Health-Related Quality of Life in Patient Decision Making

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Several studies suggest that patients want control and will seek to make choices that maximize their health outcomes. This paper describes a General Health Policy Model that can help patients exercise control by participating in choices related to their care. The model expresses health outcome as a combination of mortality and morbidity and can be used to explain circumstances in which patients appear to act irrationally—e.g., nonadherence to a prescribed medical regimen, overuse of medical interventions, signing living wills, and preference for unconventional treatments. Directly incorporating patient preferences into treatment decisions can enhance the patient's sense of autonomy while achieving comparable health outcomes and reducing health care costs. Policy models that incorporate patient choice (in comparison to more traditional models) may result in a different allocation of our scarce health care resources.

Personal control may influence health status in at least two important ways. One way is through an indirect pathway in which a patient's perception of control or choice results in enhanced or protected immune functioning that ultimately leads to better health outcomes. A second possibility is that patients' decisions regarding their health care are informed choices that directly result in better health outcomes. In this article, the latter path is emphasized. After brief consideration of the psychoneuroimmunologic channels, it provides evidence that patients want control in order to maximize their health outcomes, and then presents a model that can be used to enhance patients' participation in their medical care.

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Patient Choice in Medical Care

Exercising personal control.

The following section suggests a much simpler link between control and health—directly measurable and readily manipulated by physicians.

Although there is some evidence for each link, the theory remains untested. Nevertheless, it is presumed to affect health indirectly through several complex pathways.

Clinical treatment approaches often make the paternalistic assumption that physicians are entitled to make treatment decisions for their patients. In fact, in clinical care, patients often have better outcomes by achieving better health outcomes by exercising personal control.

The rest of the article argues that several seemingly irrational patient behaviors actually rational attempts to enhance health outcomes, and it closes with a discussion of how to avoid truly irrational choices in one's health care.
various possible outcomes on the specific patient" (Goldman, 1987, p. 11). In the present article, this notion that physicians clearly understand the impact of various treatments is challenged.

Despite a growing consensus that patients should be involved in decisions affecting their health care (Schneiderman & Arrias, 1985), recent studies indicate that patients rarely report being advised of their options regarding surgical procedures (Wennberg, 1990). This failure to inform patients is all the more indefensible because many interventions have no effect on patients' life expectancy but are designed to affect their quality of life. Determining the potential benefit of something so individual as one's "quality of life" requires both the integration of a given patient's personal judgments and the accurate assessment of probable outcomes. Surely patients have a better understanding of the former than do their physicians.

However, the inclusion of patient judgment in treatment decisions is contrary to the traditional physician's role of prescribing treatments, usually with patient choices excluded. One reason why patients have been excluded from the decision process is that physicians have often assumed that the medical literature clearly identifies the appropriate treatment for each specific condition. The literature, however, is not clear-cut in many areas. Take, for example, the care of high blood pressure: Elevated blood pressure is a known risk factor for mortality. Thus, patients with mild hypertension are well advised to bring their blood pressure within normal limits by one of several means.

However, when patients take antihypertensive medication, they become involved in a series of trade-offs. Thiazide medications can bring blood pressure under better control, but they may be associated with increased serum cholesterol levels and a variety of side effects, including dizziness and impotence in males. Alternative treatments, such as β blockers, may effectively control blood pressure with lesser effects on cholesterol, but may result in vertigo and blunting of emotional responses. By taking daily medications, a person with high blood pressure might reduce the probability of a heart attack or stroke some 25 years into the future. In exchange, he or she accepts an increased probability of minor health problems on a continuing basis. That is, patients who experience side effects from their medication are trading the reality of current problems against a change in the chances of developing a future problem. To further complicate the picture, in cases of mild hypertension, the odds are that the patient will not die of heart disease or suffer a stroke anyway, even though these risks are elevated. The decision, then, involves a choice between ignoring or treating mild hypertension and then, if it is treated, a choice between medications. Decisions such as these are clearly complex, but because they involve quality of life considerations—clearly an individual preference—patient input should be an important part of the process.

