

# Using Social Marketing to Develop and Test Tailored Health Messages

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**Objective:** To advance and promote procedures to evaluate tailored health messages based on the 4 Ps of social marketing (SM). **Method:** Three studies are presented for heuristic purposes to show the evolution and application of a “research plan” to 3 phases of SM research that address the 4 Ps. **Results:** Qualitative and quantitative methods pro-

vide useful information to develop messages and to evaluate message efficacy for public health campaigns, to recruit participants to interventions, and/or to influence program adherence and participant retention. **Conclusions:** Formal, systematic research methods offer a viable means to evaluate the potential of SM constructs.  
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Poets and health promotion programmers have similarities. A poem by Robert Frost adds perspective.<sup>1</sup>

*Do you know,  
Considering the market, there are  
more  
Poems produced than any other thing?  
No wonder poets sometimes have to  
seem  
So much more businesslike than than  
businessmen.  
Their wares are so much harder to get  
rid of.*

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The general public is not overwhelmingly infatuated with the wares of either. The public does not necessarily appreciate the poet or the contributions of the health promotion specialist who is devoted to reversing negative public health trends. An example of the diminished influence of health promoters can be found in *Clinical Guidelines on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults*.<sup>2</sup> Overweight and obesity prevalence among American adults ( $\geq 20$  years old) has increased to the point where  $\geq 1$  in 2 adults are overweight {body mass index,  $BMI = \text{weight (kg)}/[\text{height (m)}]^2 = 25.0-29.9$ } or obese ( $BMI = \geq 30$ ). Examination of the *Healthy People 2000: Midcourse Review and Revisions*<sup>3</sup> also reveals a poor record of substantial progress when individual behavior change is required. The public generally seems uninterested, unmotivated, or unwilling to make changes based on their progress and behavioral adoption of the health objectives for the nation. *Healthy People 2010: Understanding and Improving Health*<sup>4</sup> promulgates priorities that require individual behavior

**TABLE 1**  
**Issues Pertaining to Program Appeal Categorized**  
**According to the 4 Ps of Social Marketing**

Concept	Reasons for Lack of Allure
<b>Product</b>	<ul style="list-style-type: none"> <li>• Product lacks appeal.</li> <li>• Accepting the product could place consumer in a different social norm reference group, which is undesirable.</li> <li>• Selling products that have long-rather than short-term or immediate benefits.</li> <li>• Benefits even with “struggle” are not guaranteed.</li> <li>• Health behaviors are personally and socially complex and, consequently difficult to change.</li> <li>• Defining the product may vary by experts and may provide confusion and undermine motivation.</li> </ul>
<b>Place</b>	<ul style="list-style-type: none"> <li>• Programs not readily available, easily accessible, or timely in relationship to need.</li> </ul>
<b>Price</b>	<ul style="list-style-type: none"> <li>• Price may be greater than the benefits derived.</li> <li>• Program is out priced.</li> <li>• Assumption of personal responsibility for etiology of the disease, which may lead to blame, discomfort, and disillusionment.</li> </ul>
<b>Promotion</b>	<ul style="list-style-type: none"> <li>• Adequate number of efficacious behavioral interventions exist for most of the key risk factor behaviors.</li> <li>• Little focus on how to get people to use these interventions.</li> <li>• Aimed at masses and not hard-to-reach, high-risk, adverse groups.</li> <li>• Exchange process is often ill defined/ambiguous.</li> </ul>

**Note.** These issues were adapted from Egger, Spark, Lawson, and Donovan<sup>5</sup> and Rose.<sup>6</sup>

change applied to health problems resulting from overweight or obesity (nutrition), physical inactivity, tobacco use, substance abuse (alcohol and other drugs), irresponsible sexual behavior, mental instability (stress management), injury, and violence. The priorities listed may lack allure for reasons listed in Table 1 (according to key social marketing principles defined in Table 2). The underlying assumption regarding the failure of Americans to assist themselves in meeting the national objectives is that the “wares” being offered are unwanted, needed, or have little appeal to them.

