

*The public health worker is action-oriented. He wants to apply knowledge in the form of organized programs involving many people. Yet more and more he realizes that obtaining the participation of these individuals is often not simple or easy, and can be extremely frustrating. How can they be motivated to take necessary action? This paper indicates what has been found by some social scientists.*

## **WHAT RESEARCH IN MOTIVATION SUGGESTS FOR PUBLIC HEALTH**

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THE PENDULUM of professional opinion swings first this way and then that, making fashionable today what was unfashionable, even unknown, yesterday. The time when the social or behavioral sciences were not part of the culture of public health is well within the memory of everyone now working in the field. In those days behavioral scientists, in self-defense, were required to proclaim long and loud that they had much to contribute to public health programs. The pendulum has now swung the other way. In many circles behavioral science is now fully recognized as an important adjunct to programs. In some circles behavioral science is regarded almost in the role of savior. From Pariah to Messiah in ten years. Public health may be suffering from a new disease called "behavioral scientitis." The epidemiology of this condition needs more study. In these circumstances it is necessary to proclaim that while behavioral science does indeed have a needed contribution to make to public health practice, it takes its place alongside the contributions of other disci-

plines. Behavioral science is neither Pariah nor Messiah.

Before proceeding, a brief word should be said in anticipation of an almost inevitable question. Since the advent of Motivation Research, public health workers have been asking whether our large corporations and advertising concerns have already solved the kinds of problems facing us in public health. Has the advertiser learned so much about motivation that he has been enabled thereby to induce large portions of the American public to buy products that they would not buy if Motivation Research had not been done? Without taking the time to consider this question fully, a brief analysis of the goals and methods of the advertiser will show that he rarely needs to reach a large proportion of the public. It will also show that he is frequently dealing with a population ready to act without his urging.

Consider briefly, the goals of commercial enterprise. Even the most far-flung industrial giant rarely needs to capture more than 50 per cent of its

potential market to show huge profits; often 1 per cent will do nicely. Health workers, on the other hand, know that for the control of certain diseases, such as smallpox, about 70 per cent of the market must be obtained; to control polio 100 per cent of the market should be captured. In the chronic diseases and in mental disorders equally large proportions of people must be reached to assure effective control. Thus, in public health, goals are necessarily set higher than in commercial enterprise.

Now, it is important to note that advertisers frequently deal with a motive that people are known to have such as a desire for food or transportation. In this situation the main requirement for selling is for the advertiser to provide some incentive or appeal for acquiring his product rather than his competitor's. Frequently used incentives include free samples, colorful packages, and the like. The health agency, on the other hand, more frequently deals with clients who may not be motivated, especially when they are not currently suffering from some illness; and the task here may involve teaching new motives, a task which is much more difficult than that of selecting an appropriate incentive or appeal.

Consider the kinds of action consumers are urged to take in the two fields. The advertiser normally has it within his power to make the act of purchasing a product simple, convenient, and pleasurable; he may even offer prizes or free samples. The health worker, on the other hand, is faced with the more difficult task of asking people to submit to procedures that are often inconvenient, painful, expensive, time consuming, and difficult to perform.

One additional point may be made. It is rarely possible to test the validity of a particular motivational finding in the commercial world, because the introduction of a new campaign appeal by an advertiser is usually accompanied

by changes in other parts of the campaign as well. Thus, he may advertise much more intensively; he may employ new media; he may change his package design; and he may offer prizes. Since all these important aspects of the campaign are variables, it is not possible to attribute an increased volume of sales to any particular one.

This too brief discussion of Motivation Research may be concluded with the observation that in view of the past successes of public health in the difficult job of controlling disease, we may have more to teach commercial researchers than we can learn from them.

