAL & SPECIFIC AUDIENCES

A Thesis by

Pamela K. O’Neal

Bachelor of Arts, Wichita State University, 2007

Submitted to the Department of Communication and the faculty of the Graduate School of Wichita State University in partial fulfillment of the requirements for the degree of Master of Arts

August 2010
CHILDHOOD OBESITY CAMPAIGNS: A COMPARTIVE ANALYSIS OF MEDIA CAMPAIGNS TARGETING GENERAL & SPECIFIC AUDIENCES

The following faculty members have examined the final copy of this thesis for form and content, and recommend that it be accepted in partial fulfillment of the requirement for the degree of Master of Arts, with a major in Communication.

__________________________________________
Deborah Ballard-Reisch, Committee Chair

__________________________________________
Lisa, Parcell, Committee Member

__________________________________________
Teresa Radebaugh, Committee Member
DEDICATION

To my grandmother, Betty O’Neal, who encouraged me to go as far as I can in my education.
ACKNOWLEDGMENTS

I would like to thank my advisor, Dr. Deborah Ballard-Reisch for the countless hours spent not only helping me with my educational endeavors but also for never giving up on me when I already had. Her wisdom and guidance over the years have made my educational experience the best it could be. Thanks are also due to Dr. Lisa Parcell, who always encouraged me to be the best person I can and whose wisdom I will carry with me forever. I would also like to thank Dr. Terry Radebaugh for her unyielding support in my educational endeavors.
ABSTRACT

In the past thirty years childhood obesity rates have doubled and even tripled in some age groups in the U.S. (Centers for Disease Control and Prevention, 2008). It has become so severe and affected so many children, it has recently been labeled an epidemic by the World Health Organization (2009). Reports demonstrate that rates are higher among co-cultural populations such as African Americans and Hispanics and vary across populations between females and males (CDC, 2008). One strategy employed by many organizations to help reduce the rate of childhood obesity is the use of mass media campaigns (Evans, 2008). Due to the rise in childhood obesity rates and the use of mass media campaigns in an effort to reduce those rates, this study examines childhood obesity media campaigns and their impact on the populations they target. Because rates are higher among co-cultural populations and because they also differ between female and male children, this study examines how campaigns use various techniques to convey health messages to children of specific populations and of different sex.

In order to determine if the strategies the campaigns employ are different among the diverse racial and ethnical populations and between female and male children and to determine the specific strategies utilized, articles that report on the effectiveness of campaigns will be systematically reviewed. Employing Glaser & Straus’ (1967) constant comparative analysis methodology, this study will utilize prior research to identify codes and report on strategies that appear throughout campaign literature (Glaser & Straus, 1967). Using a systematic approach, articles that report on (1) the effectiveness of childhood obesity media campaigns (2) childhood obesity campaigns targeting racial and ethnical populations and (3) campaigns with female and male children will be identified and selected for the study. Articles will then be read and coded and the results reported. (For a list of terms and definitions, see Appendix A.)
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>1. LITERATURE REVIEW</td>
<td>4</td>
</tr>
<tr>
<td>Health Campaign Dissemination Methods</td>
<td>4</td>
</tr>
<tr>
<td>The Need for Childhood Nutrition and Physical Activity Promotion Campaigns</td>
<td>7</td>
</tr>
<tr>
<td>Childhood overweight/obesity rates</td>
<td>8</td>
</tr>
<tr>
<td>Exemplars of Childhood Nutrition and Physical Activity Promotion Campaigns</td>
<td>9</td>
</tr>
<tr>
<td>5-A-Day for Better Health</td>
<td>10</td>
</tr>
<tr>
<td>5-4-3-2-1 Go!</td>
<td>12</td>
</tr>
<tr>
<td>1% or Less</td>
<td>13</td>
</tr>
<tr>
<td>The Use of Theory in Campaign Development</td>
<td>16</td>
</tr>
<tr>
<td>Social Cognitive Theory</td>
<td>17</td>
</tr>
<tr>
<td>Transtheoretical Model</td>
<td>17</td>
</tr>
<tr>
<td>Evaluation of Physical Activity &amp; Nutrition Based Health Campaigns</td>
<td>19</td>
</tr>
<tr>
<td>“Recommended Best Practices” for Health Campaigns</td>
<td>20</td>
</tr>
<tr>
<td>Promising Strategies for Health Campaigns</td>
<td>23</td>
</tr>
<tr>
<td>Study Rationale</td>
<td>24</td>
</tr>
<tr>
<td>2. METHODOLOGY</td>
<td>26</td>
</tr>
<tr>
<td>Article Selection</td>
<td>26</td>
</tr>
<tr>
<td>Data Analysis</td>
<td>31</td>
</tr>
<tr>
<td>3. RESULTS</td>
<td>35</td>
</tr>
<tr>
<td>4. DISCUSSION</td>
<td>49</td>
</tr>
<tr>
<td>Disparities and Recommended “Best Practices”</td>
<td>54</td>
</tr>
<tr>
<td>Limitations</td>
<td>57</td>
</tr>
<tr>
<td>Future Studies</td>
<td>59</td>
</tr>
<tr>
<td>LIST OF REFERENCES</td>
<td>61</td>
</tr>
<tr>
<td>APPENDICES</td>
<td>70</td>
</tr>
<tr>
<td>A. Definition of Terms</td>
<td>71</td>
</tr>
<tr>
<td>B. Articles used in analysis</td>
<td>74</td>
</tr>
</tbody>
</table>
INTRODUCTION – HISTORY OF HEALTH COMMUNICATION CAMPAIGNS

Health communication campaigns in the U. S. were launched as early as 1721 when Cotton Mather sought to inoculate citizens with the small pox vaccine (Snyder, 2007). Since that time, many campaigns have been developed with the intention of persuading an audience to change a specific behavior or attitude (Randolph & Viswanath, 2004). In the 1800's and 1900's campaigns about slavery, the consumption of alcohol and child labor (Snyder, 2007). One of the most visible marketing strategies, the pink ribbon campaign, has been credited with promoting breast cancer awareness and reducing the number of deaths associated with the disease (King, 2009). Numerous campaigns have been implemented with the intention of reducing tobacco use among both youth and adults (Evans, 2008; Fitzgibbon, Gans, Evans, Viswanath, Johnson-Taylor & Krebs-Smith, 2007). Truth, a campaign launched in 2000 by the American Legacy Foundation to reduce the use of tobacco among teenagers, is considered a model campaign (Fitzgibbon et al., 2007) because it successfully reduced teen smoking rates (Farrelly, Davis, Haviland, Messeri & Healton, 2005).

Although campaigns to persuade an audience to become more healthy, like Cotton Mather’s, have been around since the early 1700's, using mass media and techniques such as social marketing have only become common in the past thirty five years (Evans, 2008). Using mass media, the United States government has taken an active step in promoting the health of its citizens. In 1973 a President's Committee on Health Education was formed to “examine opportunities to prevent disease, promote health and improve the capacity of individuals to practice self care” (Lincoln & Nutbeam, 2006, p.11). Three years later in 1976, the Office of Health Information and Health Promotion was established by the United States Department of Health and Human Services (USDHHS), which played a critical role in the development of
health policy. This office (later renamed the Office for Disease Prevention and Health Promotion) “was instrumental in building a firm policy platform for health promotion in the U.S.A.” (Lincoln & Nutbeam, 2006, p.11). With the establishment of these offices, the government has helped fund and implement campaigns to promote healthy behaviors in the United States (Fitzgibbon, et al., 2007). In 1990 the USDHHS released Healthy People 2000 and in 2000, Healthy People 2010. Based on scientific research, “Healthy People is the prevention agenda for the nation. It is a statement of national opportunities – a tool that identifies the most significant preventable threats to health and focuses public and private sector efforts to address those threats” (Office of Disease Prevention and Health Promotion, 2000, p.1). Healthy People 2010 listed 10 leading health indicators; at the top of the list were physical activity promotion and overweight and obesity prevention (USDHHS, 2000, p.1).

Numerous campaigns aimed at promoting nutrition and increased physical activity have been developed and implemented with the goal of reducing the number of overweight and obese children in the United States. It is critical that health communication campaigns, which utilize mass media for information dissemination to help prevent and reduce childhood obesity, employ methods that ensure messages will be appropriate for both females and males and speak directly to ethnic populations whose childhood obesity rates are above the national average. This issue is particularly critical because “Despite great improvements in the overall health of the nation, health disparities remain widespread among members of racial and ethnic co-cultural populations” (CDC, 2008, p. 1).

Therefore, this study is a systematic review of the literature on the effectiveness of mass media campaigns to promote physical activity and nutritional habits to children of racial and ethnic backgrounds. This literature review will: 1) discuss health campaign
dissemination methods, 2) discuss the need for and exemplars of childhood obesity prevention campaigns, 3) review theories used to inform campaign development, 4) discuss the evaluation of physical activity promotion and healthy nutrition campaigns, 5) give guidelines for campaign evaluation and 6) provide a rationale for the proposed study and identify research questions.
CHAPTER 1

LITERATURE REVIEW

Health Campaign Dissemination Methods

Utilizing social marketing and processes like branding, campaigns use mass media to distribute their messages because doing so enables the developers to reach large audiences (Randolph & Viswanath, 2004). Campaign planners may use various channels to distribute messages including television, newspapers, magazines (or other printed material) and the Internet to reach desired audiences (USDHHS, 2000). Programs that rely on television to disseminate their message usually do so with public service announcements (PSAs) (USDHHS, 2000). “A public service announcement is an announcement for which no charge is made and serves community interests by promoting programs, activities, or services of governmental or other nonprofit organizations and is broadcast for free” (Federal Communications Commission, 2009, p. 1). Public health officials have also suggested inserting health related messages into television programs as doing so has been reported to generate public interest and at times, prompt viewers to talk with or visit a physician after viewing the program (Kaiser Foundation, 2004).

Health communication campaigns also use printed material to distribute a message. Advertisements promoting a particular action or providing information about a particular health topic may be printed in newspapers or magazines (Wootan, et. al., 2005); pamphlets or brochures may be produced and distributed (Wilson, 2007) and billboards or interactive media may be used (USDHHS, 2000). VERB, which was developed and implemented by the CDC to help promote physical activity among children, was implemented with interactive websites and regularly updated information (Wong, et. al., 2008). Although mass media campaigns enable health related
messages to be distributed to large audiences, they can also cause confusion (Wilson, 2007). Campaigns that employ print, television, billboards or the Internet may face obstacles such as lack of comprehension of material, lack of funding and lack of proper dissemination of information according to target audience (Siegel & Lotenberg, 2007).

Printed material may be difficult for some readers to comprehend, especially if it is targeted to young children (Wilson, 2007). Frequently campaign developers want to compete with messages aimed toward children, like those disseminated by fast food restaurants, but they often do not have the financial resources to pay for commercials (Committee on Health Education, Labor and Pensions, 2004). Finally, those campaigns that rely on the use of the Internet risk missing the audience who may most need the information (Fitzgibbon, et al., 2007).

“Often people with the greatest health burdens have the least access to information” (USDHHS, 2000, p. 11-9).