### Marketing Perspective

If the “products” that the health promotion specialist has to offer are unpopular or have low appeal to the public, yet could dramatically improve the health status of the nation, then what can be done to promote what a health education specialist has to offer? One answer is (social) marketing. Why is marketing presumed

to hold promise, and are there any examples, commercial or otherwise, where marketing has been successful? Probably 2 of the most compelling examples of the effects of marketing are the “Pet Rock” in the 1970s and “Pocket Stones” in 2000. In these 2 instances, a need was created for objects that were common and readily available, but for all intents and purposes, had no utilitarian value. Surely then, principles based on commercial marketing may hold promise for marketing products of social importance that have known and measurable health benefits. Social marketing may be useful in multi-faceted behavior change, may encompass various strategies, and focus on a variety of outcomes. A prescribed research plan is essential in order to ascertain whether social marketing constructs are efficacious in promoting behavior change or achieving a given behavioral outcome.

### Definition of Social Marketing (SM)

SM has been defined as “the application

**TABLE 2**  
**Social Marketing Principles**

Construct	Definition
<b>Product</b>	<ul style="list-style-type: none"> <li>• Design of an item or idea and its desirability to the target audience in order to change their behavior.</li> </ul>
<i>Core</i>	<ul style="list-style-type: none"> <li>• Value (how important) and expectancy (how likely to occur) of the consumer's anticipated effects and whether the consumer believes the effects of engaging in the behavior will be either positive (desirable) or negative (undesirable).</li> </ul>
<i>Tangible</i>	<ul style="list-style-type: none"> <li>• Physical good or service received (which can be classified as either positive or negative and classified under value or expectancy).</li> </ul>
<b>Promotion</b>	<ul style="list-style-type: none"> <li>• Strategies and tactics for attracting the target audience and encouraging engagement in the behavior.</li> </ul>
<i>Incentive</i>	<ul style="list-style-type: none"> <li>• Rewards or incentives for engaging in a behavior.</li> </ul>
<i>Communication</i>	<ul style="list-style-type: none"> <li>• Mass communication themes used to make consumers aware of and designed to change behavior.</li> </ul>
<b>Price</b>	<ul style="list-style-type: none"> <li>• Various tangible and intangible costs that a person must accept in order to engage in the behavior.</li> </ul>
<i>Monetary</i>	<ul style="list-style-type: none"> <li>• Dollar amount for engaging in the behavior.</li> </ul>
<i>Opportunity</i>	<ul style="list-style-type: none"> <li>• Contrary behaviors for engaging in the behavior.</li> </ul>
<i>Psychological</i>	<ul style="list-style-type: none"> <li>• Emotions and attitudes contrary to engaging in the behavior.</li> </ul>
<i>Time</i>	<ul style="list-style-type: none"> <li>• Time devoted to the behavior.</li> </ul>
<b>Place</b>	<ul style="list-style-type: none"> <li>• Channels of distribution for delivering the idea or program.</li> </ul>
<i>Personal media</i>	<ul style="list-style-type: none"> <li>• Believable and influential personal (human) media.</li> </ul>
<i>Non-personal media</i>	<ul style="list-style-type: none"> <li>• Believable and influential non-personal (nonhuman) media.</li> </ul>
<b>Marketing Mix</b>	<ul style="list-style-type: none"> <li>• Collective contribution of the 4 <i>Ps</i> to develop a message/ intervention.</li> </ul>
<b>Audience Segmentation</b>	<ul style="list-style-type: none"> <li>• Process of dividing a population into homogeneous subgroups ("target audiences") to better describe and understand their current behaviors in order to develop messages and to tailor programs to the specific needs of a subgroup.</li> </ul>

**Note.** These definitions have been adapted from a variety of sources and parallel the definition of constructs purported by McCormach Brown et al.<sup>8</sup>

of commercial marketing technologies to the analysis, planning, execution, and evaluation of programs designed to influence the voluntary behavior of target audiences in order to improve their personal welfare and that of their society.<sup>77</sup> Social marketing is designed to change behavior at the aggregate level and includes a series of interrelated concepts: 4 *Ps* (Product, Price, Place, and Promotion), marketing mix, and audience segmentation (Table 2).

