

WHOSE BEHAVIOR IN WHAT HEALTH MARKETPLACE?

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A number of behavioral scientists and health educators have been engaged for some time in attempts to explain and/or influence human behavior regarding health and illness. Behavior directed toward preserving health is called health behavior.¹ Behavior subsequent to the perception of symptoms and directed toward diagnosis and treatment is called illness behavior.²

It has been suggested that techniques used to market products and services can be used to help individuals fulfill their needs in both prevention and amelioration of illness as well as in the alleviation of other social problems.³ In this paper I shall review some principles that have emerged from studies of health and illness behavior with special attention to their implications for the notion of health consumers in a health marketplace. The marketplace concept requires a focus on suppliers as well as consumers; therefore I shall attempt to explicate some important aspects of the roles of both consumers and suppliers in the health marketplace. The roles of behavioral scientists, educators and marketing specialists in this marketplace will also be considered along with some historical lessons.

Health and Illness Behavior

Theories and research attempting to explain peoples' behavior with respect to health and illness have focused on:

1. information available to people regarding illness and potential action to avoid illness,
2. peoples' beliefs regarding the information,
3. perception of personal vulnerability to particular diseases, and
4. perceived or real cost and effort involved in the needed action to avoid or ameliorate the illness.⁴

Although there are limits to the public's knowledge of potential health preserving actions, especially in areas of the world with limited public communication systems, substantial populations are at

least aware of many such potential actions. In countries with literate populations, persons who smoke heavily, drink heavily and travel in motor vehicles without using seat belts have at least heard that they are endangering their health.

How strongly they believe the information is open to question but it is evident that many people deny their personal vulnerability. For example, when half of the respondents in one survey were asked to rate their own susceptibility to diseases such as tuberculosis and cancer, and the other half were asked to rate "others'" susceptibility, "others" consistently were rated as the more susceptible.⁵ Denial of vulnerability in the presence of knowledge is nowhere more evident than among physicians. Although physicians more often know about the importance of early detection of cancer and that the prognosis need not be fatal, they are found to delay seeking treatment about as often as the lay population.⁶

Failure to take action to protect health where people have knowledge of potential danger and of available ameliorative actions is also sometimes the result of the costs in time, effort, money, or simple inconvenience involved in taking action. For example, discomfort and inconvenience were discovered to be important factors in the nonuse of seat belts in cars.⁷

Surveys regarding a wide variety of health related behaviors indicate low individual consistency over the range of behaviors studied.⁸⁻¹⁰ The fact that people are inconsistent is not front page news. What is surprising to me is that persons acquainted with human resistance persist in the belief that major inroads in the prevention and amelioration of a wide variety of human maladies can be accomplished by education, marketing or other attempts at changing diverse sets of behaviors in the general population.

Behavior Change Strategies

Attempts at changing health and illness behavior have been marginally successful at best and many have failed. In those studies with good experimental design, advertising — so widely used by marketers in attempts to sell products — has been shown an abysmal failure in changing health behaviors. For example, a double-blind study of the effect of television messages on seat belt use was done on a split-cable television system used for real-world marketing studies. Six messages were produced, each directed at specific audiences, on the basis of prior research. One was judged best and another in the top ten among public service entries of advertising clubs in Philadelphia and New York respectively. Each message was shown during programs appealing to audiences that were the targets of the messages. A total of 943 showings was presented on one cable of the dual cable system in a 9 month period — the equivalent of a \$7 million campaign on a national basis.

Belt use by drivers in their cars was checked daily by observers who were rotated among sites throughout the test city for 11 months, including one month prior to and one month subsequent to the television campaign. Belt use observations were matched to experimental and control cables by matching vehicle license numbers to motor vehicle administration files, obtaining owner names and addresses, and subsequently matching these names and addresses to those in cable company files. The observers were not told the purpose of the study, and the people in the community did not know about the split cable system. This double-blind feature is a necessary precaution to prevent known biases that can occur. Comparison of belt use by drivers from households on the experimental and control cables, as well as those on neither cable, revealed that the television campaign had no effect on belt use.

An experiment in three California communities was directed toward changing heart-disease "risk factors" such as smoking and cholesterol. The study design allowed the comparison of: (1) a multimedia campaign in one community, (2) that campaign plus intensive personalized behavior modification among high risk persons in a second community, and (3) no treatment in the third control community. Results after the first year indicated effects of the media campaign alone of only a few percentage points compared to the control community.¹²

The lack of substantial effect of mass communications should not be surprising to marketers. Most advertisers of products consider advertising successful if they obtain a few percent increase in a particular market.¹³ Creating a market where none existed is usually very difficult. When the "product" is a behavior change from a pattern established over many years by millions of people, the task is impossible within any reasonable bounds of media access.

