

# HEALTH ORIENTATION AS A PREDICTOR OF EXERCISING: A PSYCHOGRAPHIC APPROACH

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# HEALTH ORIENTATION AS A PREDICTOR OF EXERCISING: A PSYCHOGRAPHIC APPROACH

PEER  
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## ABSTRACT

This article offers a psychographic framework for approaching exercise participation. More specifically, it investigates the role of an overall preventative orientation toward health as an underlying dimension that promotes exercise behavior. Based on two sources of data, results provide preliminary support that individual propensity to engage in physical activity is related to his or her underlying sense of health orientation. Theoretically, these results support past attempts to increase our understanding of the factors underlying individual predispositions to support a healthy lifestyle. Specific recommendations are made for campaign initiatives that take a comprehensive and long-term approach to health behavior change in populations in addition to the traditional, more episodic approach found in much of the literature.

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## INTRODUCTION

The prevalence of Americans considered clinically overweight or obese has been a public health concern for over a decade now. This concern continues as the prevalence of Americans who are overweight and/or obese have risen nearly 10% since 1994 (Flegal et al. 2002). One of the potential causes of this upsurge rests with the fact that 60% of Americans engage in less than 10 minutes of daily physical activity (Lethbridge-Cejku, Rose, and Vickerie 2006). This is drastically below the recommended 30 minutes of moderate-intensity physical activity on most days of the week proposed by the U.S. Department of Health and Human Services (2005). In a recent review, the President's Council on Physical Fitness and Sports (Booth and Chakravarthy 2002) reported that sedentary individuals are at increased risk for several chronic health conditions

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including, but not limited to, coronary heart disease, depression, hypertension, type 2 diabetes, and premature mortality (see also U. S. Department of Health and Human Services 1996). In fact, inactive individuals have a greater relative risk of all-cause-mortality than cigarette smoking, high blood pressure, high cholesterol, or obesity (Booth and Chakravarthy 2002). These trends do not seem to be abating as “[there] has been a dramatic increase in the incidence of chronic health conditions in the latter part of the 20th century. Concurrent with this increase has been a reduction in daily physical activity.” (Booth and Chakravarthy 2002, 5).

Whereas debates persist as to the cause of this shift in Americans’ activity, the most startling statistics are those that concern our nation’s youth. Since 1991, when 42 percent of school children participated in daily physical education, the percentage of adolescents in grades 9–12 participating in daily physical education has declined to 29 percent (National Coalition for Health Statistics 1999; U. S. Department of Health and Human Services 2000). Likewise, young men and women ages 18 to 24 are more likely to be obese and engage in sedentary behavior when compared with other age cohorts (Winkleby and Cubbin 2004). In fact, Buckworth and Nigg (2004) found a negative correlation between age and physical activity in a study with college students indicating a tendency for this age group to decrease physical activity as they get older. To combat this trend, *Dietary Guidelines for Americans 2005*, the federal government’s science-based advice to promote health and reduce risk of chronic diseases through nutrition and physical activity, places stronger emphasis on increasing physical activity for all age groups (Dietary Guidelines Advisory Committee 2004). Clearly, the

need to reach sedentary Americans is present and in full public sight. 85

In line with these concerns, this article attempts to position exercise within an overall health prevention orientation, thus adding to past research focused on similar behaviors (Dutta-Bergman 2004). In service of this aim, we first outline the need for a psychographic approach to health intervention campaigns—in addition to demographic profiling—that takes a comprehensive view of the individual and addresses his or her behaviors in the context of relevant activities, interests, and opinions. By bringing to the surface the underlying motivational correlates to behaviors such as exercising, the campaign designer can attempt to tailor messages in a way that is likely to increase attention, interest, and adoption of suggested actions. We present evidence from two studies that support this approach. Also, implications for campaign designers are discussed along with the limitations of the present study and directions for future research. 100 105 110

## ANTECEDENTS OF EXERCISING

Most would agree that physical activity behaviors are the result of multiple and interacting factors (Sallis and Owen 2002). Thus, it is important that efforts to increase exercise participation focus on those correlates of exercise behavior associated with participation or lack thereof. These correlates are usually placed in three categories: environmental social, and personal factors (Sallis and Owen 1999). The following sections provide a brief outline of the formative research within these three areas, and we comment on interventions that have targeted these underlying mechanisms with more or less success. 115 120 125