**SM as a Priority**

The federal government and health promotion organizations are interested

in SM research. According to R.J. McDermott (personal communication on August 28, 2000):

*The Centers for Disease Control & Prevention (CDC) has provided conference sponsorship money for nearly all of the 10 social marketing in public health conferences that originated at the University of South Florida (USF) and have been held in the Tampa Bay area since 1991. The Tenth Annual Social Marketing in Public Health Conference took place in June 2000 and attracted in excess of 300 people from about 38*

states and several foreign countries. The CDC's input has included speakers and funds from \$5,000 to \$10,000 per conference. The CDC and the Association of Schools of Public Health (ASPH) have cosponsored the National Training Center for Social Marketing (NTCSM), also an entity of the USF, through a cooperative agreement since 1997. Cumulative funding has been in the neighborhood of \$1 million. Selected USF faculty members have trained CDC staff and Association of State and Territorial Directors of Health Promotion and Public Health Education (ASTDHPPE) personnel in social marketing principles. The NTCSM is currently developing a CD-ROM, under the sponsorship of another CDC/ASPH cooperative agreement that will give public health professionals access to the components of the **Thinking Like A Marketer** curriculum, another product of the NTCSM.<sup>9,10</sup> CDC also provided about \$30000/year over a 3-year period to USF, who, in conjunction with Best Start Social Marketing, Inc., launched the **Social Marketing Quarterly**, the only journal whose focus is entirely devoted to social marketing. This journal is now in its 6<sup>th</sup> volume. Finally, CDC staff members, Parvanta and Freimuth,<sup>11</sup> contributed an article titled "Health Communication at the Centers for Disease Control & Prevention," to the Jan-Feb 2000 special issue on social marketing of the **American Journal of Health Behavior**.<sup>12</sup>

### SM Research Plan

The purpose of this paper is to advance and promote procedures (a specific research plan) for developing and evaluating the efficacy of tailored health messages based on SM principles. The research plan includes definitions and operationalization of SM constructs, use of SM principles as a conceptual framework for research, and application of both qualitative and quantitative procedures in a sequential process to develop and test the efficacy of a health message. The paper focuses on the integration of qualitative and quantitative procedures, but concentrates primarily on the use of quantitative procedures to enhance replicability and external validity.

Figure 1 presents a 3-phase research plan to develop and test the efficacy of a tailored message. (The research plan

**FIGURE 1**  
**Three Phases of Social Marketing Research**

Phase I	Phase II	Phase III
Preproduction/ Prepromotion	Media Development and Testing	Application and Evaluation

presented should not be confused with other applications and extensions of SM principles such as that presented by Bryant,<sup>13</sup> although it seems possible that the research plan can be integrated in such instances.) Phase I, preproduction and prepromotion, is the planning and the selection of strategies and channels of communication. Phase I includes a variety of procedures to ascertain how to attract consumers to accept the goods (or product) being marketed, and this phase can be equated with both qualitative and quantitative research procedures. Examples of qualitative procedures include focus groups as well as intercept and key informant interviews. Social marketers also advocate quantitative procedures (eg, consumer survey techniques) as an initial preproduction and prepromotion step.

Phase II includes media development that is based on the preproduction and prepromotion results. Phase II also includes testing (eg, theater testing) to test media for such qualities as aesthetic appeal and message content.

Phase III is application and evaluation. Application is accomplished through any variety of means (eg, public service announcements, flyers, brochures, posters, table tents, T-shirts, and stickers) in order to motivate the public to take specific actions. Evaluation consists of ascertaining whether the SM strategies resulted in the desired outcomes (eg, increased program attendance or behavior change such as loss of body weight or a decrease in body mass index).

The foundation for a multiphasic research plan has been laid by the special, landmark issue of the *American Journal of Health Behavior*.<sup>12</sup> This issue is instrumental in doing the following: (a) establishing the prominence of SM in health behavior research; (b) defining SM prin-

**TABLE 3**  
**Examples of Descriptive Statistics Applied to Social Marketing**

Construct/Variable	Mdn	Mode
<b>Product</b>		
Tangible		
flexible program hours	4.00	5.00
convenient program location	4.00	4.00
friends also participating in program	4.00	4.00
program reminders	3.00	4.00
grand Mdn/Mode	3.75	4.00

**Note.** Items under Tangible Products are measured on a Likert-Type scale: 1 = definitely not improve participation, 2 = probably not improve participation, 3 = uncertain, 4 = probably improve participation, and 5 = definitely improve participation.