### Principles of Motivation

Returning to the main theme, we may now ask what behavioral science is and what it has contributed to public health. The facts and principles that make up the core of behavioral science, are to a large extent, in the area of the determinants of behavior. Before attempting to apply principles of motivation to public health, let us consider why we are interested in the topic. It is likely that the basic reason for motivation study, whether it takes place in the university laboratory or in the health community, is due to a concern with behavior and the belief that all behavior is motivated. Since we believe that all behavior is motivated, we may expect to understand, predict, and control man's behavior to the extent that we can adequately identify his motivations.

In the health area, motive has been used both in the positive sense of the individual's desires to have or to attain certain things, or on the other hand, it has been thought of in a negative sense as unpleasant or undesirable things to be avoided. There is not the time here to discuss in detail the problem whether health is something sought after positively, or whether the true motive is simply avoidance of disease. Suffice it

to say that there are adequate data available to demonstrate that in many, many situations health motives have the characteristics of threatening events to be avoided or barriers to be overcome. Accordingly, health motive will be used here exclusively in the sense of subjective threats which tend to force the individual to take action to avoid or ameliorate their effects.

Behavioral science has come to see that the widely accepted formula, all behavior is motivated, is not sufficient to account for a specific act of health behavior. The missing element may be derived from the work of Kurt Lewin.<sup>1</sup> Behavior may thus be regarded as a function of a person's motive and of his beliefs about various opportunities for action. This formula has been spelled out by behavioral scientists in the Public Health Service as the first principle of motivation to account for health behavior. This principle states that health behavior is a function of a health motive or threat and the individual's beliefs about various courses of action open to him. Let us consider in detail the two variables—first, health motive or threat and second, the individual's beliefs.

There is reason to believe that two principal dimensions define whether a health event will become subjectively motivating or threatening. They include: first, the degree to which the individual believes that he is susceptible to a given health problem or disease and second, the extent to which he believes that contracting such a disease or problem would have serious consequences for him. The person who fails to believe that he is likely to contract a given illness or that the illness is serious will not be motivated to take action regarding it; he must believe both. In this area of beliefs concerning susceptibility and severity the emphasis is on the person's beliefs and not on objective reality. It is well known that people vary markedly

in their interpretations of so-called objective reality. Moreover, the term "severity" or "seriousness" of illness as used here includes more than the clinical or medical severity of the illness. It may, and often does, include beliefs about consequences in areas such as family relationships, finances, and occupation. Thus, for example, an individual might regard tuberculosis as a disease which is no longer clinically serious but as having profound implications on his family, his finances, his career, and his social relationships.

In summary, then, the motive that determines whether health-related actions will be taken depends upon the degree to which the individual feels threatened by a given disease, where the threat is defined as including both the degree of perceived susceptibility to the condition and the perceived seriousness of that condition should it occur.

In addition to the role of health motive or threat, Principle I states that a certain set of beliefs is required before action of a given kind will take place. In order for an individual to take some given course of action relative to a real or potential health problem, he must not only feel threatened by the health problem, but he must also see one or more courses of action open to him which he believes would either reduce the likelihood of occurrence or the seriousness of the problem. For example, in the area of tuberculosis detection, a motivated individual will not take action to detect tuberculosis unless he believes first, that there are valid means of detecting it, and second, that its detection would, in the long run, reduce the seriousness of the disease for him. Again, the emphasis is on the individual's beliefs and not on what is objectively true.

The theoretical discussion derives in part from a recent monograph by Godfrey Hochbaum on a study in tuberculosis detection<sup>2</sup> and also in part from

a paper by Nancy Starbuck Meltzer on reasons for community acceptance or rejection of programs for the topical application of sodium fluoride.<sup>3</sup> A more comprehensive statement will appear in a forthcoming paper reporting a study of the impact of the influenza epidemic of 1957-1958 on samples of the general public.<sup>4</sup>

In summary, motivation Principle I states that health behavior is determined by the degree to which a person sees a health problem as threatening, having both serious consequences and a high probability of occurrence in his case; and by the extent to which the motivated individual believes that some one of several courses of action open to him will be effective in reducing the threat.