### ENVIRONMENTAL CORRELATES OF EXERCISE

Environmental factors are those elements of an individual's physical location or social network that promote or impede activity. Research has found that individuals with greater access to exercise facilities (e.g., parks, trails, exercise equipment) are more likely to engage in regular physical activity (Jakicic et al. 1997; Saelens et al. 2003). Supporting this survey data, campaigns that have increased access to walking trails (Brownson et al. 2000) and access points at work (see Dishman 1998 for a review of worksite interventions), church (see Peterson 2002 for a review of church-based interventions), or school (Hayman et al. 2004; Fox and Harris 2002) have found increases in exercise participation. However, other strategies such as providing community-based exercise classes (Eaton et al. 1999; Pate et al. 2002) have found limited support. In all, these interventions find moderate increases in physical activity participation with limited length of adherence.

### SOCIAL CORRELATES OF EXERCISE

Aspects of one's social environment may also promote or deter exercise behavior. For instance, Evenson et al. (2003) found that knowing people who exercised or seeing people exercise in the neighborhood were predictors of activity level among a sample of Latina women. Similarly, research with diverse samples continually finds that individuals who feel supported in their exercise efforts tend to exercise more (Resnick et al. 2002; Treiber et al. 1991; Wallace et al. 2000). In their systematic review of physical activity interventions, Kahn et al. (2002) concluded that community-based support interventions can be effective at increasing levels of physical activity. However, the authors also acknowledged that within-population variability should

be addressed by future research, especially with regard to the type of support that is most beneficial.

### PERSONAL CORRELATES OF EXERCISE

Individual-level antecedents of exercise behavior include demographics, personal barriers, personality, and other psychosocial factors, and behavioral attributes and skills. In terms of demographics, research consistently finds that physical inactivity is greater among women, racial minorities, older adults, and the less affluent when compared with men, whites, younger adults, and the more affluent (Sallis and Owen 1999; Trost et al., 2002; U.S. Department of Health and Human Services 1996). However, the effect-sizes of demographics tend to be small relative to barriers such as not having enough time, limited access, and being too tired that are found in both men and women but are higher in ethnic minorities and those with lower socioeconomic status (Bozionelos and Bennett 1999; Clark and Northwehr 1999; King et al. 2000).

Although there is consistency with respect to demographics and personal barriers, the "most consistent correlate of physical activity behavior" is physical activity self-efficacy or an individual's belief that he or she has the ability to exercise on a regular basis (Trost et al. 2002; see also McAuley 1992, 1993). However, the role of self-efficacy on adherence to an exercise program is not as strong a predictor as past exercise history and may be dependent on the program format (Oman and King 1998). An individual's level of exercise self-efficacy is closely related to his or her exercise stage of readiness to change (O'Hea et al. 2004). That an individual's readiness for change predicts adherence to health behavior change is almost a truism in current health education literature.

Stemming from the Transtheoretical Model originally developed within psychotherapy (Prochaska and DiClemente 1982), the idea that individuals can be placed on a continuum from precontemplation to maintenance regarding a plethora of health behaviors has received heightened empirical scrutiny in the past decade. In a recent meta-analysis, Ryan and Lauver (2002) found that messages tailored to an individual's stage of change were more successful at motivating physical activity; however, this result is based on a limited number of studies and equivocal results were also found in this review.

Exercise behavior is also more prevalent in those individuals who engage in other healthy activities or who do not engage in unhealthy behaviors. In the most recent review, Trost et al. (2002) found positive associations between physical activity and a healthy diet as well as an inverse relationship between physical activity participation and smoking. It is within this literature that we seek to align a psychographic approach to promoting exercise behavior. Based on the argument that psychographics provide meaningful insights into segmentation of the target audience, we explore the unique role of health orientation as an antecedent to exercising.

## A PSYCHOGRAPHIC APPROACH

Psychographic factors refer to the activities, interests, and opinions of consumers. They are examined in an interrelated set to construct the narrative of the consumer segment (Dutta-Bergman 2004; Dutta and Youn, 1999; Maibach, et al., 1996). Psychographic research offers guidelines for the construction of campaign strategy by demonstrating the linkages among a variety of variables (Townsend 1987). A comprehensive set of psychographic factors including activities,

interests, and opinions combined with demographics are often more effective than demographics alone in understanding consumer behavior and in constructing communication strategies for persuasive campaigns (Dutta-Bergman 2004).