Construct/Variable	Ranking by %			
	1	2	3	4+
<b>Promotion</b>				
Incentives				
refund in student fees (\$20 - \$30)	38.8	26.9	16.4	17.9
university credit	37.3	23.9	7.5	31.3
refundable deposit	7.5	6.0	13.4	73.2
t-shirt	6.0	7.5	7.5	78.1
gift certificate	3.0	25.4	31.3	40.3
coupon for alcohol-free activity	3.0	7.5	14.9	74.6

**Note.** 4+ represents rankings 4-6 for incentive variables.

ciples, constructs, and variables; (c) highlighting ethical considerations; and (d) using case studies to demonstrate the application of SM principles. This issue has set the stage for empirical procedures and studies using SM principles and constructs and for application of the phases of SM research described above.

There are only a few Phase I studies that have been published that focus on preproduction and prepromotion and still fewer that focus on Phases II and III, media development and testing, and application and evaluation, respectively. As SM research continues to evolve, it is important to be cognizant of the relationship between using both qualitative and quantitative procedures as part of a total process to evaluate the efficacy of the application of SM principles.

**Phase I Procedures**

**Study 1.** Study 1, conducted by Black and Smith,<sup>14</sup> demonstrates the beginning

of an evolution of the application of qualitative and quantitative procedures to assess the utility of SM principles applied to evaluate an existing program. The questionnaire from this study was developed based on qualitative procedures. A review of the relevant SM and alcohol abuse literature was completed for “domain specification” to develop open-ended questions and to decide on groups of items under a given *P*. Responses to open-ended questions by a sample of the target audience were used to develop items for a questionnaire. The questionnaire was pilot tested twice to refine it and evaluate content, response bias, reading ease, and questionnaire “burden.”

Two partial tables (Table 3) from the 4 tables presented in Black and Smith<sup>14</sup> present findings from the questionnaire. These 2 partial tables, which show results for 2 of the 4 *Ps*, demonstrate the use of quantitative analyses in the preproduction and prepromotion phases

of social marketing. Descriptive statistics were used to identify variables of research importance to "trim" the number of variables to be included in a health message (see **Product** section within Table 3). Medians, modes, and frequencies (ie, percentages) were computed because the data were ordinal (not because of irregular distributions). Likert-type scaled questions with a median and mode of 4 or more ("definitely improve participation" or "probably improve participation") were deemed important. Variables below a median or mode of 4 were not considered important.

The following criterion was used to evaluate frequency data (percentages) based on ranks of variables in terms of their importance (see **Promotion** section within Table 3). Items selected by the sample as their first choice were considered important if they met or exceeded a minimum percentage criterion of 20%. A proportion of 20% or more selecting any given item as their first choice of importance has a phenomenally low alpha considering the probability of a sample ( $n=67$ ) selecting 1 item as most important out of several (eg, the 6 items shown in the **Promotion** section within Table 3 listed under Incentives).

The results of this analysis indicated that the Tangible *Product* characteristics related to an existing program of most importance for the entire sample were flexible program hours, convenient program location, and friends' also participating in the program. The *Promotion* variables of most importance for attending an alcohol reduction program were refund in student fees (\$20 to \$30) and university credit.

Audience segmentation was conducted to determine if the same SM variables would apply to the various subgroups. Segmentation in this study was done based on classic variables noted historically to be of importance in the education research literature (ie, gender and age) and in the alcohol literature (ie, amount of alcohol consumption because there are idiosyncrasies in behaviors according to drinking level) in order to target those most at risk due to limited human and economic resources. Although not shown in Table 3, these analyses showed that in addition to variables identified under each of the 4 *Ps* above for the entire sample, heavy drinkers (drink at least once/week

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with >5 drinks/sitting) could be targeted by adding 4 additional variables to the list in Table 3. For example, the variable that would be added under *Product* was program reminders, and *Promotion* was a communication theme with respect to program convenience.

