Social and Economic Disparities in Health: Thoughts about Intervention

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IT HAS BEEN KNOWN FOR CENTURIES THAT PEOPLE in the lowest social classes have the highest morbidity and mortality rates. What is *not* known is the reason for this phenomenon. The usual explanations include inadequate nutrition, unavailability of medical care, substandard housing, unhealthy work circumstances, and lack of education. We do not know the relative importance of these theoretical explanations because social class has not been a priority in epidemiological research. In fact, the typical epidemiological research project holds social class constant in statistical analysis so that the importance of *other* factors can be assessed; when this is not done, social class usually overwhelms the analysis and impedes the study of other factors.

Social class is not a priority in research for another reason: epidemiologists tend to choose research topics that will lead to practical programs of improvement. Many feel that the study of social class is not useful because the challenge of coming up with an intervention designed to eliminate class divisions from our society is too daunting. Social class differences, in this view, are here to stay, so there is little point in studying them. Along the same line of reasoning, it is better to study poor diet, smoking, high blood pressure, and other problems for which there are remedies. This outlook assumes that we know what

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aspects of social class are important. For example, if the critical factor is money, interventions might indeed be difficult to carry out. However, because we are only beginning to study the reasons for social class differences, we cannot be sure that money is the critical element. Perhaps there are other compelling factors that are more amenable to change than the current distribution of income.

Two findings on social class in recent years have inspired researchers to think about this problem more productively: one concerns the gradient in social class; the other involves the study of inequalities in social class.

The Social Class Gradient

The first major research finding on the gradient emerged from the work of Marmot and his colleagues, who studied British civil servants (Marmot et al. 1978). They found that employees at the bottom of the civil service hierarchy—guards and delivery people, for example—had rates of heart disease and other health problems that were four times higher than those of civil servants at the very top of the job scale—managers of the civil service departments—despite the fact that all government workers had equal access to the National Health Service.

Marmot and his group statistically adjusted the rates to account for well-known disease risk factors like smoking, high-fat diets, obesity, and high blood pressure, but the difference in disease rates between employees at the top and those at the bottom of the hierarchy was still threefold. It is, of course, not surprising to find that people in the lowest social classes have the highest rates of disease. The surprising revelation to emerge from the study was the existence of a *gradient* of disease: that is, civil servants in grade 2, a group composed of professional and executives, including physicians and lawyers, who occupied the rung one step from the top, had double the rate of disease experienced by the group at the very top. As professionals and executives, employees in this grade could not be called poor. They were not poorly educated, nor did they suffer from malnutrition or inadequate medical care or live in substandard housing. Why should their rates of disease be higher than those of the civil service managers one step above them?

Our first thought was that the gradient was unique to heart disease. This was not the case. The gradient was a factor in many other diseases. Our second thought was that the gradient was unique to the British

civil service. It was not. We have now found that the social class gradient exists throughout most of the industrialized world and applies to almost all diseases (Marmot, Shipley, and Rose 1984; Marmot et al. 1991; Adler et al. 1994). After exploring dozens of possible explanations, I finally have settled on the idea that the social class gradient in disease may best be explained by the concept of "control of destiny." By this I mean that it is healthy for people to be able to influence the events that impinge upon their lives. Thus, the higher social classes have, from their earliest years, been given more training, opportunity, resources, and skills to deal with life problems; the lower a person's position in the social class hierarchy, the less likely he or she is to have received these benefits (Syme 1989).

This idea about control of destiny was developed at about the same time that Karasek and Theorell were publishing their findings on the importance to workers of having discretion, latitude, and choice in dealing with job demands (Karasek and Theorell 1990). Both ideas reflect a similar concept, and neither one is original. A review of the psychological literature reveals that for dozens of years concepts like control of destiny and the role of discretion and latitude in personal empowerment have been important themes in the behavioral sciences. We found that researchers have been applying concepts like mastery, self-efficacy, locus of control, sense of control, powerlessness, competence, and hardiness to their studies of health and other problems (Bauman and Udry 1972; Glass and Singer 1972; Sherrod 1974; Rotter 1975; Seligman 1975; Schulz 1976; Cohen 1980; Pearlin et al. 1981; Bandura 1982; Kobasa 1982; Wallston and Wallston 1982; Langer 1983; Burger 1985; O'Leary 1985; Rodin 1986; Libassi and Maluccio 1986).