Much of the research conducted under psychographics is driven by the approach that individuals maximize the consistency among their attitudes directed at different objects (e.g., product categories and brands) and issues (Dutta and Youn 1999). According to the cognitive framework of lifestyle study suggested by Grunert, Bruns, and Bisp (1997), cognitive structures are made of a system of cognitive categories, their associations, and scripts. These cognitive categories and their associations result from lifelong learning and manifest themselves in enduring dispositions to behave. They create repositories of related activities, interests, and opinions that get enacted within a particular cognitive mind-frame or are a part of specific cognitive categories and associations (Dutta and Youn 1999; Shrum, McCarty, and Lowrey, 1995; Swenson and Wells 1995). More specifically in this article, we examine the role of health orientation as an antecedent of exercising behavior.

## HEALTH ORIENTATION

As a key component in the explanation of health behaviors, health orientation refers to systematic differences within the population with respect to the level of motivation consumers feel with respect to issues of health (Dutta-Bergman 2004; MacInnis, Moorman, and Jaworski 1991; Moorman and Matulich 1993; Park and Mittal 1985). Reflective of the degree of interest consumers have in issues related to health, health orientation taps into the motivation component in the realm of health-related behaviors. In other words,

health orientation is an indicator of the consumers' overall interest in issues of health and demonstrates the extent to which the consumer is intrinsically involved in health-related issues. It is important to note that health orientation is conceptualized as an intrinsic interest rather than an interest that is prompted by situational factors in the environment of the consumer the greater the intrinsic interest in health-related issues, the stronger the likelihood of engaging in a variety of health-related behaviors (MacInnis et al. 1991; Moorman and Matulich 1993; Park and Mittal 1985).

Motivation in health-related issues taps into the overall orientation toward health rather than serving as an indicator of one particular set of health behaviors. In their model of preventive health behaviors of consumers, Moorman and Matulich (1993) articulate that the motivation to be healthy is indicative of the extent to which an individual is willing to take care of his or her health, defining health orientation as "a goal-directed arousal to engage in preventive health behaviors" (Moorman and Matulich 1993, p. 210). Similarly, working from the framework of the theory of cognitive orientation, Krietler and Kreidler (1991) found distinctive psychological profiles for individuals scoring high and low on cognitive orientation to health. These findings support the conclusion that "health orientation . . . has manifestations in many domains of personality, including emotions, the self-concept, and mental health" (pp. 54–55). Therefore, health orientation triggers a wide variety of health preventative behaviors that are intertwined with this commitment toward maintaining one's health, given the ability of the consumer to engage in these behaviors based on such factors as accessibility to resources, behavioral skills, self-efficacy, and response efficacy, among

others. For instance, Dutta-Bergman (2004) demonstrated that an underlying orientation toward health predicts specific health behaviors such as healthy eating and health information seeking.

Published scholarship on consumer processing of information and subsequent decision making suggests that motivation triggers an individual's intrinsic interest in a particular issue or topic, thus leading to active engagement in cognitions and behaviors related to the specific issue or topic (Petty and Cacioppo 1986). In other words, motivation activates consumer engagement in information processing, decision making, and adoption of behavioral choices that are in line with the particular issue or topic being considered. A high level of motivation increases the attention paid by the individual to relevant information and the comprehension of such material. Extrapolation of motivation to the realm of health suggests that a health-motivated consumer actively participates in health-related issues and actively searches out relevant health information, provided the ability to do so (Celsi and Olson 1988; Dutta-Bergman 2004; MacInnis et al. 1991; Moorman and Matulich 1993; Park and Mittal 1985). One of the critical aspects of the motivation-based model is its emphasis on the consumer's interest in health as a global construct instead of focusing on a specific aspect of health.