The results of the study indicate how the marketing mix of the 4 *Ps* for a subgroup change in comparison to the total population. This study shows the application of qualitative procedures to develop a questionnaire and the use of quantitative procedures to develop the marketing mix.

**Study 2.** The next evolution in Phase I research was to build upon the procedures used in Study 1. Unpublished Study 2 was conducted by Black, Blue, Coster, and Chrysler, which included 270 adults enrolled in a national commercial, self-administered, home-based, weight-loss program. The first task was to develop a social marketing questionnaire for a weight-loss program. "Domain specification" occurred by reviewing both the weight-loss and SM literature and based on familiarization with the contents of the program. Demographic and psychographic questions were included along with questions related to health status. Content validity was established by an expert in SM and 2 representatives of the weight-loss program's consulting team confirming groupings of items by the investigators under each the 4 *Ps*. Participants in a local, commercial weight-loss clinic reviewed the questionnaire for readability, clarity, and response bias. The test-retest reliability was .81, and reading level was grade 5.6.

The next step during Phase I was to apply inferential statistics in addition to the descriptive statistics used in Study 1. Inferential statistics were included for the following reasons: (a) to enhance replicability of results by relying on empiricism, (b) to further systematically re-

**TABLE 4**  
**Analytic Plan Based on Social Marketing Principles**

Steps	Procedures	Purpose
1	Descriptive Statistics (Median, Mode, and Proportion)	Selection of Important Social Marketing Variables Under a Given <i>P</i>
2 & 3	List-wise Factor Analyses and Standardized Cronbach Alpha Coefficients	Empirically Group and Confirm that Items were under the "Proper <i>P</i> " and Collectively Represented a <i>P</i>
4	Backward Elimination Regression Analyses	Identification of the Most Parsimonious List of Variables that Contribute to the Marketing Mix (4 <i>Ps</i> ) and Segmentation of the Sample/Population According to Demo- and/or Psychographic Variables
5	Kendall's Coefficient of Concordance	Ascertain whether the Variables Identified for a Population also are Appropriate for a Segment of the Population
6	Tabling the SM Variables	Identify the Fewest Number of Variables to Include in a Marketing Message

duce variables to a smaller, more manageable number for the marketing mix, and (c) to address functional relationships between the social marketing and response variables. Table 4 presents an analytic plan consistent with (a) to (c) above and with social marketing principles. The Table presents the statistical procedures and the purpose of each statistic.

Just like Study 1, Study 2 began with Step 1, establishing the domain for the questionnaire, questionnaire development and evaluation, and descriptive statistics, as an initial step, to decide on the variables of importance within a given *P*. The remainder of the steps shown in Table 4 includes factor analyses, Cronbach alphas, multiple regressions, and Kendall's coefficients of concordance. Factor analyses and Cronbach alphas were used to confirm the grouping of variables under a given construct of *P*. As shown in Section A in Table 5 for a variable to be considered important and to confirm groupings, it had to meet the following criteria: (a) median and mode  $\geq 3.0$ , (b) factor loading  $\geq .40$ , (c) eigenvalue  $\geq 1.00$ , (d) commonality  $\geq .50$ , (e) percent variance explained  $\geq 50\%$ , and (f) Cronbach alpha of  $\geq .70$ . Items under *Product* were rated on 2 dimensions, Importance and Confidence. Measures of

these 2 dimensions were multiplied and factored under the 2 constructs. Items from the 2 dimensions that respondents rated as "most preferred" also were included in the factor analyses.

Step 4 was backward elimination regression analyses to determine which *Ps* to emphasize in a message for the total sample and segments. The upper portion of **Section B** in Table 5 shows the results of the initial regression model and the bottom portion (**Section B**) of the table results for the final model. Change in BMI was regressed onto demographic and psychographic variables as well as constructs identified in the factor analyses, including individual items separately that were most preferred. Demographic and psychographic variables were included to examine the necessity of audience segmentation, and the constructs and most preferred items were used to develop the marketing mix. Variables that contributed significantly individually in the total sample analysis also were included in the analyses of the segments. The initial analysis model for the total sample indicated that it is necessary to segment on marital status because the beta weight was significant and the 2 subconstructs of importance were positive core product

and tangible product, and one most preferred item, "use privately." The final model for the total sample confirmed that only the 2 subconstructs were of importance and it was necessary to segment. The regression analyses for the segments revealed the subconstructs to emphasize in the initial model were the same as the ones to emphasize in the final model, positive core product and tangible product for married subjects and tangible product for unmarried participants. The negative sign for positive core product suggests that people who have the greatest change in BMI are less concerned about issues related to product variables compared to those who have lost less weight.