Recent studies of attempts at changing behavior of motor vehicle occupants raise serious doubts that mass attempts at manipulating individual behavior are nearly as easy or effective as is assumed by advocates of behavior modification. The U.S. Department of Transportation issued a standard that required cars manufactured after January 1, 1972 for sale in the U.S. to have a buzzer-light system to be activated if the seat belt was not more than four inches from its normally stowed position when the car was in forward gear, as an optional alternative to passive restraints (those requiring no action). Except for a few thousand cars containing air bags that inflate automatically in severe crashes, absorbing damaging energy normally transferred to occupants, manufacturers chose to install the buzzer-light system in approximately 15 million cars manufactured in 1972-73, perhaps the most massive case of deliberately applied behavioral conditioning every attempted. Yet two studies involving unobtrusive observation of drivers in equipped and nonequipped

1972 vehicles showed no significant difference in belt use between these groups observed at the same times and places.¹⁴⁻¹⁵ A subsequent federal standard, effective in 1974, required a belt system linked to the starter and seat sensors so that the car would not start unless belts were extended or latched. Belt use was increased significantly by this device, but over 40 percent of drivers had found ways to avoid using the belts only a few months after purchase of the cars.¹⁵

Before the advocates of behavioral conditioning rise to say that the best principles of conditioning were not applied, let me assure them that I know that, in classical experiments, intermittent rewards are more likely to evoke the desired behavior than punishment. But I do not think that belt use would have been increased substantially if a cookie had been coughed out of the dash board on an intermittent schedule when belts were used. Even if such a system would have some effect, I would not expect many owners to replenish the cookie supply. The point is that the application of behavioral conditioning on a large and sustained basis is a difficult and costly business even if people do not rebel. Complaints to Congress about the buzzer and starter interlock system resulted not only in repeal of those standards but standards requiring passive restraints were placed in jeopardy (Congressional Record, 1974). At last count, belt use in interlock equipped cars was 33 percent in urban areas.¹⁶

More personalized approaches to health behavior change have been more successful, although hardly spectacularly so. In the three-community California study, the community with the combined media and personalized approach for persons at "high risk" of heart disease had a 23 percent reduction in claimed smoking behavior relative to the control community and a 3 percent reduction in average serum cholesterol among those at "high risk" while cholesterol was increasing slightly among "high risk" persons in the control group.¹²

Other controlled experiments have produced similar results without the mass media approach. Increased visits to a cervical cytology clinic occurred among urban ghetto residents visited by a resident of the community who explained the various aspects of vulnerability, the importance of early detection, the testing procedure and the time and place of a free clinic. A control group received discussion of another health matter and incidental mention of the free clinic. Both groups were offered free baby sitting and free transportation to the clinic. It is of interest to note that visits to the clinic were not related to changes in perceived vulnerability to cervical cancer as measured by questionnaires during a preceding and subsequent interview. And, although more women in the experimental group than in the control group obtained examinations, more than half of the experimental group did not obtain an examination.¹⁷

Similar increases in preventive measures were found when families were provided personalized comprehensive pediatric care where it had not been available. Experimental and control groups of families without a regular physician were randomly assigned from patients using a hospital emergency room. The experimental families were offered a regular physician to provide both preventive and illness care while the control groups continued to receive care episodically from emergency rooms, outpatient departments and private physicians. After three years the children's immunization records, tuberculin testing, and use of fluoride were significantly higher in the experimental group. However, questionnaire indicators of general attitudes regarding health had not changed among the mothers.¹⁸

These findings suggest that personalized approaches have some benefits although we don't know exactly why they work. Since perceived vulnerability and attitudes apparently were not changed, even in those cases where behavior did change, we need to revise either our measuring instruments or our theories of behavior. A marketing researcher has expressed a similar view regarding buyer behavior. Reviewing research on the subject, he concluded that no specified sequence of knowledge, attitude, and belief changes accompanies individual adoption of a product.¹⁹ It is doubtful that marketers know any more about changing behavior than do behavioral scientists and educators.

Even where we know how to change at least some people's behavior, there are severe limitations to such strategies on a mass basis. To provide personalized behavior modification or counseling to every vulnerable person on the large variety of potential diseases and injuries and the known means of avoiding them would require an army of knowledgeable counselors and an accompanying budget that is unsupportable in any foreseeable economy. Fortunately strategies that do not require mass individual behavior changes are available to reduce disease and injury substantially.

Alternative Strategies

Public health strategies that require individuals to take special action to protect themselves are called "active" strategies while those that work automatically, irrespective of human behavior, are called "passive" strategies.²⁰⁻²¹ If I may put the matter rhetorically, which are the more effective? If faced with the choice today, would we treat our water to eliminate harmful bacteria at the source of supply or would we launch an advertising campaign to persuade people to boil their water? Would we require milk suppliers to pasteurize milk or would we send an army of health educators out to teach people to heat their milk to kill bacteria?

Somehow in recent years we have forgotten the lessons of history

and have defined current health problems as behavioral problems.²² In its worst form this definition has taken a moralistic, blame-assignment tone as in the phrase “self-inflicted” used to refer to the harmful results of cigarettes, alcohol, and motor vehicle crashes.

To my knowledge there has seldom if ever been a disease or injury where human behavior was not involved in exposure and/or susceptibility.²³ But the reductions of many of the maladies that no longer plague us were attained without changing the individual behaviors of large numbers of people. They were often reduced automatically by passive strategies — water treatment, pasteurization, iodized salt, shielded electrical cables, automatic fire sprinklers.