Supporting the notion of health orientation as an underlying factor that dictates a plethora of interconnected health behaviors, low physical activity has been shown to correlate with other negative health behaviors (e.g., smoking, lower fruit and vegetable use, etc.) in both adults (Blair, Jacobs, and Powell 1985; Simoes et al. 1995) and adolescents (Pate, et al. 1996). Rainey et al. (1998) found that as physical activity and

athletic participation increased in a random sample of adolescents, diet quality also improved. Moreover, it has  
 410 been argued that weight control can be seen as a plan that includes strategies of diet, exercise and other behaviors that correspond quite nicely to an overall healthy individual. Likewise, unhealthy  
 415 dieting practices (i.e., "extreme dieting") are linked to other unhealthy behaviors such as smoking, marijuana use, and not exercising (Crafiroiu, et al. 2003). Furthermore, published scholarship  
 420 suggests that an underlying sense of health orientation positively predicts healthy behaviors such as healthy eating and health information seeking (Dutta and Youn 1999; Dutta-Bergman  
 425 2004).

This project seeks to continue the challenge of treating health behaviors as episodic entities. Specifically, we wish to locate exercise behavior in the realm of a  
 430 general orientation toward health prevention: health orientation. The theoretical premise driving this research is that an overall orientation toward making healthy choices and being actively involved  
 435 in issues of health manifests itself in a plethora of health behaviors by generating a positive orientation toward such behaviors. Likewise, an overall orientation toward being healthy is likely to be correlated with a  
 440 stronger orientation toward exercising. Based on the above logic, the following hypotheses are advanced:

- H1: Health orientation will be positively related with self-report of  
 445 exercising.
- H2: Health orientation will be positively related with exercise behavior.
- H3: Health orientation will be positively related with orientation  
 450 toward exercising.

For this project, two studies were conducted, using two different data sets collected over two different time frames in two different populations. The use of  
 455 these different data sets that draw from different populations was based on the rationale that the use of these diverse populations to test the hypotheses would lend to the convergent validity of the  
 460 project. Whereas study one dealt with a student sample to examine the link between health orientation and exercise, study two examined a data set containing a national sample. 465

## STUDY ONE

### DATA AND MEASURES

To test hypotheses 1 and 2, data were gathered from 97 college students enrolled in a large midwestern university  
 470 who participated in exchange for extra credits in the spring and fall semesters of 2004. Approval for the study was obtained from the appropriate human subject review board. After signing informed  
 475 consent forms, subjects were asked questions about their attitudes, interests, opinions, and behaviors related to a plethora of health issues including exercising. The mean age of the sample  
 480 was 20. The sample was comprised of 44% men and 56% women.

**Exercise Behavior.** The measures of exercising were drawn from the published literature (Walcott-McQuigg and Prohaska  
 485 2001). Respondents were provided the following instruction, "For the next two questions regarding physical activity, please consider the following information: Vigorous physical activities refer to  
 490 activities that take hard physical effort and make you breathe harder than normal," and "moderate physical activities refer to activities that take moderate physical effort and make you breathe  
 495 somewhat harder than normal." Subsequently, the respondents were

asked, "During the last five days, on how many days did you do moderate and/or vigorous physical activities for at least 10 minutes at a time?" and "On one of these days, how much time did you spend doing moderate and/or vigorous physical activities?"

Responses were measured on a 1 to 5 scale, with 1 representing "less than 10 minutes," 2 representing "11 to 20 minutes," 3 representing "21 minutes to 40 minutes," 4 representing "41 minutes to 1 hour," and 5 representing "over 1 hour." The total self-reported measure of exercising was obtained by multiplying the number of days and the number of hours per day.

**Self-Report of Exercising.** Self-reported exercising was measured by items drawn from the literature on exercising (Prochaska and Walcott-McQuigg 1996): "I exercise regularly," and "I am physically active" measured on a 1 to 5 scale, with 1 reflecting "strongly disagree" and 5 reflecting "strongly agree." Principal component factor analysis with Varimax rotation produced a single factor with Eigenvalue of 1.83. Cronbach's alpha of the scale was high (.90). The items were aggregated to produce the self-reported exercising scale.