Because each type of media has disadvantages, it is recommended that campaigns employ multiple types of media to disseminate their messages (Evans, 2008; Fitzgibbon, et al., 2007; Hornik & Kelley, 2007; Institute of Medicine, 2004; USDHHS, 2000). While using different forms of media to distribute a message, campaign developers have also used social marketing and branding strategies to make their messages more appealing to audiences (Donato, 2006; Evans 2007; Evans 2008, Fitzgibbon, et al., 2007; Kreps & Maibach, 2008; & USDHHS, 2000).

“Social marketing applies the central marketing strategy of building positive relationships with the audience to increase the value of promoted behaviors and to encourage exchange in the form of behavior adoption” (Evans, 2008, p. 182). Many campaigns have applied social marketing in order to help persuade or inform an audience of the message they want to convey
Social marketing is often utilized because developers of mass media campaigns believe it may foster opportunities and provide rationale for youth to find healthy alternatives by offering other attractive means to satisfy their desires (USDHHS, 2000).

Developers of mass media health campaigns have also used branding as a strategy to convey their messages (Donato, 2006). Douglas Evans, in his 2008 article, published in the journal *Future of Children, Social Marketing Campaigns and Children’s Media Use*, explains how health communication campaigns utilize branding to influence a target audience.

The hypothesis underlying public health branding as a social marketing strategy is that adopting branded ‘healthful lifestyles’ increases the probability that individuals will engage in health-promoting and disease-preventing behaviors and that the associations individuals form with these brands, such as *Truth* or *VERB* campaign brands, mediate the relationship between social marketing messages and health behaviors such as remaining a nonsmoker or exercising. (p. 187)

Branding is thought to be a successful strategy especially when the objective of a campaign is to alter an audiences’ behavior such as limiting a child's media use (Evans, 2008).

Campaigns can use media, including printed messages, television and the Internet, as part of a strategy of social marketing and branding to reach their goals and objectives (USDHHS, 2000). Information dissemination is a goal of many health campaigns and considered a necessary step in moving an audience toward behavior change (Snyder, 2007). This may be done in two ways: 1) developers may desire to increase the amount of information available about a topic or 2) reframe a message to make it more appealing to an audience.

Behavior change is often a goal of health campaigns (Kreps & Maibach, 2008). Campaigns may try to change behavior through encouragement of certain health behaviors or
discouragement of unhealthy behaviors (Randolph & Viswanath, 2004). Although it may be the
goal of a campaign to change the behavior of a target audience, it may also have the capability to
change behaviors of secondary audiences such as schools, policymakers, politicians and
manufacturers. For example, a campaign whose goal is to change the eating behaviors of youth
may find that their message has also influenced school cafeterias to serve more fresh fruits and
vegetables (Hornik & Kelley, 2007).

Although health campaigns often share methods, techniques and goals, the messages they
communicate vary (Snyder, 2007). The effectiveness of mediated health campaigns can be
partially affected by the specific behavior that it is trying to promote. For example, campaigns
that promote nutrition and physical activity, like many childhood obesity campaigns, usually
have a success rate of about five percentage points (Snyder, 2007). Because many states, like
Kansas, have childhood obesity rates at or above 30%, mass media campaigns have been
developed with the intention of reducing the number of overweight and obese children (Robert

The Need for Childhood Nutrition and Physical Activity Promotion Campaigns

Between 1980 and 2004, the childhood obesity prevalence rate for children ages 6 to 11
increased from 6.5% to 18.8%, while the rate for children 12 to 19 increased from 5% to 17.4%
(National Center for Health Statistics, 2007). Currently, there are approximately 25 million U.S.
children who are overweight or obese (Mayo Clinic, 2006). It has become such a problem that
the World Health Organization (WHO, 2009) has deemed childhood obesity “one of the most
serious public health challenges of the 21st century” (p. 1). Today only one state, Colorado, has
less than 20 percent of its children classified as overweight or obese; most states have rates of 25
percent or more (CDC, 2009). Kansas was recently ranked 21st in the nation with 31.3 percent of
its children overweight or obese (RWJF, 2009).

For American children aged 12-19 the overall rate for obesity is 17.6% (CDC, 2009). However, when this rate is broken down by sex, race and ethnic group, disparities become apparent. The table below is based on data from the CDC’s Morbidity and Mortality Weekly Report (2008) and the Bureau of Indian Education/Youth Risk Behavior Survey (BIE/YRBS) (2005) and presents the percentage of high school students who were overweight and obese by race/ethnicity and sex:

**Childhood overweight/obesity rates**

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Female</th>
<th>Male</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>6.8</td>
<td>14.6</td>
<td>10.8</td>
</tr>
<tr>
<td>Black</td>
<td>17.8</td>
<td>18.9</td>
<td>18.3</td>
</tr>
<tr>
<td>Hispanic</td>
<td>12.7</td>
<td>20.3</td>
<td>16.6</td>
</tr>
<tr>
<td>American Indian*</td>
<td>18.4</td>
<td>16.5</td>
<td>17.5</td>
</tr>
</tbody>
</table>

* The Bureau of Indian Education/Youth Risk Behavior Survey (BIE/YRBS) is taken every three years. Therefore, the statistics shown for American Indians are from the year 2005 (CDC, 2005).

This table demonstrates the disparities across racial, ethnic, female and male populations in high school youth as population percentages. For example, the percentage of Hispanic females who are overweight or obese is 12.7% while the percentage of overweight or obese white females is almost half that at 6.8%. For three of the four population groups, males are more at risk for childhood obesity than females. Four of the six co-culture population groups have obesity rates above the national rate. The table suggests that co-cultural populations experience higher childhood obesity rates than do White Americans.
There are serious health consequences for children who are overweight or obese. Complications of childhood obesity include: type 2 diabetes, high blood pressure, sleep apnea, liver disease, asthma, and skin infections (National Institutes of Health, 2008.) Consequences of childhood obesity are not limited to physical ailments. Children who are overweight or obese also suffer from mental anguish and are often the targets of teasing by their peers (Rimm, 2005). And children are not the only ones who suffer. According to a recent report by Thomson (2006), childhood obesity costs approximately $11 billion annually for those with private insurance and $3 billion for those with Medicaid. Because of the consequences associated with childhood obesity, organizations have set aside hundreds of millions of dollars aimed at reducing the number of overweight and obese children in the United States (Abbatangelo-Gray, Cole, & Kennedy, 2004).

Exemplars of Childhood Nutrition and Physical Activity Promotion Campaigns

 Appropriately addressing the issue of childhood obesity may be essential in reducing it (Randolph & Viswanath, 2004). “How the obesity issue is framed is of the utmost importance to how it is addressed. Who or what is perceived as responsible for the genesis of obesity is a prime determinant of how obese individuals are received by society and what actions are considered appropriate for both treatment and prevention” (Schwartz & Brownell, 2007, p. 79). When childhood obesity is framed within a public health model rather than a medical model, society views it as a problem caused by environmental factors rather than individual factors (Schwartz & Brownell, 2007).

 Organizations, such as the Robert Wood Johnson Foundation (RWJF) have begun to address the issue of childhood obesity from a public health perspective and have granted millions of dollars to help reduce the rates of childhood obesity by the year 2015 (RWJF, 2007). President
and CEO of RWJF, Risa Lavizzo-Mourey, calls it an All-American crisis and says, “It affects all Americans, and it will require all of America working together to turn it around” (RWJF, 2007, p. 1).

In an effort to impact childhood obesity rates, organizations have turned to mass media campaigns (Evans, 2008). “Mass media campaigns, because of their wide reach, appeal, and cost-effectiveness have been major tools in health promotion and disease prevention” (Randolph & Viswanath, 2004, p. 433). Specifically, mass media campaigns have been implemented to promote physical activity among children and to impact their diets (Kaiser Foundation, 2004).

Campaigns designed to help reduce and prevent childhood obesity include:

- **VERB**: A program to promote physical activity for tweens (children age 9-13 years) created by the Centers for Disease Control and Prevention
- **5-A Day for Better Health**: A nutrition campaign for individuals to increase consumption of fruit and vegetables designed by the National Cancer Institute
- **5-4-3-2-1 Go!**: A campaign designed to remind children to eat healthier and be more active created by the Consortium to Lower Obesity in Chicago
- **1% or Less**: A campaign to motivate individuals to switch from whole milk to 1% developed by the Center for Science in the Public Interest

These campaigns, along with others, have been generated with the hopes of reducing the number of overweight or obese children in the United States (Donato, 2006).

**VERB**

**VERB** was introduced and implemented in an effort to motivate children to be more physically active (Donato, 2006). Congress, in 2001 appropriated $125 million to the CDC to implement a campaign that would generate messages aimed at 9 to 13 year-old children (tweens)
to encourage them to become more physically active (Fitzgibbon, et al., 2007 & Wong, et. al., 2008). According to the CDC program planners, “VERB is a 'for kids, by kids' brand that promotes positive 'can do' messages. It is not an adult directed, 'should do, must do, can't do' campaign” (Donato, 2006, p. S68). The campaign ran from mid June of 2002 through September 30, 2006.

Objectives of the campaign were to:

- Increase knowledge and improve attitudes and beliefs about tweens’ regular participation in physical activity
- Increase parental and influencer support and encouragement of tweens’ participation in physical activity
- Heighten awareness of options and opportunities for tween participation in physical activity
- Facilitate opportunities for tweens to participate in regular physical activity
- Increase and maintain the number of tweens who regularly participate in physical activity. (CDC, 2008, p. 1)

The CDC touted the campaign as a “national, multicultural, social marketing campaign” (CDC, 2008, p. 1). It combined strategies such as paid advertising in the form of commercials, an interactive website and advertisements in national magazines (CDC, 2008, p. 1).

By employing social marketing, developers were able to market physical activity as something that was “fun” and “cool” (Wong, et al., 2008). Because the federal government had allocated funds for VERB, developers were able to buy prime time advertising in the form of television commercials and advertisements in national magazines which allowed them to compete with other commercial marketers to disseminate their message to a wider, more diverse
population than most campaigns (Berkowitz, et al., 2008).

Several obstacles arose (Wong, et al., 2008) within the VERB campaign. First, because campaigns that focus on improving physical activity are relatively new, it is difficult to determine potential sustainability (Institute of Medicine, 2004). Further, because these types of campaigns were new, evidence based evaluation standards were limited (Bauman et al., 2006). However, campaign evaluation sought to provide answers to the following questions:

- What level of awareness of the VERB campaign was achieved in the target population and to what extent did they understand its messages?

- Was there evidence of an association between tweens’ awareness of VERB and their attitudes and behaviors related to physical activity?

- Were there temporal changes in tweens’ attitudes and behaviors related to physical activity during the campaign? (Potter, Judkins, Piesse, Nolin, & Huhman, 2008 p. S230)

To determine the answers to those questions, parent/tween dyads were interviewed via phone before the campaign was implemented and annually from the years 2002-2006 (Potter, Judkins, Piesse, Nolin, & Huhman, 2008). Analysis of interview data indicated that VERB was successful in accomplishing its goals and objectives (Berkowitz, et al., 2008). However, as VERB was the first media campaign to exclusively promote physical activity in children, it is difficult to determine if these results are sustainable (Huhman, Bauman & Bowles, 2008).