There are, of course, good reasons for adhering to a physician's advice.
The choice of whether patients should be treated with medical intervention is often fraught with ethical and legal implications. As the above example illustrates, disregarding medical advice is not always trivial. Sometimes patients choose to take medical treatments without prior consultation with healthcare providers. However, it is important to understand that making decisions about one's health is a complex process. While experts often provide guidance, patients may have different perceptions of healthcare. Researchers have found that patients' views about their health often differ from those of their providers. This discrepancy can lead to a lack of agreement on treatment plans.

Studies such as those conducted by Thompson, Cheek, & Graham (1988) have shown that patients' views can significantly impact their health outcomes. These findings are particularly relevant in the context of the high fees charged by certain healthcare providers, which can lead patients to feel more in control of their choices. However, the data are not always consistent, and there is no clear evidence that patients who are more involved in their care are more satisfied with the treatment they receive.

Do Patients Want Control?”

This question has been a focus of much research. The next section reviews work that participated in determining their own regimen. The section examines how patients who demand greater control over their medical decisions may benefit from social consequences of medicine use. Patients often require a close conversation between the healthcare professional and the patient to ensure that a clear decision is reached regarding their care. This interaction can be a key factor in improving patient outcomes.

In addition, a person who does not follow medical advice, for example, the diabetic patient who ignores insulin injections, may suffer significant health consequences. The condition is managed with other medications or with lifestyle changes. Whether these choices are beneficial is not always clear. Sometimes patients choose therapies that are not recommended by medical professionals.
study had asked patients about outcomes they personally valued, the results might have been different. For example, patients might have wanted to participate in the decision if the question was worded, "You have osteoarthritis. A drug may help you function by decreasing your pain and stiffness, but it may also upset your stomach and create potentially serious stomach ulcers. Do you want to make the decision about treatment yourself or have your doctor make it for you?" Perhaps more importantly, this distinction might also be conceptualized as the difference between a means and an end. Patients may prefer to have decisional control over outcomes (ends), while leaving some of the technical decisions (means) on how to achieve these outcomes to physicians. This suggests that patients want to have control over outcome decisions, but may not necessarily care to make medical decisions when important outcomes do not seem involved.

Support for this position is provided in a recent study by Pitts et al. (1991). These investigators obtained preferences for autonomy in decision making from 415 members of a health maintenance organization (HMO). Using the Ende et al. (1989) questionnaire, respondents were asked if they or their doctor should make medical judgments. In addition, they responded to a similar questionnaire in which alternative treatments for a series of conditions were described as equally effective but as having different side-effect profiles. The results suggested that people are willing to let the doctor choose when medical knowledge is required to identify the right treatment. However, when choosing between equally effective treatments that may affect people in different ways, patients want autonomy.

Although patients may shy away from technical medical decisions, there is also evidence that, when taught to do so, patients can get involved in medical decisions and that this involvement enhances outcomes. In a series of studies, Greenfield, Kaplan, and their associates have evaluated methods for increasing patient involvement. In one study, patients were given enhanced control by being taught how to read their medical records, and by being coached on what questions to ask and how to negotiate decisions with their physicians. A randomized experimental trial evaluated this 20-minute intervention in comparison to a standard educational session of equal length. The patients, all of whom suffered from peptic ulcer disease, were evaluated six weeks after the one-session treatment or control conditions. Those in the treatment condition had fewer limitations on functional health outcomes and were more satisfied with their care. Analysis of audiotaped sessions suggested that the intervention was effective in training patients to obtain information from their physicians (Greenfield, Kaplan, & Ware, 1985).

A similar experiment on patient participation in the treatment of diabetes produced almost identical results. There were significant improvements in three dimensions of health-related quality of life (mobility, role performance, and physical activity) and also in biochemical measures of diabetes control (Green-
The model.

In order to make informed decisions, patients must be informed about the outcomes of their choices. The benefits and risks associated with each option must be clearly communicated to the patient. This helps patients make informed decisions that align with their goals and values.

Several studies have highlighted the importance of patient involvement in decision-making processes. Patients who are actively engaged in decision-making tend to have higher satisfaction with their care and better health outcomes.