**Health Orientation.** Past research has examined indicators of health orientation in the realms of health consciousness, health information orientation, health beliefs, and healthy activities. This article builds on that line of work to articulate the role of prevention orientation, an overall orientation toward taking preventative measures. As suggested by Dutta-Bergman (2004), health-oriented individuals are more likely to have a positive orientation toward a variety of preventative behaviors, resulting in a positive orientation toward prevention. Health orientation was measured by three items borrowed from existing literature (Dutta-Bergman 2004): "I actively try to

prevent disease and illness," "I take preventive measures to keep myself healthy," "I do everything I can to stay healthy." When subjected to a principal component factor analysis with Varimax rotation, a single factor emerged with Eigenvalue greater than 1. The Cronbach's alpha of the scale was .82. Thus, the set of four items were aggregated to generate the health orientation scale.

## RESULTS

H1 stated that health orientation will positively predict self-report of exercising. To test the hypothesis, a simple regression analysis was conducted. Health orientation was entered as the independent variable, and self-reported exercise was entered as the dependent variable. The results of the regression analysis supported the hypothesis, demonstrating a statistically significant and positive relationship between health orientation and self-report of exercising:  $\beta = .50, p < .001, R^2 = .254$ .

H2 stated that health orientation will positively predict exercise behavior. The regression analysis supported H2, pointing out that health orientation was positively related with self-reported measures of exercising behavior:  $\beta = .25, p < .05, R^2 = .064$ .

Study one was conducted with a student population, thus limiting the generalizability of the data. Although measures were not taken, one potential limitation of a student-based sample is the limited variance in demographic factors such as age, education, and income. Because this study lacked statistical or other control for the variance in exercising explained by demographics, we analyzed a population-based survey to further supplement the findings in the first study. Furthermore, study two provided an opportunity to examine the role of health orientation with respect to exercise orientation.



## STUDY TWO

## DATA AND MEASURES

595 The HealthStyles database (Porter  
Novelli 1999), collected annually since  
1995, is based on the results of three  
postal mail surveys. The initial survey, the  
DDB Needham Lifestyles survey  
600 (commissioned by DDB Needham  
Worldwide), is sent to a stratified random  
sample of approximately 5,000 U.S. adults  
in April of each year. The sample is  
generated from a panel of 500,000  
605 cooperating households that represent a  
range of sociodemographic  
characteristics. The second survey is a  
supplemental mailing of the Lifestyles  
survey to adjust the representation of  
610 particular households in the database. The  
third survey, HealthStyles, is sent to  
participants who completed either the  
initial or supplemental Lifestyles survey.  
Participants in each of the surveys are  
615 sent small gifts for their participation  
(such as a 20-minute, calling card) and  
are entered into a cash prize drawing. In  
2000, the response rates for Lifestyles and  
HealthStyles were 68% and 74%,  
620 respectively. The entire sample was  
weighted on age, sex, race or ethnicity,  
income, and household size to reflect U.S.  
Census data. There were 2,353  
participants who provided usable  
625 surveys. The sample was comprised of  
48.1% men and 51.9% women. The  
mean age of the sample was 45.04  
( $SD = 16.63$ ).

**Exercise Orientation.** Exercise  
630 orientation was measured by the  
instruction, "Please rate each of the  
following health behaviors on a scale of 1  
through 5 depending on how important  
you think that behavior is to your overall  
635 health." Responses were measured on a 1  
to 5 scale, with 1 representing "not so  
important" and 5 representing "extremely  
important."

**Exercise Behavior.** To measure  
exercising, respondents were instructed, 640  
"Please place an "X" for each of these  
behaviors that you currently perform to  
maintain your health." The item was  
"exercising," and the responses were  
measured on a dichotomous yes/no scale. 645

**Health Orientation.** Health orientation  
was specifically measured in this project  
by orientation toward preventive  
behaviors. The five items tapping into  
preventive behaviors have been validated 650  
in the literature on health orientation  
(Dutta-Bergman 2004) and were "Living  
life in the best possible health is  
important to me," "Eating right,  
exercising, and taking preventive 655  
measures will keep me healthy for life,"  
"I try to understand my personal risks,"  
"I actively try to prevent disease and  
illnesses," and "I do everything I can to  
stay healthy." The items were measured on 660  
a 1 to 5 scale, with 1 reflecting "strongly  
disagree" and 5 reflecting "strongly  
agree." When subjected to a principal  
components factor analysis with Varimax  
rotation, a single factor was produced 665  
with factor loadings ranging from .66 to  
.76 and an Eigenvalue of 2.49. Cronbach's  
alpha for the scale was .74.