5-A-Day for Better Health

Another example of a mass media health program partly sponsored by the United States government is the 5-A-Day for Better Health campaign. It was a campaign from the National Cancer Institute (NCI) and was a public/private partnership between the government and the fruit and vegetable industry. The main objective was to encourage individuals to eat at least five fruits
and/or vegetables a day (Donato, 2006). The campaign targeted children, parents and families (Evans, 2008).

Now known as *Fruit and Veggies Matter*, it began as a statewide program in California in 1989 and became a nationwide campaign in 1991 (Hornik & Kelley, 2007). The campaign utilized three information dissemination methods: a media campaign, a retail point-of-purchase program, and community-level interventions (NCI, 2006). Developers of the campaign also created a logo, which was used in all messages (Fitzgibbon, et al., 2007). The campaign also used social marketing to encourage parents to talk to their children about health behaviors and to change family practices and behaviors to more nutritious and physically active ones (Evans, 2008). Since the inception of the program, NCI has spent about one million dollars a year to support the campaign (Fitzgibbon, et al., 2007).

Like the *VERB* campaign, developers desired an evaluation of the campaign (NCI, 2006). The NCI provided funds for nine random experimental trials to test the effectiveness of the campaign. The main question was, “Were there larger increases in consumption of vegetables and fruit in the states that more fully implemented *5-A-Day* Program activities?” (NCI, 2006, p. 1). Evaluations of the *5-A-Day* program revealed small increases in fruit and vegetable consumption (Hornik & Kelley, 2007). And, evaluators argued the increase could be explained by secular trends or demographic changes in the population over the same period.

5-4-3-2-1 Go!

A program that focused primarily on children's health, the *5-4-3-2-1 Go!* campaign reminded youth to be healthier by giving them a simple method of remembering 5, 4, 3, 2, 1 (Evans, 2008). “The campaign is based on healthful eating and active living messages for children: Consume 5 or more fruits and vegetables, 4 servings of water, and 3 servings of low-fat
dairy a day; spend no more than 2 hours watching television or in similar sedentary behavior, and engage in at least 1 hour of physical activity per day” (Evans, 2007, p. S-55). Dissemination methods included an interactive website, using local celebrities to promote the campaign, television commercials and “staged events” reported on by local newspapers (Evans, 2008). Sponsored by the Consortium to Lower Obesity in Chicago Children, the main goal was to reduce childhood obesity, by giving children a way of remembering to reduce their consumption of screen time and to increase exercise (Evans, 2008). In order to evaluate the effectiveness of the campaign, developers identified the following four objectives:

- Assess parent and community audience exposure, awareness, and cognitive and affective reactions to 5-4-3-2-1 Go! messages
- Identify direct effects of 5-4-3-2-1 Go! messages on family outcomes, including parental food choice, parent and child use of community resources, and parent and child screen time
- Identify the moderating effects of social capital, community food access and availability, availability of community resources, and individual readiness to change on the path from 5-4-3-2-1 Go! messages to family outcomes
- Determine the effect of social cognitive mediators on the relationship between 5-4-3-2-1 Go! messages and intended outcomes. (Evans, 2008, p. S57)

Developers targeted children as well as low-income parents of the Chicago area when creating the campaign as prior studies indicated that strategies that include parents and/or family members were most successful (Evans, Christoffel, Necheles & Becker, 2009). The campaign is considered a “multi-channel, mixed community- and media-based campaign” (Evans, 2008, p. 14)
The campaign used media by staging events and inviting members of the media and also developed an interactive website (Evans, 2008). Like VERB and the 5-A-Day For Better Health campaigns, the 5-4-3-2-1 Go! program also employed social marketing (Evans, 2007).

Evaluators, similar to the methods used in the VERB campaign, gathered information using a targeted sampling technique that included interviewing parent and child dyads. Analysis included “effects of message exposure and reactions on knowledge, attitudes, and beliefs; mediation and moderation effects; individual and family behavior change; and community-level change associated with the initiative” (Evans, 2007, p. S-57). Results of the evaluation have yet to be published.

1% or Less

A campaign focusing on nutrition was the 1% or Less program (Evans, 2008). The objective of the campaign was to encourage participants to drink milk with a fat content of 1 percent or less, instead of milk with a higher fat content (Wootan, et al., 2005). The campaign, which began in 1995, was developed by The Center for Science in the Public Interest and employed three basic components: paid advertising, media relations and community-based educational programs (Evans, Christoffel, Necheles & Becker, 2009). The campaign also utilized news stories, paid advertisements on television, and promoted the campaign through radio and billboards (Prevention Institute for the Center for Health Improvement, 2002).

Evaluators of the campaign conducted a survey in West Virginia in which four communities were interviewed via telephone and where milk sales in local supermarkets were used to measure changes in purchasing behavior (Evans, et al., 2009). The goal of the evaluation was to compare the effectiveness of the different components utilized in the campaign in a quasi-experimental design (Evans, et al., 2009). According to the evaluation, Wheeling, West Virginia,
which received paid advertising and media relations (events that are designed and implemented by campaign developers to generate media interest), showed the greatest increase in the number of people who switched from high fat to low-fat milk (34%) at a cost effectiveness of $.57 a person (Evans, et al., 2009, p. 37). Beckley, West Virginia, a community that received paid advertising only, showed a significantly lower percentage rate (13 percent) of those who switched from high fat to low-fat milk, at almost triple the cost per person of the campaign, $1.57 (Wootan, et al., 2005). According to the authors of the study, “Using data from the previously completed studies, we analyzed the cost of each campaign. We then calculated the cost per person exposed to the campaign and cost per person who switched from high- to low-fat milk” (Wootan, et al., 2005, p. 1).

Although programs such as VERB, 5-A Day for Better Health, 5-4-3-2-1 Go! and the 1% or Less campaigns are often analyzed for effectiveness, the extent to which the campaigns are theoretically grounded varies considerably (Lincoln & Nutbeam, 2006).

The Use of Theory in Campaign Development

“Campaigns often use theory in their message development and execution. Theories derived from health psychology and mass communications contribute to the formative development of optimal persuasive messages and resources” (Bauman, et al., 2006, p. 316). Behavior change theories, such as social cognitive theory (Bandura, 1988) and the transtheoretical model (Prochaska, Redding & Evers, 2002), when used to develop health campaigns, may have a positive effect on their outcomes (Du Pre, 2010). Neither the 5-4-3-2-1 Go! or the 1% or Less programs report being theoretically grounded. The theories used to develop the VERB campaign and the 5-A-Day for Better Health program are discussed in the following section.
Social Cognitive Theory

Social cognitive theory (SCT) is a behavior change theory often used in health promotion campaigns (Fitzgibbon, et al., 2007). Developed by Albert Bandura and others and published in 1962, SCT has been used in numerous health behavior programs (Baranowski, Perry & Parcel 2002). It is often used because it addresses both the determinants of an individual's health behavior choices and the methods for promoting change (Nutbeam, 2006). Its basic tenet is that behavior change is enacted in a dynamic and reciprocal manner within social, cultural and normative environments (Lytle & Perry, 2001).

Bandura explained the theory “It is useful to program development because, in addition to describing the important influences on behavior change, it describes the process through which these influences can be modified (Bandura, 1988, p. 391). “Social cognitive theory suggests that health promoters must do more than make people aware of health risks. They must make healthy behaviors practical and socially acceptable.” (Du Pre, 2010, p. 364) Developers of The VERB campaign employed this theory along with the theory of planned behavior (Ajzen), and the information processing theory (Miller) when deciding how to best disseminate their messages “for the short-term and long range outcomes that could result from the exposure of tweens, parents and other adult influencers to the VERB campaign” (Berkowitz, et al., 2008 p. S222).

Transtheoretical Model

The transtheoretical model is comparable to social cognitive theory because it also identifies determinants of change (Randolph & Viswanath, 2004). Developed by James Prochaska and colleagues (2002), the transtheoretical model outlines five stages of change:

1) Precontemplation - not being aware of the problem
2) Contemplation - thinking about the problem

3) Preparation - deciding to take action

4) Action - making a change

5) Maintenance - sticking to the change for six months or more

The basic tenet of the theory is that change takes place over time (Prochaska, Redding & Evers, 2002). “From the perspective of the transtheoretical model, people choose options by weighing the relative pros and cons among a complex array of considerations” (Du Pre, 2010 p. 365). This theory is used in campaigns because it argues that change takes place gradually, and behavior change is a process. People do not move directly out of an unhealthy behavior to a healthy one, rather they go through the five-stage process outlined by the theory (Frankish, Lovato & Shannon, 1999).

Development of the 5-A-Day Campaign was “Guided by the transtheoretical model of change and consumer-based research” (Loughrey, et al., 1997 p. 173). The project targeted people who were only eating two or three servings of fruits and vegetables a day, but who wanted to increase the amount they consumed. “The [trans]theoretical model suggested targeting increasing awareness and motivation, building skills, providing social support for behavior change, and establishing environmental and policy supports. These theoretical constructs were incorporated into the guidelines for licensed 5-A-Day Program participants, and some were used in the community-based research grants” (NCI, 2006, p. 17). The theoretical models suggested that targeting individuals at the contemplation stage of behavior change would offer the best chance of reaching the program’s objective with limited resources (Loughrey, et al., 1997 p. 173).
These theories, along with others, have guided the development of mass media campaigns. Once developed and implemented, however, campaigns must be evaluated in order to determine their effectiveness.

_Evaluation of Physical Activity & Nutrition Based Health Campaigns_

The use of mass media in campaigns promoting both physical activity and nutrition to address childhood obesity is a relatively new approach (Shilton, Bauman, Bull & Sarmiento, 2007). Thus, there is a need to monitor and evaluate programs to determine if they are being implemented to yield the greatest impact (IOM, 2004). Researchers argue that a variety of techniques and tools be utilized when evaluating campaigns. For example, Prochaska et al., (2002) argue for the use of interviews and surveys. Randomized experimental design has been labeled as the “gold standard for evaluations” and offers a promising approach for evaluating health campaigns (Evans, 2008, p. 189). Additionally, randomized control trials (RCT) have been used for many years in evaluating public health campaigns (Fitzgibbon et al., 2007).

However, there is concern RCTs may not be useful in evaluating nutrition based health campaigns as “It is difficult to fully capture the complex multi-factorial nature of health communication with RCT’s due to limitations on the numbers of relevant variables represented in these experimental designs” (Kreps & Maibach, 2008, p. 738).

Interviews were used in the _VERB_ campaign and the _5-A-Day for Better Health_ program to determine to what extent the program enhanced awareness of both parents and tweens and to assess the impact of the campaign on tweens and children’s physical activity and nutritional habits (Berkowitz, et al., 2008; Loughrey, et al., 1997). The _1% or Less_ campaign utilized telephone surveys to track goals and objectives (Wootan, et al., 2005).

Campaign evaluations are conducted to determine if goals and objectives of a program are met
The information published concerning evaluation of programs is inconsistent. Even though the 1996 Surgeon General's report raised significant interest in the field of physical activity promotion, the evidence of effectiveness in campaigns remains poor or insignificant (Shilton, Bauman, Bull & Sarmiento, 2007). Campaigns that promote physical activity in youth can be difficult to evaluate: “While preliminary results are positive, it is too early to tell whether media can effectively increase physical activity” (IOM, 2004, p. 2). Evaluations of physical activity campaigns have not concentrated on the long-term effects of campaigns. Therefore, little is understood about what kinds of programs will be sustainable or have the greatest benefits and effects (Bauman, et al., 2006).