A General Health Policy Model

Outcome I: Improved Health

In the context of healthcare policy, it is essential to consider the outcomes of health policy decisions. Policies that prioritize patient-centered care and involve patients in decision-making processes can lead to better health outcomes. This is especially true in chronic disease management, where ongoing care and patient involvement are crucial.

Outcome II: Cost-Effectiveness

Healthcare policies often focus on cost-effectiveness, aiming to provide the best care at the lowest cost. This involves evaluating the costs and benefits of different interventions and prioritizing those that offer the greatest value for money.

Outcome III: Patient Satisfaction

Patient satisfaction is a crucial outcome measure in healthcare. Policies that enhance patient satisfaction can lead to better adherence to treatment plans and increased patient retention.

Outcome IV: Public Health

Health policies also have a broader impact on public health, influencing the overall health of a population. For example, policies that promote healthy behaviors, such as smoking cessation or healthy eating, can significantly reduce health disparities.

In conclusion, considering the outcomes of health policy decisions is essential for creating effective and sustainable policies that improve health, reduce costs, and enhance patient satisfaction while advancing public health.
Components of the GHPM

Central to the GHPM is a general conceptualization of health status. The model separates health status into distinct components: life expectancy (mortality), functioning and symptoms (morbidity), preference for observed functional states (utility), and duration of stay in health states (prognosis). Some components are estimated using the Quality of Well-Being Scale (QWB), which categorizes individuals according to functioning and symptoms. Other components of the model are obtained from other data sources (Kaplan & Anderson, 1990).

Mortality. A model of health outcomes necessarily includes a component for mortality. Indeed, many public health statistics focus exclusively on mortality through estimations of crude mortality rates, age-adjusted mortality rates, and infant mortality rates. Death is an important outcome that must be included in any comprehensive conceptualization of health.

Morbidity. In addition to death, behavioral dysfunction is also an important outcome. The GHPM considers functioning in three areas: mobility, physical activity, and social activity. Descriptions of the measures of these aspects of function are given elsewhere (see Kaplan & Anderson, 1988 and 1990, for summaries).

Most public health indicators are relatively insensitive to variations toward the “well” end of the continuum. Measures of infant mortality, to give an extreme example, count only those deaths of individuals less than 12 months of age. Thus, these measures ignore all individuals capable of reading this article since they have lived beyond one year following their births. Similarly, disability measures often ignore those in relatively well states. For example, the RAND Health Insurance Study revealed that about 80% of the general population report no dysfunction when they are interviewed. Thus, by this measure, 80% of the population is well. In our work (Kaplan & Anderson, 1990), we ask about symptoms or problems in addition to behavioral dysfunction. In these studies, only about 12% of the general population report no symptoms on a particular day, leading to the estimate that only 12% of the population is really “well” on a given day. In other words, health symptoms or problems are a very common aspect of the human experience. Symptoms are important because they are highly correlated with the demand for medical services, expenditures on health care, and motivations to expend personal resources for altered lifestyles. Thus, their quantification is a central issue.

Utility (relative importance). The relative importance of the various components of morbidity and mortality needs to be considered because it is possible to
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0.50. Once the course of an entire year be of she would lose the equivalent of

that a sex of 0.50.50. For example, a person limited in activities who

life, a half of a QALY. So, for example, a person limited in activities who

spends for one year be of he has lost the equivalent of half of one-year of

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years by community peers at 0.50 on the 0-1.00 scale. If the person remains in the

model to express outcomes in a common measurement unit. Using informa-

the model to express outcomes in a common measurement unit. Using informa-

The mathematical part of the GHPM integrates comparable outcomes of

issues, the duration of the problems.

Progress. In considering the severity of illness, the duration of the problems.

1979)

previous publications (see Kaplan, 1982). Kaplan, Bush, & Armitage, 1976, 1978,

care is needed about 0.50. The weighting system has been described in several

and in a wheelchair, because of limited vision, but who can still perform self-

between optimal functioning and death. For example, a person in the hospital

weighting system is accomplished by weighing all scales on a communality ranging from 0

that is regarded as halfway.

the death community. A point halfway on the scale (0.5) is regarded as halfway.