A second principle of motivation is that the individual's motives and beliefs about various courses of action are often in conflict with each other and that behavior emerges as the resolution of such conflicts. Three kinds of conflicts may be described: (1) two motives may compete with each other for dominance; (2) an available course of action to satisfy a motive may be intrinsically frustrating; and (3) the individual may not see any course of action to satisfy an existing motive. Let us consider the three kinds of conflict.

1. When two motives both demand satisfaction, e.g., economic motives and motives related to health, the one having the highest importance for the individual will ordinarily become dominant. Existing data based on limited observations suggest that the set of health motives taken as a whole are perhaps less potent or salient for most people than other kinds, such as motives concerning social approval. As a consequence health-related motives may be superseded by others where the two have a potential for being aroused at the same time.<sup>5</sup> Several observers have made unpublished observations that following times of natural disaster, the

affected population is less likely to call on physicians for routine illnesses than in normal times. This principle of the conflict of motives may be helpful in explaining why lower socioeconomic groups do not appear to be highly motivated in the health area. It may well be that in such groups motives for food, shelter, and clothing override motives for health.

2. Now, even when a person is motivated relative to his health, a conflict may occur to influence ultimate behavior if the action he is required to take is in itself unpleasant, painful, or upsetting. Even if he sees a course of action as potentially effective in reducing the threat, he may not take it if it conflicts with more powerful internal forces.

3. In still another and important type of conflict, the individual fails to accept the health workers' beliefs that effective means do in fact exist to prevent or ameliorate specific conditions and is unable to see any action as being effective. In this case as well as in the case in which an effective action is seen as creating great problems for him, existing experimental evidence suggests that one of two reactions may occur. First, the individual may attempt to remove himself psychologically from the conflict situation by engaging in activities not satisfying his motive but symbolically related to it.<sup>6</sup> Perhaps some of those who have not found a more direct means of satisfying their particular health motives concentrate on giving volunteer service in a health organization. Still further removed from the original unsolvable health problem but nevertheless motivated by it may be an increasing reliance on mysticism and magic.

A second major consequence of the absence of satisfactory means for solving an important health threat is marked increase in fear or anxiety.<sup>6</sup> If the anxiety or fear becomes strong enough, as it will in some cases, the individual

may arrive at a state in which he can no longer think objectively and behave rationally about the problem; in fact, he may even deny that it is important to him. Even if such an individual is subsequently offered a more effective means of handling the problem, he may not accept it simply because he can no longer think constructively about the problem. Therefore one must think very carefully before willfully arousing motives for health action.

A third and final principle of motivation to be considered here concerns a frequently observed characteristic of motivated behavior. The principle may be stated in the following way: Health-related motives may sometimes lead to behavior unrelated to health, and conversely some behavior which has the appearance of being health-related may in fact be determined by motives unrelated to health. The first part of the principle was considered in the discussion on substitute actions in conflict situations. The converse, however, has equally great significance, for the fact that health behavior may occur even where health-related motivations do not exist offers the health worker an opportunity for action. For example, we know that of any group of people voluntarily participating in a health screening program, some proportion will have come for reasons unrelated to health,<sup>2</sup> perhaps on the basis of the social pressure of relatives and friends, perhaps out of encouragement by employers and supervisors. Undoubtedly other health actions may be determined by social motives or by other nonhealth motives. The three major principles discussed may be summarized briefly:

Principle I—Preventive or therapeutic behavior relative to a given health problem in the individual is determined by the extent to which he sees the problem as having both serious consequences and a high probability of occurrence in his case and the extent to which he

believes that some course of action open to him will be effective in reducing the threat.