## RESULTS

The national sample was used to test 670  
H2 and H3. To test H3, health orientation  
will positively predict overall orientation  
toward exercising, a hierarchical  
regression analysis was conducted.  
Demographic variables<sup>1</sup> were entered in 675  
the first block, and the health orientation  
variable was entered in the second block  
(see Table 1); exercise orientation was  
the dependent variable. The model  
explained 14.2% of variance in exercise 680  
orientation.

The demographic variables explained  
2.9% of variance in exercising  
orientation. Age was a significant  
predictor of exercise orientation such that 685  
younger participants were more likely to

**TABLE 1****Hierarchical Multiple Regression Explaining Orientation toward Exercising**

	Orientation toward exercising	
	Final beta	R <sup>2</sup>
Demographics		.029***
Age	-.05*	
Education	.133***	
Income	.06*	
Health orientation	.34***	.112***
Total R <sup>2</sup>		.142***

\* $p < .05$ ; \*\*\* $p < .001$ .

see exercise-related behaviors as important to health. Education and income were positively related with exercise orientation. Among the demographic variables, education was the strongest predictor of exercise orientation. Health orientation was positively related with exercise orientation, explaining 11.2% of the variance in exercise orientation and demonstrating support for H3.

H2 stated that health orientation will be positively related with exercise behavior. To test this hypothesis, a logistic regression analysis was conducted. Demographic variables were entered into the first block, and health orientation was entered into the second block (see Table 2); exercise behavior was the dependent variable.

All four demographic variables entered into the model (age, education, income, and gender) were related to exercise behavior. Older participants were more likely to report exercising as compared with younger participants. Men were more likely to exercise as compared with women. Similar to the results in the context of orientation toward exercising,

education and income were positively correlated with exercising. In support of H2, health orientation was positively related with exercise behavior. In other words, those individuals who reported having exercised were also more likely to be oriented toward health as compared with those individuals who did not report exercising.

**DISCUSSION**

Based on psychographic research, this article articulates the importance of taking a comprehensive approach to the examination of health behaviors. It suggests that an underlying orientation toward issues of health drives the enactment of a plethora of health behaviors. Specifically, it examines the role of prevention orientation as an indicator of health orientation in predicting exercising behavior. Individuals who are oriented toward issues of health are more likely to seek out health-related information (Dutta-Bergman 2004) and hold positive attitudes toward a wide range of health-related behaviors (MacInnis et al. 1991;

**TABLE 2**  
Relationship between Health Orientation and Exercise Behavior

Variable	B	S.E.	Wald	Df	Sig.	Exp(B)
Age	.01	.00	6.14	1	.013	1.007
Gender	.19	.092	4.23	1	.04	1.21
Education	.16	.04	13.20	1	< .001	1.17
Income	.03	.00	14.33	1	< .001	1.03
Health orientation	.221	.016	180.410	1	< .001	1.25
Constant	-6.61	.44	225.305	1	< .001	.001

Total percentage correct=67.3, Nagelkerke  $R^2$ =.152,  $\chi^2$ =271.34,  $p$ <.001.  
B=■, S.E.=■, Wald=■ Df=■ Sig=■ Exp(B)=■.

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Moorman and Matulich 1993; Park and Mittal 1985). This research suggests that health behaviors are not episodic entities that exist in distinct categories independent of other health behaviors. They are most likely to exist in interlinked networks, in conjunction with other health behaviors, drawing upon an underlying orientation toward health.

That an overall orientation toward issues of health drives the formation of healthy attitudes, health-oriented beliefs, and ultimately health-related behaviors, perhaps leads us to conclude that specific health behaviors need to be located

within the rubric of an overall orientation toward health and prevention. It is worthwhile to point out that the combination of demographics and health orientation explains approximately 14% of the variance in health orientation, leaving additional room for other variables that ought to be studied in the context of exercising. However, it is also noted that the present study is correlational and cross-sectional in nature, thus any conclusions about causality are speculative at best.