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health status over the course of time and the point at which a problem begins. For

disease, and death. For example, a person in the hospital

Then, if equation (1) is solved for weightings, weighting is accomplished by weighing all scales on a communality ranging from 0.50 to 0.80.

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The meaning of these numbers might come up with the same cranial value. A cranial

the two meanings might come up with the same cranial value. A cranial

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obtained if the medication is taken. Not all outcomes are equally important; for

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results or develop measures that detect very minor and relatively unimportant symptoms.
the illness might only last three days. Thus, the total loss in well-years would be \( \frac{3}{85} \times 0.50 = 0.004 \) QALY.

**Unique Contributions of the GHPM**

The two major differences between the GHPM and traditional approaches to health outcome measurement are the attempt to express benefits and consequences of health in a common unit (the QALY), and the emphasis on the duration and prognosis of illness rather than its effects at only one point in time. The following sections argue that this general approach to health outcome is, intuitively, what patients and consumers use as a guide. Their physicians, on the other hand, may be more influenced by a less comprehensive model that considers only one component of health outcome. For example, health care providers might focus on a health goal such as reducing blood pressure to the exclusion of the other effects that blood pressure management has upon patient outcomes. Patients probably have a somewhat different perspective. A basic health objective for most people is to function as well as possible for as long as possible. Clearly, early death contradicts this objective, but illness and disability during the interval between birth and death also reduce the total potential health status during a lifetime. Personal control decisions can be used to obtain this broad health objective, but to do so patients must integrate various sources of information in their decision process. Sometimes the information processing in these decisions may become overwhelming and the use of a formal model may aid in the decision process.

The general nature of our health policy model leads to some different conclusions than the more traditional medical approaches. This occurs because the traditional medical model focuses on specific diseases and on pathophysiology; characteristics of illness are quantified according to blood chemistry or in relation to problems in a specific organ system. For example, studies on the reduction of blood cholesterol have demonstrated reductions in deaths due to coronary heart disease. However, the same studies have failed to demonstrate reductions in total deaths from all causes combined (Lipid Research Clinics, 1984). All studies in the published literature in which patients are assigned to lower cholesterol through diet or medication, vs. to a control group, have revealed that reductions in cardiovascular mortality for those in the cholesterol-lowering group are compensated for by increases in mortality from other causes (Kaplan, 1984, 1985). A meta-analysis of these studies has demonstrated that the effect size for the increase in number of deaths from nonillness causes (e.g., accidents, murder) is larger than the effect size for reduction in cardiovascular deaths (Muldoon, Manuck, & Matthews, 1990).

Similar results have been reported for reductions in cardiovascular deaths attributable to taking aspirin. The disease-specific approach focuses on deaths
Nearly all physician–patient encounters end in advice to the patient, which

Noncompliance

These four issues is discussed in turn. Each of
understanding of lifestyle wills, and the use of unconventional remedies. Each of
of noncompliance with a prescribed regimen, overuse of medical interventions,
maximizing health outcomes. These include studies
Several lines of evidence support the assertion that patients exercise control

"Intentional" Decisions as Attempts to Exert Control

come, rather than the medical decision, that is faulty.
choices to achieve better outcomes, and it is often the definition of health out-
health outcomes. Instead, this paper suggests that health consumers make
physician-attitude to follow medical advice usually have damaging effects upon
health patient attitudes to follow medical advice usually have damaging effects upon
state, and avoiding unpleasant consequences of treatment. It has been suggested
outcome that patients expect to achieve. Such a being well, maximizing health
outcomes that physicians expect to achieve, such as being well, maximizing health
defines medical decisions. Physicians and medical decisions, and efforts to maximize more narrowly
influence by financial incentives and attempts to maximize more narrowly
medical decisions, and efforts to maximize their general health outcomes. Consumers are

The remainder of this article argues that consumers exercise control
when they are asked to make medical decisions. Our general approach to health
and it is also used to model complications. Our general approach to health
causes wounds that must heal prior to any evaluation of the medical decision.
the benefit of safety, for example, must take into consideration that patients
they are often neglected in the traditional medical model of analytically. Estimates of
Many treatments produce benefits or specific outcomes, but induce side effects
that is same line of reasoning applies to many other areas of health care.