Inequalities in Income and Health

Research on inequalities in income and health is a more recent phenomenon than studies of the gradient. Other articles in this issue of the *Quarterly* discuss the fact that disease and death rates tend to be higher when there is greater inequality in income between the group at the top and that at the bottom of the social class hierarchy. This is true whether the focus is within or between countries. As in the studies of the gradient by Marmot and his colleagues, adjustment for other factors does not substantially change this finding. Kaplan's group, for example, shows

that adjusting for median income among the states in this country does not diminish the strong association between income inequality and a wide variety of health outcomes (Kaplan et al. 1996).

These findings on inequality have many explanations, and I will review several of the possibilities, but only briefly; in my view, they do not easily lead to intervention. Detailed discussions of a possible theory seem fruitless when they do not lead to a remedy. My approach is not meant to devalue these ideas simply because they do not lead to interventions, but, rather, it springs from my background in public health, which supports a focus on ideas that are amenable to action. I will conclude this article with a thought of my own that I believe allows for intervention. First, however, I will review other possible explanations.

One possibility is that the link between income inequality and health status is due to powerful social and cultural forces that determine the disparities in both. Thus, the values, philosophy, expectations, political system, and history of a society may independently and separately result in wide income inequalities on the one hand and poor health on the other. Should this be the case, it is not that the inequalities in income result in poor health but, rather, that something else causes both. If this idea is correct, the prognosis for intervention in the immediate future is bleak indeed because it is difficult to bring about major changes in the values, philosophies, and political and economic systems of a society.

Another explanation for these findings is simply that the rich get richer and the poor get poorer. In this view, the poor follow a downward spiral, not necessarily because of disadvantageous economic and tax policies, unfair welfare rulings, or low employment possibilities, but, rather, because it is difficult to move ahead when you are poor. Robert Merton (1968) called this the "Matthew effect," based on this quote from the Gospel:"Unto every one that hath shall be given, and he shall have abundance; but from him that hath not shall be taken away even that which he hath" (Matthew 13:12).

Merton used this citation to explain the allocation of credit to scientists who are already famous while unknown scientists who have done comparable work remain unrecognized. He noted also that the magnitude of improvement in the health state of a population is apparently linked to its prior state of health; communities that have achieved a good standard of health tend to make further, rapid improvements, whereas the standard in communities with a poor record of health may

even deteriorate with time. Again, if this explanation is correct, it offers scant potential for intervention.

A third explanation may be that those who are better off economically—no matter how they achieved that state—also enjoy better health simply because money can buy the requirements for achieving it: better food, medical care, housing, jobs, and education. However, the data from the gradient in the British civil service suggest that income is not the sole explanation for differences in health. Conversely, there are examples of special populations that live in poverty but nevertheless enjoy good health. Even if money was the explanation, however, it would be a challenge to bring about acceptance of interventions requiring the redistribution of income.

A fourth explanation is that of relative deprivation, which describes the problem as originating not so much in the fact that some people have a high income while others have much less, but, rather, in the unfair disparity of their situations. In this scenario, no matter how much money a person has, he or she still views that income as insufficient if others have even more. Thus, relatively poor people with poor health in one community might, at the same income level, be the richest people in another community and experience good health. Research in animals suggests that hierarchy—not money—is the issue (Drews 1983). Any intervention designed to minimize income stratification, this argument goes, would result in the emergence of hierarchical differences based on some other standard. In this view, hierarchies are a persistent force that is difficult to eradicate.

The other dimension of the relative deprivation idea is that even a disadvantageous position is not as painful if everyone is in the same boat. In this view, the problem is one of perceived fairness and equity. Thus, poverty is especially problematic when others are seen to be markedly, and unfairly, better off. Again, even if this explanation for inequalities in health is correct, not much can be done to address it except to prevent people from knowing how disadvantaged their situation is or from learning about the superior circumstances of others. This type of intervention is fraught with ethical difficulties.

There are undoubtedly many other explanations that offer no hope of resolution. A final notion is mentioned here only because it often comes up in discussions of this topic: the Darwinian possibility. In this view, people with better genetic endowments rise to the top because of their

superior gifts, and they have better health for the same reason. An intervention based on this theory would require a national eugenics program, and this seems an unlikely prospect any time soon.

In public health, we do research because we hope that our findings will lead to changes in behavior and in the environment that will improve health and well-being. The research that has been done on inequality is fascinating and provocative, and of high quality. Although it has not led to practical interventions, the work has clarified a real and important phenomenon.