Failure to control many current health problems is at least partly the result of failure to recognize the range of sources of damage and the range of options available to control the damage.²⁴⁻²⁵ If we must persist in the notion of a “health market place,” the suppliers of damaging agents deserve at least as much attention as the consumers of damage. For example, the recent reduction in motor vehicle related deaths associated with the imposition of 55 mile per hour speed limits has led many people to believe that greater emphasis on this and other aspects of driving behavior is the best strategy to reduce losses.²⁶ However, consider the thousands of lives that would have been prolonged had vehicles capable of speeds greater than 55 miles per hour never been manufactured for any but emergency purposes, not to mention the savings in fuel and raw materials. From the earliest days of the automobile, there were warnings of the damaging consequences of increasing speed capability but the warnings were unheeded.²⁷

It is becoming increasingly evident that many hazards to health in industrialized countries are the result of lack of knowledge or concern on the part of those who place those hazards or allow them to be placed in our environment. Man-made agents in foods, drugs, water and air are suspected or known to cause or exacerbate cancers and various other diseases. Machines, tools, work places, dwellings, recreational facilities and products, and transportation facilities and products are often designed with little or no attention to the hazards they pose to users.

Consider a few examples in the area of motor vehicle injuries. Vehicles are incapable of sufficiently protecting occupants from crash forces that can be generated from their designed-in speed capabilities. Sharp points and edges on exteriors injure pedestrians, bicyclists and motorcyclists. Our roadsides are lined with rigid, often man-made, structures that maim and kill occupants of the vehicle which strays a few inches or feet from the roadway, structures that would be seen as obvious hazards if similarly placed along airport runways.

The active strategies that attempt to inform every person about

such hazards and behaviors to avoid them are not only unrealistic in terms of what we know about the hazards and the behaviors, they divert attention and efforts from the passive strategies that have greater likelihood of success. If for no other reason than the numbers of people involved, changing the knowledge and behaviors of a few tens, hundreds or thousands of designers, producers, and suppliers is more probable than changing the knowledge and behaviors of millions upon millions of consumers.

Roles and Responsibilities

Too often the discussion of these issues is reduced to the question of who is to blame. It is clear that some human damage occurs from use of products by consumers in ways not intended by the products' designers and producers. It is equally clear that some designers and producers have knowingly marketed hazardous products. The liability of any of these persons is a matter for the courts to settle. Even if a product is misused, to neglect efforts to protect the user as well as others who may be involved is not the mark of either humane responsible societies or governmental executives.

Liability is an issue that should directly concern the health professional only when involvement in questions of liability may result in reduced hazards. Our concern, whether as scientists, educators or marketers, is to identify and attempt to change those factors that are most amenable to reduction of human damage. If we are negligent in considering the full range of options available to ameliorate damage, then we must share in the blame for that damage.

It is understandable that anyone possessed of certain skills and concerned with health matters would want to apply those skills to ameliorate health problems. Behavioral scientists want to study behavior, educators want to educate, and marketers want to market. However, we have too often become promoters of points of view and techniques rather than seekers after solutions to problems. For example, three generations of behavioral scientists, educators and others working in "highway safety" were active parties in promoting an almost sole emphasis on changing drivers to avoid "accidents". Only rarely did any of these point out the severe limitations of such an approach,²⁷ and many now resent the increasingly successful current efforts to require less damaging vehicles and environments.

This is not to say that behavioral scientists, educators, and marketers have no role to play in the amelioration of current public health problems. From behavioral scientists we need better studies on the decision making processes in both private and public organizations that lead to increase or decrease in hazards to health.²³ When problems are ill-defined as behavioral problems, behavioral scientists must be more honest than many have been about the prospects of changing the behavior of large numbers of people. When behavior

change or other strategies are attempted, we should insist on the most rigorous scientific research into their effectiveness and unanticipated consequences.

Educators must also be aware of the limitations of educating everyone on the numerous and diverse hazards to health. Diverting money and effort into large scale health education programs when alternative strategies would be more effective is counterproductive. Educational efforts based on impeccably sound information should be directed to those persons whose decisions contribute to the hazards or fail to contribute to their amelioration. Some producers and suppliers of hazards are unaware of the consequences and will withdraw or change products when so informed. Even if the decisions are not changed as a result of the education, the decision maker cannot plead ignorance and, in many cases, may be legally liable for knowingly contributing to or allowing hazardous conditions.²⁸

Marketers have often been actively involved in marketing hazardous products. Some marketing firms refuse to sell products such as cigarettes, but most will take any account; many fight any attempt to restrict what they can say or do to promote such products. Sometimes products have been made more hazardous or less advantageous to health to make them more saleable. It seems to me that the first priority of marketers interested in public health would be to change the behavior of their colleagues, and marketing professors could educate their students regarding the consequences of such marketing practices.

We all have roles to play in improving public health. By careful consideration of the options available for particular improvements, we can see more clearly where our contributions can be made and avoid those roles that are more hindrance than help.

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