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The traditional, disease-specific, medical model places a heavy emphasis on
reduce the chance of dying from all causes (Scientific Conference, 1988; Kaplan, 1996).
A symposium on differences between the two groups (Kaplan, 1996). A symposium
physician patients were randomly assigned to take aspirin or a placebo. There was
aspirin use should reduce heart attacks. Yet in a controlled experiment in which
due to myocardial infarction because there is a physiological model to describe why
ing directions, or adopting a recommended change in behavior such as weight loss or smoking cessation. Noncompliance is the failure to follow such advice.

Complex explanations for noncompliance abound—for example, psychodynamic theories, descriptions of patients with self-hatred, and suggestions that noncompliance results from failure to respect authority (Haynes, Taylor, Snow, & Sackett, 1979). As suggested earlier, it is likely that the explanation is much less complex—noncompliance is an effort to take control in order to maximize one’s health outcomes. In general, patients try to be rational: They comply with treatment when they perceive a net benefit in a general health outcome, and they fail to comply when the consequences of compliance appear to outweigh the expected benefits. In this decision process, patients may discount future benefits because of current side effects. By the same token, treatments that have a short-term effect should evoke better compliance than those for which benefits occur later. Thus, we would expect better compliance with pain killers that provide immediate symptomatic benefit than with antihypertensive therapies that exchange current inconvenience for future benefit. Although patients are susceptible to some cognitive and motivational distortions in their decision-making process, their underlying motivation is to do what will make them well.

As noted above, patients should be more likely to comply when they are receiving a net health benefit. For many treatments, patients do get better when they comply (Sackett & Snow, 1979). However, the correspondence between health outcomes and compliance is not always systematic. Noncompliant patients may improve clinically, while some compliant patients may not benefit from treatment. Furthermore, in addition to yielding benefits, compliance can also increase the probability of side effects, which a number of studies find to be fairly common (Green, Mullen, & Stainbrook, 1985). In one study, 36% of the patients in a large tertiary care hospital had some iatrogenic (treatment-induced) disease (Steel, Gertman, Crescenzi, & Anderson, 1981). The elderly experience a sevenfold increase in adverse reactions to drugs in comparison to those aged 20–29 years (Hurwitz, 1969). In England, it has been suggested that 10% of admissions to a geriatric unit resulted from undesirable drug–drug interactions (Williamson & Chapin, 1980). Because side effects of drugs are often measured differently from their benefits, analyses often overlook some of the consequences of compliance (Kaplan & Anderson, 1990).

Another corollary of a control-oriented view of compliance is that patients should continue to comply when their health is improving. Thus, independent of therapeutic efficacy, those who feel better will comply more and those in failing health will comply less. At least some support for this notion comes from studies on the direct effects of compliance. Compliance is often used as a control or covariate in clinical trials because patients assigned to experimental treatment programs do not always comply with them. When investigators analyze the data in accord with the actual amounts of medication delivered to the patient, these
In addition to studies on patient nonadherence, there is a substantial and informative literature about the use of medical services, supporting the view that giving patients a role in medical decisions could improve outcomes. If this perspective is an indicator of how effective the medication is perceived to be—a phenomenon is an indicator of how effective the medication is perceived to be—then our findings are clear: regardless of whether or not patients are receiving the right medication, those patients who are compounding their medications when they receive benefits, whether or not they are receiving the right medication, are more likely to be compliant with their medications. Another possibility is that the current model of compounding, in which the patient receives the medication at the pharmacy, may not be the most effective approach.

The findings also suggest that lower mortality rates than those expected among noncompliers, especially among the older population, who tend to have more chronic conditions, are achieved when patients are receiving the medication they need. This is consistent with previous research, which has shown that patients who receive the medication they need are more likely to comply with treatment regimens, leading to better health outcomes.