Principle II—Behavior emerges out of frequent conflict among motives and among courses of action. Where motives themselves conflict and compete for attention, those which have the highest value or salience for the individual will actually be aroused. Health matters—at least in the individual who believes himself healthy—are probably not as potent as are certain other motives, especially economic and social ones. Where the conflict is based on the individual's belief that no available course of action will be effective or where a prescribed course of action is believed to create equally or more serious problems of other kinds, the conflict may be resolved in a variety of maladaptive ways.

Principle III—Health-related motives may not always give rise to health-related behavior, and conversely health-related behavior may not always be determined by health-related motives.

### Implications

The first implication of the three principles for public health work is that long-range attempts to influence the behavior of the consumer in a planned fashion must be based on better knowledge of the nature and organization of his motives and on better knowledge of his beliefs about various action possibilities open to him. In short, successful public health programs must be based on adequate social research. This implication must not be interpreted as suggesting that programs must wait for adequate research; indeed, quite the contrary is true. The public health worker is the clinician for his community just as the practicing physician is the clinician for his patient. The practice of medicine or of public health imposes an obligation to provide the

best care possible using the facts at hand. In this tradition, public health workers must frequently estimate the motives and beliefs of their clients.

Nevertheless, we would be poor clinicians indeed if we did not welcome opportunities for obtaining better data on which to base the programs of the future. And so, the requirement for increased and sound social research in health is not an alternative to current practice but a guide to the future.

A second implication of research in motivation is that much can be done today without major program change to increase public participation in health programs and practices. It is undoubtedly true that some of the failures of individuals to take recommended action are based not on difficulties in motivation, but rather on fairly simple gaps in information, or on misinformation about effective courses of action. The situation relative to polio vaccination is perhaps a good example. Some of the people who now avoid vaccination believing that vaccination is dangerous or ineffective would be helped by accurate information. How such information may best be provided is a question for the professionals. Certainly, it is not simple to accomplish; we realize that people may know a good many things about detection and cure of diseases and still fail to accept this knowledge as applicable to themselves. In spite of this, wherever one finds that the barrier to effective health action lies in the individual's belief about the utility of taking such action, one has an area more amenable to change than that of motives.

An analysis of the motivational principles reported poses as a third and final implication a question of enormous importance for the future of public health. In the most clear-cut down-to-earth terms, the question is: Will programs be adapted to fit people or will people be adapted to fit programs? In

more complete terms: Should public health programs be oriented to fit within people's existing motives and beliefs, or should attempts be made to change people's motives and beliefs in accordance with professional estimate of what changes are needed? The implications of either choice are profound.

If the decision were reached to reorient programs in terms of existing needs and beliefs it would entail radical reorganization of program and administration. Suppose it can be shown that health-related motives, especially those regarding prevention, are weak in comparison with such other motives as the social, the parental, the sexual, the economic? Would we not then be well advised to tap some of these motives in attempting to persuade people to take health action? Might we, for example, attempt to stimulate health behavior as a means of obtaining social approval, of satisfying one's needs to be a good parent, or satisfying social standards of behavior on the job?

Suppose it is further shown that even within the set of existing health motives those related to prevention are almost insignificant compared to those related to therapy. Would we not then be well advised to emphasize care rather than prevention in our appeals to the public—even when our program focus is prevention? Would we not be well advised to administer our programs, even our preventive programs, through institutions identified by people as providing therapeutic services, mainly the hospital and the private physician? What would be the logic in such a case of setting up a building specifically designed not to provide treatment? Would we not in addition to the foregoing find the need for tremendous variation among local programs based on differences in motives and beliefs in different groups? There is no need to spell out all the implications of an approach calculated to reorient public health in terms of

existing motives and beliefs of people. The few questions posed should suggest others.

The alternative answer to the question—that of attempting to change motives and beliefs—has equally profound significance, though of a different kind. How are motives willfully taught? How are value systems changed? How can we teach motives around accident prevention, for example, to teenagers and even adults who are now highly motivated to take risks? These are people who receive social rewards for driving fast, who ridicule others for using seat belts, who compliment a neighbor who takes risks on a shaky ladder when he is installing storm windows. How can we teach motives for rest or relaxation to people, including health workers, when the culture now rewards those who work night and day? How many of us can fail to admire our co-workers and supervisors who proudly inform us that they complete even more office work at home than the phenomenal amount they accomplish in the office?