The Control of Destiny Concept

The concept of control of destiny might be as relevant to an explanation of the research on inequalities as it was to my earlier discussion of the gradient. The possibility that inequalities can be traced not to differences in money, in social, economic, and political context, or in relative deprivation, but, rather, to differences in problem-solving skills and ability to access resources, would open *a path to intervention.* This view suggests that the health of poor people is compromised because they do not have the options, choices, and discretion to deal with life challenges. The work of Karasek and Theorell, cited earlier, shows higher rates of heart disease and other conditions among workers in jobs with high demands and low discretion for dealing with them. Furthermore, there is a considerable body of literature on the unfavorable health consequences attached to low levels of control. Thus, the less favorable health of poor people may be due partly to less successful problem-solving skills and partly to lack of information about how to gain access to resources.

According to this argument, inequalities in health are the result of wide variations in problem-solving skills and access to resources. According to this hypothesis, the situation of poor people would be improved by the opportunity to learn more appropriate, creative approaches in order to deal with problems they can solve and to obtain whatever resources they can. Obviously, such an approach does not solve the fundamental problem, but it can offer some immediate relief.

The Ypsilanti Preschool Program

One of the earliest examples of the power of skills training was provided in Ypsilanti, Michigan, in the 1960s with three- and four-year-old chil-

dren (Berrueta-Clement et al. 1984). In this project, poor, black children were invited to attend a new preschool program—a precursor of Head Start. The sponsors of this program were overwhelmed by the response to their announcement. Because more children applied to the school than could be accommodated, fairness dictated that they accept a group at random for admission. Children enrolled in the program attended for one, sometimes two, years.

These children were revisited when they were 19 years old. Almost 100 percent were located, and the interviews uncovered impressive findings. The children who had been enrolled in the preschool program had double the rates of high school graduation and college admission, half the rates of arrest, unemployment, and time spent on the welfare rolls, and, among the girls, half the rate of teenage pregnancy compared with the teenagers in their community who had not attended the school. A more recent follow-up of these children at age 27 revealed a continuation of the powerful impact on their lives of this early experience (Schweinhart and Weikart 1993).

I have tried to identify the factors responsible for this successful outcome. Interviews with teachers who are still conducting the program produced a description of a typical scenario: When the children are first enrolled, they are asked what they would like to do. Often newcomers say they do not know, at which point they are assigned to work with children who have declared an interest in something. When the new child finally gravitates toward a topic or activity, all the resources of the school are marshaled to help that child explore it. He or she may, for example, be interested in airplanes. With help, he makes a paper airplane and flies it. When it crashes, the child is helped to redesign the model and fly it again. When it flies and crashes again, assistance is offered a third time. And so on, all day. In this way, children are encouraged to develop their own interests and to learn different ways to solve problems in the face of difficulties or failure. In short, they learn how to succeed. When these children go on to kindergarten and grade school, they do better than the other children of similar background; this type of learning tends to be cumulative over time.

Some have suggested that these children see options for solving problems while other children are merely depressed by failure. One of my graduate students, who is writing a doctoral thesis on the health consequences of "hope" among poor children, considers hope to be a consequence of mastery. When children believe they can solve problems,

they have more hope. When they do not, they give up. The research literature on job stress, for example, indicates that hope and mastery are related to better health, whereas "giving up" is an unhealthy way to confront major life problems.

The Wellness Guide

With this research in mind, we developed *The Wellness Guide* in California, which was designed to enhance people's sense of control over their lives. The *Guide* is an 80-page book, written in English and Spanish at the fifth-grade reading level, that first discusses pregnancy, birth, and child care and ends with old age and death. It also has sections on food, housing, and money. The *Guide* is distinctive in two ways: First, rather than lecturing or offering advice on risk factors for health, it indicates that there are available choices for virtually every life problem. For example, a woman who is going to have a baby is told she can have the baby either at home or in the hospital. She has a choice. If she chooses the hospital, she can have the baby with her in her room, or not. Again, she has a choice.

The second distinctive feature of the *Guide* is the section on each page that lists sources of help. Because the *Guide* is intended for use throughout California and, eventually, all parts of the country, we faced the difficult problem of providing readers with information about local community resources. We solved it by referring readers to the community services section of the Yellow Pages in their local telephone book. Because California has dozens of Yellow Page companies (all of whom organize their community services pages differently), we had to find a way to standardize the directory formats. After many meetings, all California Yellow Page companies agreed to standardize their formats based on our classification system. GTE has now agreed to use the same system throughout the United States, and we are currently trying to persuade telephone companies nationwide to follow suit.

In addition to referring readers to local community resources, much of the *Guide* is devoted to helping people "work the system." Most professionals and managers are unaware of the degree to which they are skilled in doing this. When confronted with a challenge outside their area of expertise, they *know* they will be able to work it out. They *know* a few telephone calls to friends will point them in the right direction

toward solving the problem. Years of experience have taught them that this will work. When people who have not received skills training are confronted with a problem outside their usual purview, their shoulders often slump from a sense of defeat as they contemplate another life crisis they do not know how to handle.