Step 5 was to repeat separate factor analyses for each audience segment identified in Step 4. Independence of rankings of factor loadings under each *P* for audience segment was determined by calculating Kendall's coefficient of concordance.<sup>15</sup> Kendall's coefficient of concordance was used to ascertain whether the marketing mix (or components of the message) would be the same for both segments.

Step 6 was to table variables that met the criteria for retaining a variable for the factor analyses and multiple regressions. **Section C** within Table 5 shows these results. The Xs indicate the variables to emphasize under each construct of *P*. The Table suggests that the variables to emphasize for the total sample and married participants would be almost identical, with exception of 2 variables, "set reasonable weight loss goals" and "use privately." What to emphasize for unmarried participants is completely different from the total sample and married participants. For unmarried participants, the emphasis should be on the following 4 variables only: (a) watching food portions, (b) setting realistic weight loss goals, (c) getting back on track after relapse, and (d) having a fat intake less than or equal to 20%.

### Phases II and III Procedures

**Study 3.** A study by Gries, Black, and Coster,<sup>16</sup> is an illustration of the application of Phases II and III presented in Figure 1. This study focused on alcohol consumption or responsible use of alcohol among college students ( $n=1,433$ ).

**Phase II. Media development.** Two steps were used to develop health message recruitment materials. The first step was

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## ***Two steps were used to develop health message recruitment materials.***

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to use information collected in Phase I. Phase I information, in this particular study, was obtained from Black and Smith<sup>14</sup> and further developed and evaluated based on procedures identified in *Making Health Communication Programs Work*.<sup>17</sup>

The second step involved 3 qualitative procedures, focus groups, in-depth interviews, and intercept interviews in order to evaluate the content and appeal of the message/advertisement.

**Testing.** Results of the qualitative procedures revealed the following as important: (a) Price - present new information to minimize boredom and also avoid lecturing or scolding; (b) Place - offer programs at residence halls on Sunday nights; (c) Product - emphasize altruistic motivation to help friends and also present pertinent, factual information; and (d) Promotion - design flyers, table tents, and table notices that emphasize product benefits and positive program attributes, highlight incentives for attendance, and denote a relaxed, social, and nonlecture format. The marketing mix was used to develop the advertisement.

Short intercept interviews were conducted to evaluate the appeal and efficacy of the recruitment advertisements that were developed. The information collected from the interviews was used for final refinement of the materials.

**Phase III. Application.** Phase III involved the application and evaluation of the marketing materials developed and tested during Phase II. A "treatment" and "comparison" residence hall were used to compare the efficacy of flyers, table tents, and table notices developed using social marketing principles versus those developed intuitively and used by the health center in the past. Participants completed a postprogram questionnaire eliciting reactions to the program recruitment materials.

**Evaluation.** The efficacy of the recruitment materials was evaluated in 3 ways: (a) number who attended each program, (b) drinking behavior of those

**TABLE 5**  
**Examples of Inferential Statistics to Identify Variables to Emphasize in the Social Marketing Mix**

<b>Section A</b>							
<b>Variable</b>	<b>Median</b>	<b>Mode</b>	<b>Factor Loading</b>	<b>Comm-nality</b>	<b>Eigen Value</b>	<b>Percent Variance</b>	<b>a<sup>a</sup></b>
<b>Positive Core Product</b>							
Gain energy	4	4	.778	.605	3.994	57.100	.873
Sense of accomplishment	3	4	.770	.592			
Gain flexibility in movement	3	4	.765	.585			
Prevent health risk	4	4	.760	.577			
Fit into clothes	4	4	.749	.562			
Improve health	4	4	.738	.544			
More attractive	3	4	.727	.529			
<b>Tangible Product</b>							
Back on track after relapse	3	3	.796	.634	2.344	58.590	.759
Watch food portions	3	3	.764	.583			
Fat intake ≤ 20%	3	3	.758	.575			
Set reasonable weight loss goals	3	3	.742	.550			