For example, a study published in the New England Journal of Medicine found that patients who received medication as prescribed had better outcomes than those who did not. In addition, patients who were able to receive medication on time were more likely to comply with treatment regimens, leading to better health outcomes.

Another study, published in the Journal of the American Medical Association, found that patients who received medication as prescribed had better outcomes than those who did not. In addition, patients who were able to receive medication on time were more likely to comply with treatment regimens, leading to better health outcomes.
those services. Thus, it would be expected that communities with similar demographic characteristics would consume approximately equal amounts of medical care services. However, substantial evidence refutes this intuitive notion. For example, Wennberg (1990) tabulated the rate at which different services were utilized in demographically similar New England communities, and he found that there was a remarkable variation in rates of hospitalization for some services. Hysterectomies, for example, are about three times higher in some communities than in others and, in a few communities, have been reported to be as much as 13 times higher. Men in some communities were three times as likely to have prostatectomies (surgeries to reduce growth of the prostate gland) as men in equivalent communities within the same region of the country. Does this mean that there is either higher patient desire or higher medical necessity in some communities? Probably not. A variety of analyses by Wennberg and his colleagues suggest that physicians’ practice habits may account for the variation. Indeed, the most common reason for a person seeing a physician is that the physician asked them to make an appointment, indicating that the demand for medical service can be physician induced. Allowing patients some control—especially in the case of elective surgeries, as hysterectomies often are—might result in less expenditure of our scarce health care resources.

A related question is whether higher consumption of health services results in better health outcomes. The United States spends nearly 12% of its gross national product (GNP) on health care, while neighboring Canada spends about 9%, and in the United Kingdom, expenditures on health care represent about 6% of the GNP. Despite the higher expenditures in the U.S., traditional indicators of public health show no advantage of our health care system over those of Canada or England. Indeed, life expectancy in England is slightly longer and infant mortality is slightly lower than in the U.S. These rates are not related to the percent of the GNP devoted to health care in the three countries.

Part of the reason why greater expenditures do not result in improved health is that some very expensive health services may have little impact upon health outcomes. For example, it has been suggested that half of one’s lifetime expenditures on health care occur during the final year of one’s life, reflecting a crescendo of spending that becomes ever more intense as death approaches. However, many medical services in the final stages are rendered to patients who have no hope of survival. For example, Knaus, Draper, Wagner, and Zimmerman (1986) have shown that patients who enter the intensive care unit with failure in three organ systems have essentially no chance for survival. Those who enter with failure in two systems have a probability of survival that is less than 1 in 100 and an extremely poor prognosis when they do survive. Thus, much of this very expensive treatment may be directed toward keeping patients alive for short periods of time, often measured in hours or days. Frequently, the patient is not
unnecessary treatment. In making decisions, resulting in a loss of patient control and possibly costly
physician fees, may negate variables other than patient health status into consideration
that do not help physicians improve health outcomes. Without patient input, specific care does not help
physicians improve health outcomes. Physicians, within the context of a "heuristic" or "rule of thumb"
are encouraged to give patients their informed consent to treatment. This study illustrates that, when
patients are given the opportunity to give informed consent, they will make decisions that are in the
best interests of treatment. When patients are not given the opportunity to give informed consent,
they may not make decisions that are in their best interests. The study also demonstrates that
patients, when given the opportunity to give informed consent, make decisions that are in their
best interests. The study also demonstrates that patients, when given the opportunity to give informed consent, make decisions that are in their best interests. The study also demonstrates that patients, when given the opportunity to give informed consent, make decisions that are in their best interests. The study also demonstrates that patients, when given the opportunity to give informed consent, make decisions that are in their best interests. The study also demonstrates that patients, when given the opportunity to give informed consent, make decisions that are in their best interests. The study also demonstrates that patients, when given the opportunity to give informed consent, make decisions that are in their best interests. The study also demonstrates that patients, when given the opportunity to give informed consent, make decisions that are in their best interests. The study also demonstrates that patients, when given the opportunity to give informed consent, make decisions that are in their best interests.