Despite efforts to reduce the number of overweight and obese children, levels are still substantially higher than the five percent goal set by Healthy People 2010 (USDHHS, 2007). Although hundreds of millions of dollars have been spent on health campaigns in the last few years, childhood obesity remains a problem (Abbatangelo-Gray et al., 2004). Because prevalence rates of childhood obesity are so high and because the risks associated with it are potentially life threatening, it becomes essential that we communicate effectively (USDHHS, 2007; CDC 2009; Mayo Clinic, 2009). “Communicating relevant, accurate, and timely health information to at-risk populations is a critical factor for promoting public health, making the study of communication a primary area of interest for public health scholars” (Kreps & Maibach, 2008, p. 734).

“Recommended Best Practices” for Health Campaigns

The public health literature reports numerous strategies regarding “best practices” for health media campaigns. The following discussion pulls together five recommendations from two sources: the World Health Organization (WHO, 2009) and the Centers for Disease Control and Prevention (CDC, 2007). It also includes the results of three published meta-analyses of research
(De Mattia & Denney, 2008; Evans, 2008; Snyder, 2007), one publication from a summary of a workshop conducted to determine effective strategies for mediated health campaigns (Fitzgibbon et al., 2007) and one article that uses the Elaboration Likelihood Model to evaluate mediated health campaigns (Wilson, 2007). Two promising strategies are also identified for health campaigns, which are identified from five sources, the World Health Organization (2009) a report published The California Endowment & the Public Health Institute (Acosta, 2003), a book entitled, *Promoting Health in Multicultural Populations* (Huff & Kline, 1999) and two meta-analyses (Evans, 2008; Snyder, 2007). While (1) this is the first time this list of recommendations has been compiled and (2) the efficacy of the combined “best practices” has not yet been empirically validated, each individual recommendation has been found to be effective in either increasing awareness about or changing behavior regarding childhood obesity.

**Recommendation #1 – Employ one single message with frequent exposure**

Based on analysis of the effectiveness of twenty-four public health campaigns, the WHO concluded that campaigns should “employ one single message” (WHO, 2009, p. 13). “Characteristics of mass media campaigns for physical activity that have been successful in changing awareness and behavior include the use of a simple message with frequent exposure” (WHO, 2009, p. 14).

**Recommendation #2 – Ground campaigns in theory**

From a workshop conducted in 2005 Sponsored by the National Cancer Institute, “Diet and Communication: What Can Communication Science Tell Us About Promoting Optimal Dietary Behavior?” Fitzgibbon et al., (2007), published a selection of papers which synthesized the themes that emerged during the conference. One recommendation from this conference was that campaigns be grounded in theory as doing so can help appropriately develop or frame a message.
Wilson (2007) used the Elaboration Likelihood Model to explore how health campaigns can best impact health behavior change. She furthers Fitzgibbon’s argument as she posits that campaigns employing a theory can prevent costly communication failures. Results from a meta-analysis of nine mediated health campaigns conducted by Snyder (2007) identified theoretical grounding as critical to successful campaigns and argued that campaigns grounded in theory, maximize the potential a message has of being heard by the intended audience, and positively impact the effectiveness of a campaign.

Recommendation #3 – Know the target audience and tailor messages appropriately

Evans (2008) in his meta-analysis of sixteen children’s health campaigns argued that developers must know the audience and target messages appropriately. Appropriate tailoring of messages enhances the credibility of the campaign and should be communicated in forms “appropriate to local culture, age and gender” (WHO, 2009, p. 13). Wilson (2007) also recommends knowing as much as possible about the target audience as doing so will help prevent costly communication failures.

Recommendation #4 – Use multiple channels to disseminate information

Evans (2008) further found that to reach diverse segments of desired audiences, it is critical that multiple methods of information dissemination be used. In short, media messages should be “communicated through many channels” (WHO, 2009, p. 13) and the more strategies used in deploying a message the greater the likelihood that campaign messages will reach desired audiences (Evans, 2008). Snyder (2007) also suggests using a variety of channels to disseminate information because doing so will increase the likelihood of a message being remembered.

Recommendation #5 – Target children and parents

DeMattia & Denny (2008) in their article in the Annals of the American Academy of
Political and Social Science reported on analysis of successful childhood obesity prevention programs. The authors reviewed community based programs to determine if they were slowing the rates of childhood obesity. They concluded that the most successful programs target parents as well as children because parents are often a main source of influence on their children (DeMattia & Denny, 2008). Evans (2008) also argues, “Parents are a powerful social influence” (p. 35).

The five strategies previously mentioned are used to determine “recommended best practices” for this study. Based on previous research (CDC, 2007; DeMattia & Denny, 2008; Evans 2008; Fitzgibbon et al., 2007; Snyder, 2007 WHO, 2009; Wilson, 2007), campaigns that employ these strategies may be more successful than campaigns that do not.

Promising strategies for Health Campaigns

Prior research on best practices also indicates two strategies that are critical to health promotion. The first is the integration of media campaigns as a component of broader health campaign strategies. The second is the ability to support and influence public policy decisions.

Strategy #1 – Make media campaigns a component of broader health promotion initiatives

The WHO (2009) found that the most effective interventions couple mass media campaigns with community based initiatives. Additionally, Snyder (2007) argues, “Establishing ties with community organizations may help institutionalize a program within a community” (p. S35), thereby enhancing the likelihood that a program will be sustainable (Huff and Kline, 1999).

Strategy #2 – Impact public policy

The WHO (2009) states that campaigns which “are most likely to be successful are accompanied by appropriate upstream policy support,” (p. 14). Evans also recommends campaigns address public policy as a strategic decision (2008). The California Endowment and
the Public Health Institute in their report, *Improving Public Health through Public Advocacy* posit, “The involvement of both public health departments and community groups in shaping public policy is not only possible but also critical” (Acosta, 2003, p. 2).

**Study Rationale**

Childhood obesity rates have been on the rise since 1980 and they continue to be a major public health problem (DeMattia & Denney, 2008). There are documented disparities between 1) co-cultural populations and the majority population and 2) female and male children (CDC, 2005; CDC 2008; BIE/YRBS, 2005). In an effort to reduce these rates, many organizations have implemented mass media campaigns through healthy nutrition and physical activity (Evans, et al. 2008). This study aims to address the following question:

RQ1: Do strategies used in general childhood obesity prevention campaigns differ when the campaigns target audiences on the basis of biological sex, race or ethnicity?

Campaigns whose target audience includes co-cultural populations are designed with the intention of lowering childhood obesity rates in specific populations (Berkowitz et al., 2008). Therefore, this study will address the following question:

RQ2: What strategies are used by media campaigns that target a specific biological sex, race or ethnic group to promote nutrition or physical activity to children?

Childhood obesity campaigns employ many different strategies to disseminate desired messages to improve nutrition and increase physical activity (USDHHS, 2000). Prior research has indicated five best practices and two promising strategies; consequently the following research question is advanced:

RQ 3: Which media campaigns promoting nutrition and physical activity messages to help reduce childhood obesity exemplify “best practices” and promising strategies for future
efforts to reduce biological sex, race and ethnic disparities?

In order to address the above questions, this study uses the constant comparative method (Glaser & Straus, 1967) to analyze program evaluation and meta-analysis articles published in academic journals between 1990 and 2009 that deal with childhood obesity prevention campaigns in the United States. Special attention is given to mass media campaigns that target racial and ethnic populations and report effectiveness with female and male participants.
CHAPTER 2

METHODOLOGY

In order to identify articles for the study, a comprehensive search for academic articles evaluating media-based, childhood obesity prevention campaigns was conducted. Targeted interventions include those campaigns using mass media that aim to motivate children to be more physically active and/or promote healthy eating habits. Media campaigns that promote healthy habits generally use television commercials, public service announcements, billboards, magazine ads, radio, and print advertisements (USDHHS, 2000). Therefore, this search targeted articles that reported on the effectiveness of programs or interventions using mass media to promote healthy eating habits and/or physical activity to children. Articles were restricted to those published from 1990 to 2009 and that reported on campaigns in the United States.

Article selection

A four-step research strategy was utilized to identify articles that evaluated childhood obesity mass media campaigns for inclusion in analysis. The search process involved identifying articles in two areas: 1) general mass media campaigns targeted to childhood obesity prevention and 2) mass media campaigns that targeted racial/ethnic populations and/or females or males.

Step #1: Academic literature reviews and database searches – general mass media obesity prevention campaigns

Three search approaches were used to identify general mass media obesity prevention campaign evaluation articles. Search terms for these strategies included: “childhood obesity,” “physical activity,” “nutrition” and “diet” in conjunction with “campaign”, “media campaign”
and “intervention.” The search was conducted in an iterative fashion until a saturation point was reached where no new articles were identified.

The first approach in the article identification process involved analyzing reference lists from two major literature reviews of media campaigns and childhood obesity; *Evaluation of Mass Media Campaigns for Physical Activity* by Bauman et al. (2006) and *Childhood Obesity Prevention: Successful Community Based Efforts* by DeMattia and Denney (2008).

The second approach in article identification involved assessing the Shaping America's Youth database, developed and directed by Academic Network, LLC (a health communications company in Portland, Oregon). The database is a comprehensive collection of programs on nutrition or physical activity based interventions. The database was accessed and reviewed for childhood obesity media programs meeting search criteria (Shaping America's Youth, 2009).

The third and final approach strategy used the Wichita State University Library electronic database and the Cambridge Scientific Abstracts, EBSCOhost Web and Gale Cengage Learning search engines to identify research articles in communication, psychology, sociology and medical journals (nursing, medicine, public health, nutrition, physical activity) on the effectiveness of childhood obesity prevention campaigns.

*Step #2: Academic literature reviews and database searches –mass media obesity prevention campaigns targeted by race/ethnicity and/or biological sex*

Reference lists of several literature reviews of childhood obesity campaigns emphasizing gender and targeting specific racial or ethnical populations were identified during the preliminary search on childhood obesity campaigns. To determine populations and terminology to use when
searching for articles, the CDC’s (2008) article “Addressing Disparities: CDC's Division of Adolescent & School Health” was utilized. Articles were selected from the reviews and from databases on the basis of title or abstract content.

According to the CDC’s (2009) article on addressing disparities, American Indians, African Americans, and Hispanics have the highest rates of childhood obesity. Thus a comprehensive search of communication, psychology, sociology and medical journals (nursing, medicine, public health, nutrition, physical activity) was conducted using the Wichita State University Library electronic database and the Cambridge Scientific Abstracts, EBSCOhost Web and Gale Cengage Learning search engines, for articles that contained information about campaigns specifically targeted toward ethnic or racial populations or females or males.

As in the prior phase of article identification, the following search strategy was used. Search terms included: “childhood obesity,” “physical activity,” “nutrition” and “diet” in conjunction with “campaign” “media campaign” and “intervention.” These terms were then crosschecked using, “African American,” “Hispanic,” and “American Indian,” “Female” and “Male.” This phase of article identification mirrored the prior phase in that the search continued in an iterative fashion until a saturation point was reached and no new articles were identified.