In the *Guide* we try to share important secrets for "working the system." For example, before tackling telephone calls to the state or local government, we advise people to pull up a chair and settle down for a long, difficult session that will try their patience but that has a chance of eventual success. We tell them to write down their questions so they will not lose their focus. We recommend also that they have a book to read, a scarf to knit, or some other task to occupy their time while they are put on hold or are waiting for a return call. In other sections of the *Guide*, we give advice on people to seek out, where to go first for help, and how to phrase questions.

We are, of course, aware that this approach is focused on individuals rather than on the social, economic, organizational, or political situations that are at the root of the problem. Perhaps it is cruel, or simply ineffective, to suggest that people learn to adjust to, and cope with, an unfair, damaging world. We faced this criticism when we undertook a study of hypertension in San Francisco bus drivers. Our experience of studying this group may illustrate the value of a practical, incremental approach (Ragland et al. 1987).

The Bus Driver Study

Bus drivers in San Francisco have high rates of hypertension. A review of their medical records prior to employment indicated that their blood pressures had been in the normal range before they began driving, but that the longer they drove, the higher their blood pressures rose—even after adjusting for increasing age. Many years of research on this problem convinced us that the cause of this situation was to be found, not in the individual drivers, but in the job itself. An unrealistic, brutal bus schedule inflicted enormous stress on the drivers, as did poor nutrition and little opportunity for physical exercise. The schedule also imposed damage on the drivers' family lives because, in order to recover from their stressful days, they often went to the local tavern where they drank too much and then arrived home late, generally unfit for family life. Over time, this pattern of living led to severe fatigue, loneliness, and depression.

Proposals to the San Francisco bus company about changing the bus schedule originally met with great resistance. The company preferred a program designed for individual bus drivers. Their idea was to offer drivers instruction in coping skills so they could deal with stress more effectively, to provide classes in nutrition and exercise, and to encourage drivers to seek medical help for high blood pressure. Our work with individual drivers, however, produced two important results. First, the bus company became aware of the fact that the drivers suffered not only from high rates of hypertension but also from musculoskeletal problems, gastrointestinal difficulties, and respiratory complaints. Recommendations to individual drivers about their blood pressure were appropriate, but, even if the drivers complied with their physicians' treatment instructions perfectly, other serious work problems continued to cause high rates of absenteeism, accidents, and early retirement. Furthermore, benefits to that particular group of drivers did not extend to new drivers, who would encounter the same risks. The company began to see that the individual approach to hypertension was not enough, which led them to discuss with us the possibility of structural and organizational changes.

Secondly, the drivers themselves began to appreciate the problems inherent in individualized interventions. They came to see that even if they were successful in changing their dietary, exercise, and coping patterns, the heavy job pressure would undermine their efforts. They also became aware that even if their attempts to control the rise in high blood pressure succeeded, they would continue to be vulnerable to the other diseases that plague their occupation. Consequently, the drivers, through their union, began pressing for structural changes to the job itself.

This example illustrates the point that it often is easier to begin change with individuals because their problems are obvious and salient. It is not as easy to recognize the relevance of social, economic, organizational, and political forces, which are often abstract and hidden. *The Wellness Guide* is being used to train people to seek help from community resources. When they discover that the resources are ineffective or absent, they can begin to complain and to band together to lobby for change. Several community agencies, in fact, have used the complaints lodged by these groups as the ammunition they need to obtain funding more financial resources. In a sense, *The Wellness Guide* is serving as a community mobilization activity.

The *Guide* is now being used to teach parents and children about what they can and should expect from their schools. A group of parents, called "Health Promoters" recruits other parents and campaigns for improvement in the schools. Students are being trained to do this as well. The goal is to create enough community support to enable the schools to increase their funding and resources—and perhaps even to construct a Head Start program similar to the one in Ypsilanti.

Conclusion

Perhaps *The Wellness Guide* is not the best approach for confronting the effects of economic inequalities in our society. Some critics are concerned that emphasizing this type of program might distract from a focus on fundamental societal reforms because it would shore up the status quo. This concern is understandable. However, a rigid insistence *only* on fundamental, revolutionary social change may doom us to wait for an event that will require years, even generations, to accomplish. Some advocates of revolution would argue that because implementing major social change is so difficult, it is better to ignore conditions of inequality that nothing realistically can alter in any case. In my view, moral outrage about inequality is appropriate, but it may also be self-indulgent. Changing the world may require a more modest, practical beginning. In any case, the data on social and economic inequalities are in, and the challenges are clear. It is time to think seriously about solutions.

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