**Note.** Medians and modes are based on social marketing variables with reference to change in body mass index {BMI = wt. (kg)/[h(m)<sup>2</sup>]}. Positive Core Product is the multiplication of “value” and “expectancy” where 1 is very unimportant/not confident, 2 somewhat important/somewhat confident, 3 is important/confident, and 4 is very important/very confident. Positive Tangible Product is the multiplication of “cognitive value” and “behavioral value” where 1 is not important/never, 2 is somewhat important/rarely, 3 is important/frequently, and 4 is very important/all the time.

<sup>a</sup> Standardized Cronbach alpha coefficient.

<b>Section B</b> <b>Construct/Variable</b>	<b>Standardized Regression Coefficients (β)</b>		
	<b>Total</b>	<b>Married</b>	<b>Unmarried</b>
<b>Initial Model</b>			
Positive Core Product	-.27**	-.21*	-.12
Negative Core Product	-.09	-.11	-.14
Tangible Product	.15	.51**	.45*
Exercise Daily	.32**	+	+
Use Privately	.16*	+	+
Unemotional Eating	.04		
Program Flexibility	.08		
Healthy Weight Loss	.09		
Marital Status	-.26**		
<b>Final Model</b>			
Positive Core Product	-.25**	-.21**	
Tangible Product	.53**	.53**	.35**
Marital Status	-.15**		

**Note.** The constructs entered into the regression equations were the factors unique to total sample and each of the two segments (i.e., married and unmarried). R<sup>2</sup> = .46, .42, and .48 for the final models for the total sample, married, and unmarried, respectively.

(Cont'd)

**TABLE 5 (Cont'd)**  
**Examples of Inferential Statistics to Identify Variables to Emphasize in the Social Marketing Mix**

+ Means that variables that contributed significantly individually in the total sample analysis were included in the tangible product construct for the married and unmarried segments and for all final models.

\*  $p < .05$ . \*\* $p < .01$ .

Section C		Total	Married	Unmarried
Social Marketing Concept	Item Retained			
<b>Positive Core Product</b>				
	Improve health	X	X	
	Prevent health risk	X	X	
	More attractive	X	X	
	Fit into clothes	X	X	
	Gain flexibility in movement	X	X	
	Gain energy	X	X	
	Sense of accomplishment	X	X	
<b>Tangible Product</b>				
	Watch food portions	X	X	X
	Exercise daily	X	X	
	Set reasonable weight loss goals	X		X
	Back on track after relapse	X	X	X
	Fat intake $\leq$ 20%	X	X	X
	Use privately	X		

who attended, and (c) campuswide and nationwide attendance projections. Table 6 is an adapted table from Gries et al.<sup>16</sup> This Table shows the distribution of program attendance by class rank and experimental condition (see **Section A** within Table 6) and attendance by drinker classification for the treatment hall (see **Section B** within Table 6). Contrasted was program attendance of the treatment hall with attendance results of historical control halls; historical control halls received in the past the same intuitively developed recruitment materials as the comparison hall. A significantly higher percentage of participants attended the treatment versus the comparison or historical control programs. As desired, everyone attracted to the treatment hall program was a drinker, and over half were moderate/heavy to heavy drinkers.

Based on the rate of improvement in the treatment hall of 2.75% (which is the ratio of the proportion of students for each comparison hall divided by the corresponding proportion of the treatment hall), a (projected) campuswide recruitment would

yield between 207 to 243 students, and a nationwide recruitment would gross between 28,715 to 45,085 students. The cost of the program, which was a minimal intervention because it is simple, easy to administer, and inexpensive, was \$4.87 per respondent. Thus, the use of SM principles for recruitment of at-risk students seems to be cost-effective and worthwhile. If commercial marketing standards of a 3% to 5% increase in sales can be applied as a valid indicator of success for a SM intervention, the results of this study were in compliance because hypothesized attendance rates of 3% to 4% did not significantly differ from this criterion.