The next steps involved categorizing the articles found in steps one and two in terms of reported campaign effectiveness and general characteristics of the campaigns.

*Step #3: Evaluation of the effectiveness of childhood obesity campaigns*

Articles were selected based on titles and abstract content that made explicit, statistical comparisons concerning effectiveness with consideration of race, ethnicity, and females and
Step #4: Evaluation of the overall effectiveness of the campaign

The fourth step in the strategy involved identification of articles presenting information about media and message strategies, theoretical frameworks, intervention components and evidence of overall campaign effectiveness.
- Reviewed abstracts of articles referenced in major reviews of media campaigns and childhood obesity
- Reviewed abstracts of articles referenced in literature reviews of childhood obesity interventions among females and males and specific racial/ethnic populations
- Searched communication, psychology, sociology, and medical journals for childhood obesity prevention media campaigns
- Identified articles published from 1990 to 2009 and those presenting data on the effectiveness of a media campaign in the United States
- Searched Internet database of childhood obesity campaigns
- Reviewed abstracts of articles obtained from these five search strategies

- Identified articles that report on a media campaign targeting children and childhood obesity  
  n = 65

- Identified articles that report on a media campaign targeting female and male children, and racial/ethnical populations  
  n = 51

- Identified and reviewed articles that made explicit, statistical comparisons concerning the campaign’s effectiveness  
  n = 13

- Identified and reviewed articles that made explicit, statistical comparisons concerning the campaign’s effectiveness by female and male children and by race and ethnicity  
  n = 10

- Compiled information about media and message strategies, theoretical frameworks, intervention components, evidence of overall campaign effectiveness, and evidence for differences in effectiveness by female and male children and by racial/ethnical populations  
  n = 23
Data analysis

Using constant comparative analysis, articles were coded utilizing a grounded theory analysis (Glaser and Strauss, 1967). The research design and search strategy were modeled after Niederdeppe, J. et al. (2008) in that it seeks to determine methods and strategies of health related media campaigns as reported in journal articles. It does not however, attempt to determine the effectiveness of those campaigns. The study discusses the following research questions:

RQ 1: Do strategies used in general childhood obesity prevention campaigns differ when the campaigns target audiences on the basis of biological sex, race or ethnicity?

RQ 2: What strategies are used by media campaigns that target a specific biological sex, race or ethnic group to promote nutrition or physical activity to children?

RQ 3: Which media campaigns that promote nutrition and physical activity messages to help reduce childhood obesity exemplify “best practices” and promising strategies for future efforts to reduce biological sex, race and ethnic disparities?

To address research questions 1 and 2 a six-step strategy was utilized:

Step #1: Identifying general campaigns

Articles reporting on the effectiveness of childhood obesity campaigns were read for analysis and put in a folder on the computer desktop labeled Childhood Obesity Campaign Articles.

Step #2: Identifying targeted campaigns

Articles reporting on the effectiveness of targeted childhood obesity campaigns were read for analysis and put in a folder on the computer desktop labeled Targeted Childhood Obesity Campaign Articles.

Step #3 Determining categories for coding

The articles were then printed out, read again and highlighted to find common information. It
was determined that articles contained information about the campaign and about the evaluation of the campaign. It was also determined that many of the articles reported on many of the same elements. Those elements were made into categories to be coded. Coding categories include:

1. Campaign focus
2. Theories
3. Communication strategies
4. Targeted age
5. Evaluation outcomes

**Step #4 Producing Excel spreadsheets**

An Excel spreadsheet was created for articles reporting on general campaigns and a separate Excel spreadsheet was created for articles reporting on childhood obesity campaigns targeting a specific population.

**Step #5 Coding**

Articles were read, and information was put into corresponding columns and rows in Excel spreadsheets. Analysis continued in a sequential iterative manner until all relevant data was included.

**Step #6 Tallying and recording**

After the data were entered into the spreadsheets, the results were tallied and recorded in a “totals” column. The totals from articles that reported on general childhood obesity campaigns were then compared to totals for articles that reported on childhood obesity campaigns targeting a specific audience.

To address research question #3, a five-step strategy was utilized:

**Step #1 Identifying “best practices”**
Based on prior research of meta-analyses articles and campaign evaluations, five “best practices” and two promising strategies of campaigns were established.

Recommended “Best practices”

- Employ one single message (WHO, 2009)
- Ground campaigns in theory (Fitzgibbon, 2007; Snyder, 2007 & Wilson 2007)
- Know target audience and tailor messages appropriately (Evans, 2008; WHO, 2009 & Wilson, 2007)
- Use multiple channels to disseminate information (Evans, 2008; Snyder, 2007 & WHO, 2009)
- Target children and parents (De Mattia & Denney, 2008 & Evans, 2009)

*Step #2 Identifying promising strategies*

- Make media campaigns a component of broader health promotion initiatives (Snyder, 2007 & WHO, 2009)
- Impact public policy (Evans, 2008 & WHO, 2009)

*Step #3 Counting and scoring best practices”* 

Results from both spreadsheets were compared to determine which campaign(s) utilized the most “best practices.”

*Step #4 Counting and scoring promising strategies* 

Results from both spreadsheets were compared to determine which campaign(s) utilized the most promising strategies.

*Step #5 Identifying most promising campaign(s)*

The campaign(s), which utilized the most “recommended best practices” and promising strategies, was determined.
CHAPTER 3

RESULTS

This study was conducted for two purposes: 1) to determine if strategies used in childhood obesity prevention media campaigns differ when the target audience varies by biological sex, race or ethnicity, and if so, which strategies are used, and 2) to determine which media campaigns exemplify the recommended “best practices” and promising strategies. Employing Glaser and Strauss’ (1967) constant comparative analysis, this study identifies and reports on categories prevalent throughout campaign literature.

This analysis is modeled after a study by Niederdeppe, et al. (2008) that reported on articles analyzing anti-smoking campaigns. In that study, the authors compared articles reporting on the effectiveness of campaigns directed to low social economic status (SES) populations and to articles on the effectiveness of campaigns directed to the general population. This study compares articles reporting on the effectiveness of childhood obesity media campaigns for general and targeted audiences, but does not report on the effectiveness of the analyzed campaigns. Articles for this study, like those used in Niederdeppe et al.’s study, came from academic journals in the medical, psychological and communication disciplines. Twenty-three articles on the effectiveness of childhood obesity media campaigns were identified. For a list of articles analyzed, see Appendix B.

Thirteen articles were targeted to the general population and ten targeted a specific biological sex, race or ethnic population. The thirteen articles that discuss general childhood obesity campaigns describe nine different campaigns. Four articles reported on the VERB campaign and two articles on the 1% or Less campaign. Ten articles, that discussed childhood obesity campaigns targeted to a specific population, analyzed ten different campaigns. VERB and
1% or Less also had components of their campaigns that targeted a specific audience and were therefore also included for analysis in the targeted campaign articles. The following populations were targeted by the campaigns:

- African Americans
- Asians
- American Indians
- Females
- Hispanics/Latinos

In order to address research questions advanced in this study both articles from general and targeted childhood obesity campaigns were coded and compared. Articles analyzed with respect to RQ1: “Do strategies used in general childhood obesity prevention campaigns differ when the campaigns target audiences on the basis of biological sex, race or ethnicity?” were examined to determine 1) issues focused on; 2) theories used in campaign development; 3) communication strategies employed; and 4) ages of targeted children.

It was determined that strategies used in general childhood obesity prevention campaigns differ from strategies used in targeted campaigns Targeted campaigns:

- Focus on different areas
- Are less likely to be grounded in theory
- Employ different strategies to disseminate information
- Target different age groups of children

Since targeted campaigns differ in their strategies, articles from both the targeted campaigns and the general campaigns were then coded to answer RQ 2: “What strategies are used by media campaigns that target a specific biological sex, race or ethnic group to promote
nutrition or physical activity to children?" In order to answer this question, the thirteen articles targeting a general audience were compared to the ten articles targeting a specific audience. The articles were coded to determine if campaigns:

- Focused on nutrition, physical activity or both nutrition and physical activity
- Utilized theory in the development of the campaign
- Employed different strategies to disseminate information
- Targeted children of a certain age & if parents were targeted as well
- Measured components and if so, what those components were

Results indicated that when general childhood obesity campaign articles were analyzed, they were more likely to report a focus on nutrition. Out of the thirteen articles analyzed, almost half, six (46%), reported on nutrition based aspects of campaigns, two (15%) reported physical activity based components of campaigns and two (15%) analyzed reported campaign components that emphasized both nutrition and physical activity (Table 1). Results indicated that when campaigns targeted a specific biological sex, race or ethnic group they were most likely to focus on both nutrition and physical activity. Out of the ten articles which reported on the evaluation of targeted campaigns, two reported on campaigns (20%) that were nutrition focused, one campaign (10%) focused on physical activity and seven (70%) were focused on both nutrition and physical activity (Table 2).
Table 1 General Campaigns

<table>
<thead>
<tr>
<th>Campaign</th>
<th>Nutrition</th>
<th>Physical Activity</th>
<th>Both</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Changing The Tide</em></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><em>VERB (1 year results)</em></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><em>VERB (“high dose” communities)</em></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><em>VERB (Paid Radio advertisements)</em></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><em>VERB (Campaign overview)</em></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><em>5 A Day for Better Health</em></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Boston Middle School corner store initiative</em></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Color My Pyramid</em></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Junk Food Fighters</em></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>1% or Less (Cost effective analysis)</em></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>1% or Less (Campaign overview)</em></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Yuma On The Move</em></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><em>Get Up and Do Something</em></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTALS:</strong></td>
<td>6</td>
<td>2</td>
<td>5</td>
</tr>
</tbody>
</table>

Table 2 Targeted Campaigns

<table>
<thead>
<tr>
<th>Campaign</th>
<th>Nutrition</th>
<th>Physical Activity</th>
<th>Both</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Health Kids</em></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><em>Hip Hop to Health</em></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><em>1% or Less</em></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Scouting Nutrition &amp; Activity Program (SNAP)</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>CANFit</em></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>VERB</em></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><em>Food Fun and Fitness</em></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><em>Pathways</em></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><em>Addressing Health Disparities</em></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><em>Healthy Hearts for Kids</em></td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><strong>TOTALS:</strong></td>
<td>2</td>
<td>1</td>
<td>7</td>
</tr>
</tbody>
</table>

When articles discussing general campaigns were analyzed, seven of the thirteen campaigns, or just a little more than half (54%), reported on campaigns that utilized theories. Most of them reported using social cognitive theory (four out of thirteen campaigns or 31%) in their development. However, three of the campaigns, almost one quarter (23%) also utilized the transtheoretical model (Prochaska, 1977). Other theories coded for and used in developing campaigns were:

- McGuire’s hierarchy of effects, (McGuire, 1984), which was reported in an article of an overview of the *VERB* campaign
• The self-care deficit nursing theory (Orem, 2001), which was reported as being utilized in the *Color My Pyramid* campaign

• The theory of planned behavior (Ajzen, 1991), which was reported as being utilized in an article discussing the first year of the *VERB* campaign and in the article that also discussed the overview of the *VERB* campaign

Although four different campaign articles focused on the evaluation of the *VERB* campaign, not all articles reported the same theory or theories used in the development of that campaign. When the *VERB* and the *1% or Less* campaigns were targeted to a specific audience, the articles did not report that they had utilized a theory in the development of the campaign for the targeted audiences (Table 3).