Any attempt to increase the value for health may first entail decreasing the value of other dimensions of life. And that will be no mean job, since methods for introducing planned cultural change into a complex society have not yet been developed. Whatever the methods used they would surely involve introducing education for health at many age levels starting with the earliest years of life. It would probably have to be introduced in terms of and through most of our existing institutions—our religious, economic, educational, and social institutions—as well as our complex national communications network. Surely the teaching of new health motives to the public would be a gigantic undertaking. Furthermore, the question being discussed raises a number of ethical issues which require resolution. It seems likely that public health will

attempt both alternatives. We will try to adapt our programs to people's current motives but at the same time we will be engaged in efforts to educate for new motives. How can behavioral science contribute to both objectives? Two kinds of contributions may be anticipated:

1. Our success in adapting programs to people will be in direct proportion to our knowledge of people. Therefore, continued improvement of theories of behavior will lead to researches that are progressively more complete in illuminating those motives and beliefs of people which determine their health behavior. Behavioral science has the obligation not only to develop such knowledge but to communicate it effectively to the public health worker.

2. Before education to strengthen health values and motives can be effective, methodological research will be needed to throw more light on the processes by which motives can be experimentally changed and by which cultural values are changed. This is another area in which behavioral science can assist.

Finally, it is important to remember that ultimately these contributions can be effective only if they are incorporated into health programs based on an adequate knowledge of prevention and control of disease; programs accepted and integrated into the community; programs administered and operated by dedicated and thoughtful people. In short, the contribution of behavioral science to public health action can only be effective as it takes its place with other disciplines in making the maximum contribution to the total program.

#### REFERENCES

1. Lewin, K. *A Dynamic Theory of Personality*. New York, N. Y.: McGraw-Hill, 1935.
2. Hochbaum, Godfrey M. *Public Participation in Medical Screening Programs, A Socio-Psychological Study*. PHS Publ. No. 572, 1958.
3. Meltzer, Nancy Starbuck. *A Psychological Approach*

- to Developing Principles of Community Organization. A.J.P.H. 43:2,198-203, 1953.
4. Leventhal, H.; Hochbaum, G.; and Rosenstock, I. M. The Impact of Asian Influenza Upon Community Life (in preparation).
  5. Leventhal, H., and Rosenstock, I. M. Identification of Subjective Health Needs: A Pretest (unpublished report for administrative use).
  6. Miller, Neil E. "Experimental Studies of Conflict" in Personality and the Behavior Disorders. Hunt, J. McV. New York, N. Y.: The Ronald Press 431-465, 1944.

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## Psalm for Salk

For the vaccine which safeguards mankind may the Lord be praised all days.  
 For the scientific materials beneath the earth may the Lord be praised all days.  
 For the chemicals discovered in the air may the Lord be praised all days.  
 For the magnified eye which enlightens the mind may the Lord be praised all days.  
 Yea, for the serum which protects the body as grace does the soul may the Lord be exalted forever.  
 For the relief of the innocent's pain may the Lord be praised all days.  
 For the perseverance in its research may the Lord be praised all days.  
 For man's determination unto the end may the Lord be praised all days.  
 For the contribution of a great man may the Lord be praised all days.  
 Yea, that little children may walk unto Him may the Lord be exalted forever.

(Wesley Ann Pribyl, Redwood City, California; age 14.)

(Editor's note: Printed with permission. Alcor S. Browne, Ph.D., chief, Microbiology Laboratory, California State Department of Health, brought this poem to the attention of the editors in the belief that Journal readers would appreciate this young lady's thoughts, as she expressed them in one of her science courses.)