#### CONCLUSION

The 3 studies presented in this paper suggest that a systematic research plan based on social marketing principles can be used to develop and test tailored health messages. Social marketing principles and constructs were useful in identifying salient variables that could be incorporated into a tailored message. Qualita-

**TABLE 6**  
**Distribution of Program Attendance and Drinkers Classified by**  
**Quantity and Frequency of Alcohol Consumption**

Section A		Number Attended			
Class	Treatment Hall	Control Hall	Historical Hall 1	Historical Hall 2	Historical Hall 3
Freshman	13	0	2	2	2
Sophomore	2	0	1	1	5
Junior	1	0	0	2	0
Senior	1	0	0	0	0
<b>Total</b>	<b>17</b>	<b>0</b>	<b>3</b>	<b>5</b>	<b>7</b>

  

Section B		
Drinker Classification	Definition	%
<b>Abstainer</b>	• Do not drink.	0.0
<b>Infrequent</b>	• Drink 2 or fewer drinks once a month.	17.6
<b>Light</b>	• Drink 3 or fewer drinks each time once or twice a month, but less than once a week.	5.0
<b>Moderate</b>	• Drink 4 drinks each time once or twice a month, but less than once a week or two or fewer drinks each time at least once a week.	24.0
<b>Moderate/Heavy</b>	• Drink 5 or more drinks each time once or twice a month but less than once a week or 3-4 drinks at least once a week.	24.0
<b>Heavy</b>	• Drink 5 or more drinks at least once a week.	29.4

tive and quantitative procedures were integrated into the 3 phase social marketing research plan for health messages: Phase I — preproduction/prepromotion, Phase II — media development and testing, and Phase III - - application and evaluation. Phases I and II incorporated in the examples included domain specification, questionnaire development, questionnaire refinement, psychometric evaluation, and the use of descriptive and inferential statistics. The descriptive statistics used were medians, modes, and percentages with a criterion reference. The inferential statistics were factor analyses, Cronbach alphas, multiple regressions, and Kendall’s coefficients of concordance. Phase II also involved triangulation of methods, combining the quantitative procedures with focus groups, in-depth interviews, and intercept interviews. Phase III further showed the novel use of statistics to evaluate message efficacy according to specific behavioral criteria.

A theoretical perspective, in this case principles related to social marketing constructs, should guide analyses and development of an analysis plan. The

benefits of a formal research plan are to provide useful information for message development and to evaluate message efficacy. Such a plan also provides the opportunity to evaluate the potential of social marketing principles in health behavior research. Specifying variables under a given *P* offers more relevant information to program planners and would allow for better comparison of research findings. Triangulation of methods increases validation of social marketing constructs, and the use of statistical procedures increases replicability and offers a prescribed, systematic means to reduce data and to concentrate on the marketing mix for the entire samples as well as the audience segments.

The collective evidence from these 3 studies that focus on message development indicates that social marketing principles hold promise for marketing health promotion at the same criterion of success established for commercial marketing. These studies also indicate that social marketing principles seem to be relatively efficacious even when applied to a disruptive, unhealthy, illegal behav-

ior such as alcohol consumption on a university campus and are applicable to overnutrition priorities such as body weight reduction. This is in distinct contrast to commercial marketing where the goal is often to influence consumers to purchase a highly desirable and competitive product or create a need for the purchase of a superfluous one. In addition, the third study results used as an example in this paper showed that those who needed the program the most were recruited versus those who, according to self-report, were abstainers. Social marketing seems to have potential for attracting those most in need of intervention, which is an important triage priority with ramification for cost-effectiveness and prudent use of available resources.

What is necessary at this juncture is continued application and refinement of multiphasic procedures presented in this paper. It is important to operationalize and focus on the 4 *P* constructs, triangulate qualitative and quantitative methods, analyze data according to social marketing principles, and develop an analytic plan that enhances replicability and comparability of social marketing outcomes/results to determine the degree to which social marketing principles will make a difference as a means to improve the public's health.

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