When comparing those results to articles, which analyzed targeted campaigns, almost the same result occurred. It was found that only half, five out of ten utilized theory in their development. Social cognitive theory (Bandura, 1986), like the articles analyzed in general campaigns, was used in four different campaigns (40%). One campaign, *Health Kids*, was developed using four different theories; social cognitive theory, theory of triadic influence (Flay & Petraitis, 1994), cultural sensitivity theory (Resnicow et al., 1999) and social marketing theory (Glanz et al., 2002) (Table 4).
Articles were coded to determine what kinds of information dissemination methods were reported. When articles that reported on general campaigns were analyzed, it was discovered that the most common form of information dissemination was television advertising. Ten out of the thirteen (77%) articles reporting on general campaigns used television commercials or Public Service Announcements (PSAs) to disseminate information. Radio advertisements were the next highest category with eight out of thirteen campaigns (62%) using radio as a means of getting a
message across to their desired audience. Three categories: newspapers, the Internet and the
posters were the next most popular methods as five out of thirteen campaigns (38%) employed
those methods. Three campaigns (23%) utilized magazines and billboards. Only two campaigns
(15%) chose to employ brochures and magazines as a means of distribution, and no campaign
produced a newsletter as a method to disseminate a message (Table 5). The range of methods
used varied from one general campaign that used six methods, *Yuma on the Move*, to several
campaigns using only one method, including the *VERB* campaign (when only radio
advertisements were utilized), *Health Kids, Hip Hop to Health, Food Fun and Fitness,*
*Pathways, CANfit, Addressing Health Disparities and Healthy Hearts for Kids* (Tables 5 & 6).

When articles that reported on targeted campaigns were compared to articles that reported
on general campaigns, the methods of dissemination differed. The communication method most
commonly employed by targeted campaigns was the Internet. Of the ten targeted campaigns,
four of them (40%) relied on programs that were based on the participants’ use of websites. The
next most common methods were television advertising, radio advertising, billboards,
newsletters, and brochures. Those methods were employed by 20% of the targeted campaigns.
Television, radio and billboards were employed by the *VERB* and the *1% or Less* campaigns. *The
Hip Hop to Health* campaign and the *SNAP* campaign were the only two campaigns (20%) to
employ newsletters to disseminate their information. The *Health Kids* campaign and the
*Pathways* campaign both utilized posters to disseminate information. Placing advertisements in
newspapers was only used by the *1% or Less campaign* (Table 6).
When childhood obesity campaigns are developed, they are usually targeted to children of a certain age. Articles were coded to determine if the intended audience was most often preschoolers, children in grade school, children in middle school, youth in high school, and if parents were targeted as well. The results showed that nine out of thirteen (69%) articles focused on targeting children in middle school and four out of thirteen (31%) focused on parents as well as children. Two out of thirteen (15%) reported focusing on children in grade school. Two
articles reported on one campaign, *1% or Less*, that targeted children of all ages. No article focused on preschoolers or youth in high school (Table 7).

Like articles analyzed for general campaigns, articles analyzed for targeted campaigns were most likely to focus on children in middle school. For articles that reported on the evaluation of a media campaign that targeted a specific audience, six campaigns (60%) were designed for children in middle school, two (20%) campaigns were aimed at children in grade school, two (20%) reported emphasizing parents as well as children, one (10%) campaign was directed toward children in preschool and one campaign targeted children up to eighteen years of age (Table 8).

<table>
<thead>
<tr>
<th>Table 7 General Campaigns</th>
<th>Ages Targeted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Campaign</td>
<td>P</td>
</tr>
<tr>
<td>Changing The Tide</td>
<td></td>
</tr>
<tr>
<td>VERB (1 year results)</td>
<td>X</td>
</tr>
<tr>
<td>VERB (“high dose” communities)</td>
<td>X</td>
</tr>
<tr>
<td>VERB (Paid Radio advertisements)</td>
<td>X</td>
</tr>
<tr>
<td>VERB (Campaign overview)</td>
<td></td>
</tr>
<tr>
<td>5 A Day for Better Health</td>
<td>X</td>
</tr>
<tr>
<td>Boston Middle School corner store initiative</td>
<td>X</td>
</tr>
<tr>
<td>Color My Pyramid</td>
<td>X</td>
</tr>
<tr>
<td>Junk Food Fighters</td>
<td></td>
</tr>
<tr>
<td>1% or Less (Cost effective analysis)</td>
<td>X</td>
</tr>
<tr>
<td>1% or Less (Campaign overview)</td>
<td>X</td>
</tr>
<tr>
<td>Yuma On The Move</td>
<td></td>
</tr>
<tr>
<td>Get Up and Do Something</td>
<td>X</td>
</tr>
<tr>
<td><strong>TOTALS:</strong></td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 8 Targeted Campaigns</th>
<th>Ages Targeted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Campaign</td>
<td>P</td>
</tr>
<tr>
<td>Health Kids</td>
<td></td>
</tr>
<tr>
<td>Hip Hop to Health</td>
<td>X</td>
</tr>
<tr>
<td>1% or Less</td>
<td></td>
</tr>
<tr>
<td>Scouting Nutrition &amp; Activity Program (SNAP)</td>
<td>X</td>
</tr>
<tr>
<td>CANFit</td>
<td></td>
</tr>
<tr>
<td>VERB</td>
<td></td>
</tr>
<tr>
<td>Food Fun and Fitness</td>
<td></td>
</tr>
<tr>
<td>Pathways</td>
<td></td>
</tr>
<tr>
<td>Addressing Health Disparities</td>
<td></td>
</tr>
<tr>
<td>Healthy Hearts for Kids</td>
<td></td>
</tr>
<tr>
<td><strong>TOTALS:</strong></td>
<td>1</td>
</tr>
</tbody>
</table>

P is preschool, G is grade school, M is middle school, H is high school, A is all ages, E is parents
Campaign evaluation focused on a variety of different approaches. For example, one evaluation component of the *VERB* campaign measured how aware participants in the study were of the campaign. Campaigns, like *1% or Less*, were evaluated on cost effectiveness. When articles reporting on the evaluation of general population campaigns were coded, it was revealed that those campaigns were more likely to report on awareness than campaigns that targeted a specific population. Six out of thirteen campaigns (46%) reported on awareness. The next closest category was behavior, with five out of thirteen (38%) campaigns reporting on it. It is interesting to note that none of the general campaigns reported on nutritional or physical activity behaviors. Targeted campaigns were more often found to evaluate actual participant behavior:

- Five out of ten (50%) measured behavior
- Three out of ten (30%) measured attitude, knowledge & nutritional habits
- Two out of ten (20%) measured physical activity habits
- One out of ten (10%) measured awareness, cost effectiveness & campaign effectiveness

### Table 9 General Campaigns

<table>
<thead>
<tr>
<th>Campaign</th>
<th>AT</th>
<th>AR</th>
<th>BE</th>
<th>CE</th>
<th>EI</th>
<th>KN</th>
<th>NH</th>
<th>PA</th>
<th>SE</th>
<th>UN</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Changing The Tide</em></td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>VERB (1 year results)</em></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>VERB (&quot;high dose communities&quot;)</em></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>VERB (Paid radio advertisements)</em></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>VERB (Campaign overview)</em></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>5 A Day for Better Health</em></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Boston Middle School corner store initiative</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Color My Pyramid</em></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Junk Food Fighters</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>1% or Less (Cost effective analysis)</em></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>1% or Less (Campaign overview)</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Yuma On The Move</em></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Get Up and Do Something</em></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td>4</td>
<td>6</td>
<td>5</td>
<td>2</td>
<td>1</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>4</td>
</tr>
</tbody>
</table>
When campaigns are evaluated, one way evaluators determine if the goals of the campaign are met is to have participants report what they have learned or the habits they have changed because of the campaign’s influence. To do this, evaluators often rely on the self-report method where participants write down or tell someone what they have learned or of the changes they have made. Because of this, articles were analyzed to determine if campaigns utilized any self-report methods to assess effectiveness. When articles reported on general population campaigns, it was noted that just a little over half, seven out of thirteen (54%) utilized the self-report methods. When articles reported on targeted campaigns, five out of ten (50%) used the method.

Once evaluators have tested and measured campaign goals, they often measure outcomes to determine if the campaign has been effective. At the end of many of the articles, there was a brief statement that included whether or not the campaign was effective. For campaigns that targeted the general population seven out of thirteen (54%) claimed to have been effective in

<table>
<thead>
<tr>
<th>Table 10 Targeted Campaigns</th>
<th>Measured Components</th>
</tr>
</thead>
<tbody>
<tr>
<td>Campaign</td>
<td>AT</td>
</tr>
<tr>
<td>Health Kids</td>
<td></td>
</tr>
<tr>
<td>Hip Hop to Health</td>
<td></td>
</tr>
<tr>
<td>1% or Less</td>
<td>X</td>
</tr>
<tr>
<td>SNAP Scouting Nutrition &amp; Activity Program</td>
<td>X</td>
</tr>
<tr>
<td>CANFit</td>
<td></td>
</tr>
<tr>
<td>VERB</td>
<td>X</td>
</tr>
<tr>
<td>Food Fun &amp; Fitness</td>
<td>X</td>
</tr>
<tr>
<td>Pathways</td>
<td>X</td>
</tr>
<tr>
<td>Addressing Health Disparities</td>
<td>X</td>
</tr>
<tr>
<td>Healthy Hearts for Kids</td>
<td>X</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td>3</td>
</tr>
</tbody>
</table>

AT is attitude, AR is awareness, BE is behavior, CE is cost effectiveness, EI is effectiveness of intervention, KN is knowledge, NH is nutrition habits, PA is physical activity habits, SE is self-efficacy, UN is understanding.
accomplishing the goals and objectives of the campaign. Similarly, when articles reported on effectiveness for targeted campaigns, six out of ten (60%) reported that their campaigns were effective.

Campaigns targeted to a specific population were more likely to:

- Develop campaigns with both a nutrition and physical activity focus
- Utilize the transtheoretical model in their development
- Use the Internet as a method to disseminate information
- Evaluate behavior

Finally to address RQ 3: “Which media campaigns that promote nutrition and physical activity messages exemplify the recommended “best practices” and promising strategies for future efforts to reduce biological sex, race and ethnic disparities?” Results of literature from prior-meta analyses and research studies were reviewed to determine what the recommended “best practices” are. Prior research indicated campaigns that employ the following strategies may be the most effective:

- Focus on one simple message (WHO, 2009)
- Employ theory in their development (Fitzgibbon et al., 1007; Snyder, 2007; Wilson 2007)
- Know the target audience and tailor messages appropriately (Evans, 2008; WHO 2009; Wilson, 2007)
- Use multiple methods to disseminate information (Evans, 2007; Snyder 2007; WHO 2009)
- Include parents as a target audience (DeMattia & Denney, 2008; Evans 2008),

Promising strategies were derived from World Health Organization documents, a report published by The California Endowment & the Public Health Institute (Acosta, 2003),
Promoting Health in Multicultural Populations (Huff & Kline, 1999) and two meta-analyses (Evans, 2008; Snyder, 2007). Results of literature from prior-meta analyses and research studies were reviewed to determine what the promising strategies are recommended. Prior research indicates programs that make media campaigns a component of broader health promotion initiatives (Evans, 2008; Huff & Kline, 1999; WHO, 2009) and campaigns which impact public policy (Acosta, 2003; Evans, 2008; WHO 2009) are promising strategies. See table 11.