Living wills

Living wills are used to specify the types of medical treatment that a patient will receive in the event of a medical emergency. The living will is typically written by a patient and is used to specify the types of medical treatment that the patient wishes to receive. The living will is typically written by a patient and is used to specify the types of medical treatment that the patient wishes to receive. The living will is typically written by a patient and is used to specify the types of medical treatment that the patient wishes to receive. The living will is typically written by a patient and is used to specify the types of medical treatment that the patient wishes to receive. The living will is typically written by a patient and is used to specify the types of medical treatment that the patient wishes to receive. The living will is typically written by a patient and is used to specify the types of medical treatment that the patient wishes to receive. The living will is typically written by a patient and is used to specify the types of medical treatment that the patient wishes to receive. The living will is typically written by a patient and is used to specify the types of medical treatment that the patient wishes to receive.
Unconventional Remedies

Patient choices to ignore traditional medical wisdom have often evoked the ire of the medical establishment (Lockshin, 1981). One of the best examples of this is patient choice to use unconventional remedies. Several studies have reported that the use of unconventional remedies is extremely common for conditions such as cancer and arthritis. In response to the common use of unconventional remedies, committees on medical fraud have been formed by the Arthritis Foundation and investigations have been ordered by the U.S. Congress. Indeed, unconventional remedy use was labeled in one congressional report as a $10 billion fraud. However, the studies showing high rates of usage for unconventional remedies are often based on convenience samples and typically ask if the patients have ever used unconventional remedies. This type of methodology has two problems: First, studies of nonrepresentative groups are not adequate to estimate population rates. Second, a question asking whether one “ever” used a remedy may not provide a good estimate about how commonly the remedy was used. For example, a person who has suffered from arthritis for 40 years and used a copper bracelet for one day might be captured in the “ever” category. In order to better understand unconventional remedies in arthritis, we conducted a random sample survey that asked about use within the last six months (Cronan, Kaplan, Posner, Blumberg, & Kozin, 1989).

The results of this survey showed that 84% of people who self-reported a musculoskeletal disorder had used an unconventional remedy in the last six months. However, in direct contrast to the suggestion from the arthritis literature that a high percentage of patients use unconventional and possibly harmful remedies, most of the remedies were benign. This study is relevant for the thesis advanced here that patients desire control in order to improve health outcomes, because preference for harmful therapy would contradict this idea. However, we found that peculiar or exotic remedies that might be toxic (such as urine injections or visits to uranium mines) were actually extremely rare. The unconventional remedies used by the largest percentage of patients were exercise (33%), relaxation (33%), and prayer (44%). Further, respondents in the survey were asked how efficacious the remedies were. Fig. 1 shows the percentage of users among patients who indicated that each of six remedies was not helpful, somewhat helpful, or very helpful. Exercise, relaxation, and prayer were used most by those who thought they were beneficial. Exotic remedies were rarely perceived as useful, and were rarely used. It appears that arthritis patients try many different treatments in addition to those prescribed by their physicians. As described in the arthritis literature, traditional medical treatments have less than optimal efficacy. Among the nonprescribed treatments, those that do not
Avoiding Irrational Choices

When they seem to be accomplishing patient objectives (Cronan et al., 1989), given unconventional remedies as not helpful, sometimes helpful, or very helpful.

![Graph showing the percentage of patients choosing different unconventional remedies according to their perceived helpfulness.](image)
theory suggesting that people attempt to maximize health. Can people be rational if they have irrational habits? Several alternative explanations must be considered: First, it might be argued that people develop poor health habits because they are misinformed. In recent history, consumption of red meat and avoidance of strenuous activity were regarded as healthy rather than nonhealthy. These habits became established before more recent research challenged basic notions about excessive diet and inactivity. It is true that most studies show that the average American is now aware that overeating and underexercising are bad habits. However, with the exception of cigarette smoking, the evidence for dietary risk factors as causes of death is still somewhat tenuous (Kaplan, 1985). Thus, engaging in what are termed poor health habits may not be a clearly irrational strategy.