More specifically, this article examined the role of health orientation in

the realm of orientation toward and behaviors related to exercising. Supporting the notion of an underlying sense of health orientation, study one pointed out that health orientation was a positive predictor of self-report of exercising and exercising behavior. The second study followed up the link between health orientation and exercising established in the student population by examining exercising in the domain of a national sample. Based on an analysis of nationally representative data, the study showed that health orientation was positively related with exercise behavior. Further supporting a psychographic approach toward promoting health behavior, health orientation also explained a significant amount of variance in exercise orientation, beyond the variance explained by the demographic variables. In fact, the demographic variables explained only slightly less than 3% of the variance in an individual's belief that exercise is an important tool in combating health-related issues, compared with the 11% of variance explained by health orientation.

Taken together these findings suggest the relevance of adopting a comprehensive

approach to health-oriented lifestyles in campaign planning, in addition to the multiple campaigns that take an individual behavior approach. In this comprehensive approach, specific health behaviors are located in a contextual environment, treated in conjunction with other health behaviors as a lifestyle package. Over the past decade this notion has been realized by planners of community-based projects such as the Stanford Five-City Project (Farquhar et al. 1985) and the Pathways Obesity Prevention Program (Davis et al. 1999). However, as health promotion becomes more complicated and populations more diverse, the ability to tailor messages based on individual-level motivations toward health becomes more important.

### **LIMITATIONS**

While heuristic in nature, this study does suffer from some key limitations. First, the strong correlations between health orientation and the various measures of audience response to exercising might have been a product of common method bias, social desirability bias, or consistency bias. Future research ought to examine actual exercising behavior longitudinally, and use other measures of healthy behavior beyond self-reports. Research may also explore alternative methods such as experimental designs that examine pre-post differences in health orientation after exposure to health campaign messages.

Second, offering extra credit is likely to have introduced response bias in the student sample. The use of the HealthStyles data for study two seeks to complement study one's sample drawn from the student population by providing convergent validity. Since the two studies draw from distinctly different populations, they are likely to provide greater support for the phenomenon under question to the extent they reinforce the findings

generated from the different populations. The use of different time frames in this project and the existence of the consistent health linkages in these distinctly different time frames attest to the global role of health orientation.

Third, in the second study, exercising orientation and exercising were measured by single items. Also, the measures were self-reported indicators of exercising. This raises questions about the validity and reliability of the data. Future efforts may complement the self-reported measures of the behavior with other indicators. Fourth, health orientation was measured in two distinct ways. Study one offered a three-item measure for the concept, whereas study two offered a five-item measure. Although the two operationalizations tapped the general concept of health orientation to a similar degree (i.e., the scales both have face validity), it is not possible to determine whether these two scales are tapping the exact same construct. Future research should attempt to provide scholars with a reliable and valid measure of health orientation.

Finally, health orientation was conceptualized as an orientation toward preventative health behaviors. This is but one aspect of an overall orientation toward health. Additional aspects of a health-oriented mindset may also include, but are certainly not limited to, searching for and obtaining health-related information from a variety of sources, overall level of involvement with health topics, personal relevance as related to specific health domains, and self-efficacy about controlling one's health. The specific components of health orientation should be given further attention in future research.

### **APPLICATIONS**

In addition to the focus on individual behaviors as embodied in most health

interventions<sup>2</sup>, this article provides preliminary support that an overall health orientation underlies attitudes, beliefs, behavioral intentions, and behaviors in specific health domains. Exploring the underlying orientation that drives specific behaviors, this article suggests that campaigns might provide insightful links in beginning to address the goal of changing overall health orientations in communities. The importance of addressing overall health orientation was documented by Rimal, Flora, and Schooler (1999) in their examination of the Stanford Five-City Project that addressed a combination of lifestyle factors such as diet, exercising, and smoking. These researchers observed that the exposure to the campaign messages indeed generated an increase in health orientation within the community. In other words, addressing a variety of components of overall health indeed generated greater consumer orientation toward health issues.

A health-orientation-based approach to healthy behaviors allows the campaign designer to treat the audience member as a whole, emphasizing the overall lifestyle of the message receiver. This suggests the need for combining health initiatives and launching them within the broader category of lifestyle factors that address the holistic profile of the target segment. In such a strategy, the concept of the “product” in the social marketing mix would shift from an individual behavior such as “exercising” to a group of interrelated behaviors located under the umbrella of overall health orientation. An example of this is the coordinated school health program that emphasizes the well-being of K–12 students and seeks to teach students how to make healthy choices (Cho and Nadow 2004; Greenberg, Cottrel, and Bernard 2001). The goal of the program is to foster healthy environments

at schools that facilitate the development of healthy citizens through the coordination among parents, schools, and communities.