<table>
<thead>
<tr>
<th>GENERAL CAMPAIGNS</th>
<th>OM</th>
<th>TB</th>
<th>TM</th>
<th>MC</th>
<th>TP</th>
<th>BC</th>
<th>PP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Changing The Tide</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VERB (1 year results)</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>VERB (“high dose” communities)</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>VERB (Paid Radio advertisements)</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>VERB (Campaign overview)</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>5 A Day for Better Health</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Boston Middle School corner store initiative</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Color My Pyramid</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Junk Food Fighters</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1% or Less (Cost effective analysis)</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>1% or Less (Campaign overview)</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Yuma On The Move</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TARGETED CAMPAIGNS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health Kids</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Hip Hop to Health</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1% or Less</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Scouting Nutrition &amp; Activity Program</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CANFit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>VERB</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Food Fun and Fitness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Pathways</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Addressing Health Disparities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Healthy Hearts for Kids</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

The 1% or Less campaign employed the recommended “best practices” and most promising strategies. It was shown to have employed more of the recommended strategies in its development and implementation of the campaign. This is explored more thoroughly in the discussion chapter. Campaigns that target a specific audience, such as females or males, a
specific race or ethnic group may use some of the same techniques as those targeting a general audience. However, as this study demonstrates, many methods or techniques are used at different frequencies to target specific audiences. Implications for these actions are discussed in the following chapter.
CHAPTER 4

DISCUSSION

This study was conducted in order to address two overarching questions:

1) Do articles that report on childhood obesity media campaigns that are targeted to a general population use different strategies than campaigns targeted to specific audiences based on biological sex, race or ethnicity? And if so, what strategies do they use?

2) Do media campaigns that promote nutrition and/or physical activity exemplify the recommended “best practices” and promising strategies for future efforts to reduce biological sex, race and ethnic disparities?

This study was modeled in part after Niederdeppe, et al.’s (2008) study of anti-smoking campaigns in which they compared academic articles reporting on the characteristics and effectiveness of campaigns directed to low social economic status (SES) populations to campaigns directed to the general population. Using Niederdeppe et al.’s (2008) model, this study content analyzed media campaigns and compared articles which report on the effectiveness of childhood obesity media campaigns for general and targeted audiences. It does not however, report on the effectiveness of the analyzed campaigns. The method for obtaining articles from a library database, literature reviews and an Internet database was obtained from Niederdeppe et al.’s (2008) model. Articles, like those used in the previous study, which reported on anti-smoking campaigns, came from academic journals from the medical, psychological and communication disciplines. This study, like Niederdeppe et al.’s (2008) model, also posited three research questions that seek to determine differences between the campaigns and sought to determine which campaign exemplified the most recommended “best practices” and promising strategies.
Meta-analyses have been conducted to determine best strategies for developing and implementing childhood obesity campaigns (Allen & Preiss 2007; Bauman, Smith, Maibach & Reger-Nesh, 2006). However, no known prior studies have compared strategies and methods of childhood obesity campaigns targeted to a specific audience to childhood obesity campaigns targeted to general audiences.

Utilizing the constant comparative method (Glaser & Strauss, 1967), this study employed an inductive method of analysis in which campaigns targeted to a general audience were compared to campaigns targeted to a specific biological sex, race or ethnic group.

RQ 1: “Do strategies used in general childhood obesity prevention campaigns differ when the campaigns target audiences based on biological sex, race or ethnicity?”

Campaigns that target general populations were analyzed and compared with childhood obesity campaigns that target specific audiences. Results indicated that strategies differ when the target audience varies by biological sex, race or ethnicity. Specifically, campaigns strategies differed in the areas of 1) how the campaigns were focused, 2) the theories employed in developing campaigns, 3) how information was disseminated, 4) the age group of children targeted, and 5) how outcomes were measured. Because strategies utilized by childhood obesity campaigns that target a general audience differ from the strategies utilized by campaigns that target a specific population, those strategies were thoroughly examined to address the second research question.

RQ 2: “What strategies are used by media campaigns that target a specific biological sex, race or ethnic group to promote nutrition or physical activity to children?”

To discuss this question, articles which reported on campaigns that target general audiences were once again analyzed, this time for strategies and then compared to the strategies
used in articles that report on campaigns that target a specific audience. Strategies include: 1) how the campaigns were focused, 2) the theories employed in developing campaigns, 3) how information was disseminated, 4) the age group of children addressed and 5) how outcomes were measured.

Results revealed that campaigns targeting general populations were most likely to focus on nutrition. Of the thirteen articles, which reported on campaigns, six (46%) focused on nutrition. However, these campaigns also delivered messages regarding both nutrition and physical activity five out of thirteen times (38%). When campaigns that target a specific audience were analyzed, they focused on both nutrition and physical activity 70% of the time. Two campaigns or 20%, the 1% or Less and the SNAP campaigns, were nutritionally based. One campaign, Healthy Hearts for Kids, focused exclusively on physical activity. Campaigns that focused on both aspects of childhood obesity were three times more likely to target a specific population.

Based on articles analyzed, campaigns addressing a general audience were slightly more likely to be theory driven than campaigns addressing a specific population, (54% to 50%). Seven out of thirteen articles on general campaigns reported being grounded in theory. Five out of ten targeted campaigns reported being theoretically grounded.

Campaigns designed for a general population were more likely to report the use of multiple methods. Twelve out of the thirteen articles (92%) reported that campaigns employed multiple dissemination techniques. The only article that reported using one method was *VERB* (i.e., used radio PSAs) (Balamurugan, et al., 2005). Campaigns targeted to a general audience used over twice as many methods (mean, 3.15) as targeted campaigns (mean, 1.6) to disseminate information. Only three of the ten campaigns that targeted a specific population used multiple
methods. *Health Kids, 1% or Less* and *VERB* campaigns used multiple methods; *1% or Less* and *VERB* each used four different methods including television, newspaper, radio, billboards and the Internet. The analyzed articles reported that the only other campaign to use multiple methods was *SNAP*, which utilized two techniques, posters and newsletters. Analysis also revealed that targeted campaigns relied more on the Internet than any other method to disseminate information.

It was interesting to note that the articles that reported on campaigns addressing a general population utilized television the most (77%), while only 15% of campaigns addressing a specific audience utilized television. Analysis from this study revealed that the most common method for disseminating information for campaigns targeted to a specific audience was the Internet as 40% of the campaigns relied on the Internet as the method of dissemination.

When disseminating a message, campaigns often target a specific age group of children, and at times parents as well. When articles on general campaigns and campaigns targeting a specific population were coded, it was discovered that both were most likely to focus on children in middle school. Additionally, neither targeted youth in high school. However, when articles were coded to determine if campaigns included parents as a target audience, results differed. Campaigns targeting the general audience were more likely to include parents than campaigns, which target a specific audience. Four out of thirteen (31%), of general population campaigns targeted parents as compared to only two out of ten (20%) of targeted campaigns.

Childhood obesity campaigns, both targeted to a general audience and to a specific population, often evaluate different campaign outcomes to determine effectiveness. Awareness is one outcome measure for campaigns. Results of this study indicated that when campaigns target a general audience they most often measured participant awareness of the information.
disseminated by the campaign. When campaigns were targeted to a specific audience they usually measured behavior change in study participants.

RQ 3: “Which media campaigns that promote nutritional and physical activity messages to help reduce childhood obesity exemplify the recommended “best practices” and promising strategies for future efforts to reduce biological sex, race and ethnic disparities?

Results of prior meta-analyses and research studies reporting on effective media campaign strategies were reviewed to determine what strategies are most effective. Results from this content analysis were compared against the strategies given by meta-analyses and research studies to determine which campaigns exemplified the recommended “best practices” and promising strategies. Table 12 is a summary of those findings.

Table 12 Summary

<table>
<thead>
<tr>
<th>Focus</th>
<th>General Campaigns</th>
<th>Targeted Campaigns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nutrition</td>
<td>6/13 (46%)</td>
<td>2/10 (20%)</td>
</tr>
<tr>
<td>Physical Activity</td>
<td>2/13 (15%)</td>
<td>1/10 (10%)</td>
</tr>
<tr>
<td>Both</td>
<td>5/13 (38%)</td>
<td>7/10 (70%)</td>
</tr>
<tr>
<td>Theory based</td>
<td>7/13 (54%)</td>
<td>5/10 (50%)</td>
</tr>
<tr>
<td>Multiple dissemination</td>
<td>12/13 (92%)</td>
<td>3/10 (30%)</td>
</tr>
<tr>
<td>methods employed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Targeted parents</td>
<td>4/13 (31%)</td>
<td>2/10 (20%)</td>
</tr>
<tr>
<td>Campaign part of Broader</td>
<td>8/13 (61%)</td>
<td>2/10 (20%)</td>
</tr>
<tr>
<td>component</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Campaign sought to change</td>
<td>7/13 (54%)</td>
<td>2/10 (20%)</td>
</tr>
<tr>
<td>Public policy</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

It was determined that the *1% or Less* campaign, employed the most recommended “best practices” and promising strategies to reduce disparities in childhood obesity. In terms of recommended “best practices,” analysis revealed the campaign employed one single message, utilized multiple methods of information dissemination, knew their target audience and tailored their message appropriately, used multiple channels to disseminate information, and targeted
parents as well as children. This campaign also employed both promising strategies, as it was part of a broader health promotion initiative and whose goal was to impact public policy.

In general, in this study, general campaigns were more likely to employ one simple message. Campaigns, which targeted a general audience, employed more recommended “best practices.”

**Disparities and Recommended “Best Practices”**

This analysis reveals that campaigns, which target a specific population based on biological sex, race and ethnicity may not impact existing disparities because they don’t use many of the recommended “best practices” utilized in general campaigns. The World Health Organization (WHO) analyzed twenty-four mass media campaigns that report on effective interventions. Those campaigns that were reported as moderately effective were, “Intensive mass media campaigns using one simple message” (WHO, 2009, p. 13). The WHO also claims, “Consistent, coherent, simple and clear messages . . . should be communicated through many channels and in forms appropriate to local culture, age and gender” (WHO, 2009, p. 13). Because campaigns that employ one simple message may be more effective than campaigns that send multiple messages, the strategies currently used in general campaigns may be more effective than those currently used when targeting a specific population.

Meta-analyses of child-obesity campaigns indicate that when campaigns are grounded in a theory or several theories they are more likely to be successful than campaigns that are not grounded in a theory (Snyder, 2007). Campaigns should be theoretically based, “Employing solid theory and as much knowledge about the target audience as possible can help prevent expensive communication failures” (Wilson, 2007, p. S18). Since campaigns that are theoretically grounded may be more likely to be effective, current strategies used by campaigns
that target a general audience may be more effective than those currently used by campaigns targeting a specific population. In the articles analyzed regarding general campaigns, they are more likely to be theoretically based than campaigns that target a specific audience.