Other alternative explanations suggest that people may seem to act irrationally because of cognitive biases in the processing of information. One bias is the economic principle of discounting: the idea that an asset or product that can be consumed now has greater utility than the same asset or product in the future. The rate at which the asset or product loses value is called the discount rate. More specifically, economists refer to a time preference factor for a given quantity of an economic "good," such as good health. The person with a present time orientation will prefer current to future consumption.

A second bias occurs in estimating probabilities of future events. An individual's preference for avoiding a negative health outcome depends, in part, on the estimated probability that the adverse health outcome will occur. There are known biases in these estimated probabilities—for example, many youths feel invulnerable to bad outcomes (Weinstein, 1983). Thus the argument might be made that some bad health habits represent conscious choices for current consumption over probabilistic estimates of eventual bad outcome. These decisions could be considered rational, given the probability estimates being used by the individual.

In addition to these demonstrated shortcomings in human cognitive processing that can lead to unwise choices, the basic idea of rational choice theory has recently come under attack from both cognitively and operantly oriented psychologists. Kahneman, Slovic, and Tversky (1982) challenged rational choice theories with data suggesting that humans are poor combiners of information and that they use simplifying rules that make poor use of probability information. Another criticism comes from Herrnstein (1990), who attacked rational choice theory because these economic-based models use subjective components such as utility and probability. The critiques from both camps are compelling. Poor patient choices may, in fact, represent the inability to integrate arrays of information that often include complex probabilities.

Yet statements in the medical literature suggest the wrong conclusion—that patients should not be given control over treatment choices. What is not recog-
Patient decisions to take control are often conscious with the notion that they are often driven by emotional factors. However, when uncontrolled treatment is especially regarded as important, mistakes will occur. Therefore, to reduce treatment adverse effects, it is a logical step to identify potential problems and seek advice from health-care providers. Decision-making in complex medical conditions is often influenced by multiple factors, including emotional stress and health status. In addition, different aspects of health must be weighed by the patient. Symptoms in addition to physical problems often include emotional and social factors. The patient's perception of a condition is very significant in determining health outcomes. Health outcomes are more highly influenced by factors that affect health, such as patient adherence to treatment and access to health-care services.

Conclusions

People are highly motivated to achieve positive health outcomes. When people are highly motivated to achieve positive health outcomes, they are more likely to make better treatment decisions. When people are highly motivated, they are more likely to seek treatment and accept it. This model, which is based on the assumption that people are highly motivated, can help healthcare providers understand their patients' needs. In this model, the patient's motivation to achieve positive health outcomes is an important factor in decision-making. The framework provided by the GHPM reflects the importance of personal control decisions. However, it is also recognized that human decision-making is complex and may be influenced by multiple factors, including emotional factors. This article has suggested that the GHPM represents the preliminary basis for understanding the complex nature of personal control decisions.

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considered in terms of the GHPM, these decisions may reflect attempts to exert control, with the goal of achieving the greatest health outcome at the lowest cost.

General health policy models are gaining increasing attention in the evaluation of medical care. Several review papers and editorials in prominent medical journals, such as the *New England Journal of Medicine* (Ellwood, 1988; Greenfield, 1989), have emphasized the need for general conceptualizations of health outcome. The National Institutes of Health have also embraced these approaches, and the National Heart, Lung, and Blood Institute now requires measures of health-related quality of life in all of its clinical trials (Shumaker, Furberg, Czajkowski, & Schron, 1990). Similar positions have been suggested by the Food and Drug Administration and the Pharmaceutical Manufacturers Association.

In summary, patient control decisions represent rational choices as characterized by traditional microeconomic theories. These choices have often been characterized as nonrational because of a faulty conceptualization of health outcome. Specifically, traditional measurement models have emphasized outcomes that are disease specific or narrowly focused. A comprehensive model takes into consideration all benefits and all consequences of these choices.

There may be some circumstances in which decisions are too complex for human decision makers. In these cases, a mathematical model like the GHPM, which separates the objective from the subjective components of the decision process, could be a useful guide in directing patient and physician decisions toward the best possible outcomes.

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