Health-based prevention efforts may focus on cultivating health orientation in schools, colleges, workplaces, and other organizational scenarios as a part of civic development initiatives within communities. In conjunction with past research (Cho and Nadow 2004; Dutta-Bergman 2004; Greenberg et al. 2001; Rimal et al. 1999), the importance of having comprehensive programs that seek to foster an active sense of overall commitment to health and society as opposed to the traditional emphasis on a single behavior via simple messages that isolate the behavior and remove it from its contextual environment is highlighted in this study as well. Based on a holistic approach to health, wellness programs in schools and workplaces that emphasize comprehensive health and attend to the development of the complete healthy person are likely to foster specific health behaviors by encouraging a global health orientation. In other words, the cultivation of health orientation through comprehensive education programs is likely to ensure the generation of a wide variety of health behaviors. This approach may be complemented with individual behavior campaigns that offer avenues for learning about specific behaviors such as eating five fruits and vegetables and exercising, away others.

Given that health orientation is an intrinsic as opposed to a situationally induced motivation to engage in healthy behaviors, the promotional mix for cultivating an overall health orientation ought to include additional strategies beyond the traditional public service advertisements, press releases, and newspaper inserts. For instance, education needs to be conceptualized as a

key component of promoting health orientation in communities. Similar to the existing literature on campaigns that target comprehensive health education, emphasis needs to be placed on the development of school-based curricula that address a general orientation toward health and might provide an effective strategy to reach individuals early in their life cycles (Roccella 2002). Physical education classes need to be developed in coordination with nutrition programs, drug resistance workshops, and the like.

Health needs to be integrated with other aspects of instruction such as civic education and community awareness through service learning projects in schools and colleges. Similarly, workplaces might consider offering workshops that address overall health orientation. Also, multiple stakeholders within the community need to be engaged to create a sustainable environment that fosters health orientation.

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## ENDNOTES

1. Demographics were included in the model to assess the effect of an underlying orientation toward health while controlling for age, education, and income, all of which have been shown to be associated with exercise adherence (see limitations from study 1). Age of the respondent was measured in number of years. Gender was measured by a dichotomous variable with 1 reflecting female and 2 reflecting male. Education was measured by the question, "What is the last grade or class you completed in school?" Responses were measured on a 1 to 7 scale, with 1 representing "attended elementary school,"

- 2 representing "graduated from elementary school," 3 representing "attended high school," 4 representing "graduated from high school," 5 representing "attended college," 6 representing "graduated from college," and 7 representing "post-graduate training."

Income was measured on a 1 to 21 scale in response to the question, with

- 1 representing "less than \$5,000,"
- 2 representing "\$5,000 to \$7,499,"
- 3 representing "\$7,500 to \$9,999,"
- 4 representing "\$10,000 to \$12,499,"
- 5 representing "\$12,500 to \$14,999,"
- 6 representing "\$15,000 to \$17,499,"
- 7 representing "\$17,500 to \$19,999,"
- 8 representing "\$20,000 to \$22,499,"
- 9 representing "\$22,500 to \$24,999,"
- 10 representing "\$25,000 to \$27,499,"
- 11 representing "\$27,500 to \$29,999,"
- 12 representing "\$30,000 to \$32,499,"
- 13 representing "\$32,500 to \$34,999,"
- 14 representing "\$35,000 to \$39,999,"
- 15 representing "\$40,000 to \$44,999,"
- 16 representing "\$45,000 to \$49,999,"
- 17 representing "\$50,000 to \$59,999,"
- 18 representing "\$60,000 to \$74,999,"
- 19 representing "\$75,000 to \$99,999,"
- 20 representing "\$100,000 to \$124,999," and
- 21 representing "\$125,000 or more."

2. We are not arguing here that there is no concern with or treatment of multiple health-related behaviors in one campaign. In fact, there are numerous examples of campaigns that address diet, exercise, and other behaviors linked to an overall healthy lifestyle. There is, however, limited research that attempts to increase the underlying mechanisms driving the adoption of such behavior. Therefore, our recommendations for campaign planners is to take seriously an overall orientation toward health as one mechanism that might aid in successful campaigns.

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