Campaigns that employ more than one strategy to disseminate information are more likely to be successful than campaigns that rely on only one method (Wilson, 2007). In this study, targeted campaigns use one potentially inappropriate method of information dissemination, the Internet. In order to reach their intended target audience, general campaigns utilize multiple methods including the media most likely to reach all segments of the population, TV. General campaigns are also much more likely to employ multiple methods of information dissemination and are more likely to target parents as part of their campaigns than are targeted campaigns. The Internet creates a particular issue when used as the site of information dissemination. The methods employed to reach a targeted audience may determine their ability to not only comprehend the message, but also their ability to receive the message (Fitzgibbon, et al., 2007). Campaigns that rely on the use of the Internet risk missing the audience who may most need the information (Fitzgibbon, et al., 2007). Often people with the greatest health burdens have the least access to information (USDHHS, 2000, p. 11-9). “One major outcome of public communication campaigns is the potential 'knowledge gap' between the information haves and have-nots. In other words, those who are from a relatively higher socioeconomic status are more apt to be able to take advantage of information compared to those who are relatively disadvantaged” (Fitzgibbon et al., 2007, p. S68).

A survey conducted in 2009 by the National Telecommunications and Information Administration and by the United States Census Bureau, revealed that African American and Hispanic people in rural areas are less likely to use the Internet than their counterparts in urban
areas (U.S. Department of Commerce, 2010). The same study also found, “Persons with high incomes, those who are younger, Asians and Whites, the more highly-educated, married couples and the employed tend to have higher rates of broadband use at home. Conversely, persons with low incomes, seniors, minorities, the less-educated, non-family households and the non-employed tend to lag behind in home broadband use” (U.S. Department of Commerce, 2010 p. 3).

Campaigns, which target a specific audience such as African Americans or Hispanics, often aim to reach people from a lower social economic group, those of the “have-nots” category (Bethell et al., 2010). According to the U.S. Census Bureau (2005), since 1999, 98.2% of households in the United States have a television. In contrast, the U.S. Census Bureau also reported that in 2007, only 62% of U.S. households owned computers that were connected to the Internet. As a large number of targeted campaigns are Internet based, they are not as likely to be hitting their target audience or at least those most at risk for obesity – as obesity is linked to lower social economic status (Bethell, et al, 2010).

General campaigns are more likely to incorporate parents as part of their target audience than are campaigns targeted to a specific population. Therefore, general campaigns may be more effective than campaigns that are targeted to a specific population. Because parents have an influence on both how the child thinks and acts about nutrition and physical activity (DeMattia & Denney, 2008), campaigns that target parents as well as their children, may be more effective than campaigns that target children alone.

When articles about campaigns that targeted a general audience were analyzed and compared to articles about campaigns that target a specific audience, it was noted that general campaigns reported measuring awareness more than any other component. Targeted campaigns
were reported as measuring behavior. Since awareness of a campaign does not always facilitate a
change in behavior, (Barlow, 2007) targeted campaigns may have more effective ways to
measure the outcomes of a campaign. General campaigns may want to consider effectiveness
evaluations that go beyond awareness in assessing the impact of their campaigns.

While targeted campaigns were found to more frequently contain one recommended “best
practice” (i.e., better outcome measures), they are less likely than general campaigns to use as
many of the recommended “best practices”. Even though the campaign that used the most
recommended “best practices” and promising strategies was the targeted 1% or Less campaign;
in most cases, targeted campaigns lag behind general campaigns in terms of recommended
strategies. They are more likely to use multiple messages, lack theoretical grounding, use the
Internet as their predominant method of information dissemination, and fail to target parents.

Based on effectiveness criteria advanced by the WHO (2009) and the CDC (2008) and meta-
analyses conducted by Snyder (2007) and Wilson (2007), both targeted and general campaigns
have significant improvements to make in order to utilize all recommended “best practices” and
promising strategies to address and impact the U.S. childhood obesity epidemic.

Limitations

There are several limitations to this study. Data for this study was taken from published
research articles in academic, peer-reviewed journals reporting on elements of childhood obesity
prevention campaigns. While this is the most clearly vetted information available about these
campaigns, discrepancies emerged. Although a number of the articles reported on the same
campaigns, they reported on different aspects of the campaigns and reported different foundation
information. For example, two articles reported that VERB was developed using different
theories. The article, *Overview of Formative, Process, and Outcome Evaluation Methods*
(Berkowitz, et al, 2008) cited the campaign as being based on social cognitive theory and the
theory of planned behavior while the article, Initial Outcomes of the VERB Campaign (Huhman,
et al, 2008) reported that it was also based on McGuire’s hierarchy of elements. Another
limitation of this study is that articles do not report their findings in the same manner. In order
for campaign outcomes to be evaluated correctly so that methods and effectiveness across
campaigns can be compared, a standard format for evaluating and reporting on campaigns needs
to be implemented.

The limitations of this study include the fact that four of the articles analyzed for the
general campaigns and one article analyzed for the targeted campaigns were about the VERB
campaign. The VERB campaign was developed and implemented by the U.S. Department of
Health and Human Services (USDHHS) and the Centers for Disease Control and Prevention
(CDC) and was the longest running and most heavily funded campaign of all those analyzed,
causing it to appear more times in the analyses and perhaps skewing the findings.

Another limitation of the study is the constrained time span for analysis of childhood
obesity campaigns. The dramatic increase in the prevalence of childhood obesity is relatively
recent (CDC, 2008). Therefore, literature and campaigns have yet to be developed, disseminated,
and their impacts adequately evaluated. Although numerous campaigns exist, not all have been
evaluated.

Another limitation of this study is the fact that campaigns are evaluated differently.
Campaigns measure different outcomes. For example, the VERB campaign often measured
awareness of the campaign, while the 5-A-Day for Better Health campaign measured outcomes
such as attitude and knowledge as well as awareness and Junk Food Fighters measured behavior
change. Articles for this study came from journals such as the American Journal of Health
Promotion, Psychology in the Schools, and Pediatrics, (the official journal of the American Academy of Pediatrics) and from sources such as the National Cancer Institute. Since these journals come from different disciplines, the way they report on campaigns differs. Another limitation of this study is that not all campaigns have published evaluations. For example, 5-4-3-2-1 Go! targeted children in the Chicago area. At the time of this study, the results of the campaign evaluation had not yet been published. The author was contacted but his evaluation had not yet been accepted for publication and was therefore unavailable.

Future Studies

As more childhood obesity campaigns are developed, implemented, evaluated and their results published, there will be more information available. For example, The Let's Move campaign, recently implemented by First Lady Michelle Obama should provide researchers with more material that can be analyzed. The campaign, whose goal is to eliminate childhood obesity in a generation, is both nutrition and physical activity based.

Until recently, childhood obesity was thought of only as a medical issue. Changing the framing to include the public health implications may raise awareness that low social economic status is a factor in childhood obesity (CDC, 2009). More campaigns may begin to target lower SES populations. Research like that of Niederdeppe, et al., (2008) who conducted a comparison of anti-smoking campaigns to low SES populations and general populations, could be performed.

Another study could include campaigns from countries such as Australia, which also has a high rate of childhood obesity. As more countries across the world develop higher rates of childhood obesity, media campaigns will begin to be developed and implemented, providing more material for research.

The findings of this study have implications for future studies in that the list of
recommended “best practices” has not yet been assessed as a collective to determine whether or not they lead to better outcomes than other campaign approaches. Assessing the efficacy of these practices in targeted and general campaigns could potentially advance the efforts to combat the childhood obesity epidemic.
REFERENCES


APPENDICES
APPENDIX A

DEFINITION OF TERMS

Awareness is defined as “Recall of the campaign message” (Bauman, Bowles, Huhman, Heitzler, Owen, Smith & Reger-Nesh, 2008, p. S250).

“Body mass index (BMI) is a practical measure used to determine overweight and obesity. BMI is a measure of weight in relation to height that is used to determine weight status” (CDC, 2009, p. 1).

“Branding is a process of imbuing a product with positive attributes and characteristics specifically designed to increase the appeal of that product to consumers” (Asbury, Wong, Price & Nolin, 2008).

Cost-efficient analysis is, “An analysis used to compare the cost of alternative interventions that produce a common health effect. It divides the net cost of a program by the outcomes” (Peterson, Chandlee & Abraham, 2008, p. 428).

Ethnicity is a multi-faceted quality that refers to the group to which people belong, and/or are perceived to belong, as a result of certain shared characteristics, including geographical and ancestral origins, but particularly cultural traditions and languages” (Bhopal, 2004, p. 443).

Health communication as defined by Healthy People 2010 as, “the study and use of communication strategies to inform and influence individual and community decisions that enhance health. It links the domains of communication and health and is increasingly recognized as a necessary element of efforts to improve personal and public health” (USDHHS, 2000, p. 11-3).

Health communication campaigns, which are “organized and purposive efforts to communicate to, persuade and influence a population to consider adoption or change to more health enhancing
practices” use different techniques to persuade and influence (Bauman et. al., 2006, p. 312).

Health disparities is defined by Healthy People 2010 as, “Preventable differences in the burden of disease, injury and violence, or opportunities to achieve optimal health experienced by socially disadvantaged racial, ethnic, and other populations groups and communities” (CDC, 2008, p. 1).

Health promotion, as defined by the WHO (2008) is “a process of enabling people to increase control over their health and its determinants, and thereby improve their health” (p. 6).

“Mass media is comprised of a myriad of communication channels. Traditional channels for mass communication such as billboards, print, television and radio may be supplemented by new media channels including the Internet, mobile phones and other wireless communications devices” (Bauman et. al, 2006, p. 312).

Obesity for children, as defined by the CDC, is a youth whose body mass index (BMI) is at or above the 95th percentile (CDC, 2009).

“Overweight is defined as a BMI at or about the 85th percentile and lower than the 95th percentile” (CDC, 2009).

“Program evaluation is the application of empirical social science research methods to the process of judging the effectiveness of public policies, programs or projects, as well as their management and implementation, for decision-making purposes” (Langbein & Felbinger, 2006, p. 3).

Public health is defined as “the science and art of promoting health, preventing disease and prolonging life through the organized efforts of society” (Lincoln & Nutbeam, 2006, p. 13).
Race is defined “By historical and common usage as the group (sub-species in traditional scientific use) a person belongs to as a result of a mix of physical features such as skin color and hair texture, which reflect ancestry and geographical origins, as identified by others or, increasingly, as self identified” (Bhopal, 2004, p. 444).

Sex: “In contemporary Western models, ‘sex’ is deemed as the biological status of a person as either male or female based on anatomical characteristics” (Newman, 2002, p. 353).

“Social marketing is the use of marketing principles and techniques to influence a target audience to voluntarily accept, reject, modify, or abandon a behavior for the benefit of individuals, groups or society as a whole” (Kotler, Roberto & Lee, 2002, p. 5).

Understanding is defined as “Knowledge of how well a campaign’s messages penetrated the target audience” (Huhman, Bauman & Bowles, 2008, p. S-240).
APPENDIX B:

ARTICELLS ANALYZED IN STUDY

General Campaigns


APPENDIX B (continued)


Targeted campaigns


APPENDIX B (continued)

