

Economic impoverishment as a health risk: Methodologic and conceptual issues

Although economic impoverishment has long been recognized as a health risk, it has not generally been targeted as a modifiable risk factor. A number of methodologic and conceptual issues have impeded and obscured explanation of the nature and characteristics of the relationship between socioeconomic status and health. Further investigation is needed to address directional effects, confounding factors, and measurement difficulties. Conceptual representations of the links between economic impoverishment and health need to be clarified and expanded. Until this relationship is better understood, development of effective strategies to improve health for the economically disadvantaged will be problematic. Key words: economic impoverishment, health, income, risk factors, socioeconomic status

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AN INVERSE relationship between income and health has been well documented. As noted in the US Department of Health and Human Services publication, *Healthy People 2000*, "Health disparities between poor people and those with higher incomes are almost universal for all dimensions of health."^{1(p29)} Recent national survey data indicate that low income is associated with poorer self-rated health, increased restricted activity days, increased chronic limitation of activity, increased bed disability days, and increased work and school loss days.² Economic impoverishment implies low socioeconomic status, and lower socioeconomic groups in the United States are at increased risk for heart disease, cancer, and other leading chronic diseases as well as for traumatic injury and death, infant mortality,

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and infectious disease.¹ Socioeconomic status has been described as "one of the strongest and most consistent predictors of a person's morbidity and mortality experience."^{3(p816)} Unquestionably, the poor in the United States, those with incomes below or bordering the federal poverty level, represent a population at risk.

Recognition of economic impoverishment as a health risk, however, has not produced the kinds of recommendations, policies, and programs inspired by other identified health risks. In contrast to recent major efforts to reduce coronary heart disease (CHD) rates in the United States through the lowering of elevated cholesterol levels,⁴ no concentrated programs to reduce CHD deaths through the improvement of risk-related economic conditions have been launched. The American Heart Association does not list low income among the standard risk factors for heart disease, yet the relative risk of death from coronary heart disease for low socioeconomic groups compared to higher socioeconomic groups is reported to be in the range of 1.25 to 1.50.⁴ In comparison, relative risks of CHD death for women with high levels of total cholesterol compared to women with low levels of total cholesterol have been reported as 1.2⁵ and 1.3.⁶

It can be argued that elevated serum cholesterol, as a physiologic phenomenon amenable to testing, monitoring, and treatment through medical intervention, is clearly a risk to be addressed within the health care system, whereas economic impoverishment is a social problem rooted in the political and economic structure of the country and outside the realm of health care. This means that in terms of health care interventions, economic impoverishment is considered an

unmodifiable risk factor similar to age, gender, or heredity, and attention is then directed toward other risks viewed as modifiable. The opposing argument is that socioeconomic factors are more powerful determinants of health status than are medical treatments and that inequalities in health will persist as long as inequalities in the fundamental reward structures of society remain.⁷ Thus, socioeconomic conditions that constitute or contribute to health risks must also be targeted in policies and programs to improve the health of populations. The view that the "ultimate goal of improved health is not achievable exclusively within the confines of the health sector" is supported in *Nursing's Agenda for Health Care Reform*.^{8(p14)} Nursing's commitment to reform is described as extending beyond the health care system and into the broader environment to include socioeconomic conditions affecting health. Economic impoverishment, therefore, is a health risk that can be considered within the scope of nursing practice.

Although nursing's awareness of the impact of economic impoverishment on health outcomes is evident in the literature,⁹⁻¹¹ a number of methodologic and conceptual issues have impeded and obscured explanations of the relationship between socioeconomic status and health. Until the nature and characteristics of this relationship are better understood, development of effective strategies to decrease health risks attributed to economic impoverishment will be problematic. In this article, key issues surrounding the consideration of economic impoverishment as a health risk will be identified and examined and some approaches to resolving these issues will be suggested.

METHODOLOGIC ISSUES

As noted in *Healthy People 2000*,¹ the relationship between economic impoverishment and health is not a simple connection between dollars available and level of health. Not only is the direction of the relationship unclear, but a number of confounding factors as well as measurement issues have been identified. These will be summarized briefly.

Direction of the relationship

Dutton¹² has pointed out that unlike the relationships between education and health and between race and health, the relationship between income and health involves a two-way effect: "Being poor often leads to worse health, and in turn, worse health may also lead to diminished earning capacity and hence reduced income."^{12(p24)} According to what has been called the "drift hypothesis," chronic illness results in a downward drift in socioeconomic status as those who are unable to obtain or keep jobs owing to illness are deprived of adequate income.⁷ Williams notes that although there is some support for the drift hypothesis, it cannot account for the extent of the reported socioeconomic differences in health status. In most discussions of the relationship between income and health, it is socioeconomic status that is considered the determinant of health rather than the reverse. The nature and strength of the reciprocal effects of economic impoverishment and poor health are not well understood.

Confounding factors

A confounding problem is the prevalence of other risk factors among the economi-

cally impoverished. Cigarette smoking, obesity, and high blood pressure have been repeatedly linked to low income.¹ Significant associations between education level and a number of risk factors including higher systolic blood pressure, unfavorable serum lipoprotein patterns, elevated blood glucose levels, increased body mass index, cigarette smoking, and decreased physical activity have been reported.¹³ According to National Center for Health Statistics data,¹⁴ the age-adjusted prevalence of current cigarette smoking is greatest for persons with less than 12 years of education, nearly 2 1/2 times the rate for those with 16 or more years of education.

Nevertheless, the increased prevalence of other risk factors does not completely explain the relationship between socioeconomic status and certain disease outcomes. In the Framingham Heart Study, education, used as an indicator of socioeconomic status, was significantly associated with CHD in women and this association remained significant after controlling for other risk factors in multivariate analysis.¹⁵ The inverse relationship between cervical cancer incidence and social class persists even when differences in reproductive behavior are accounted for.¹⁶ Despite evidence that economic impoverishment increases the risk of particular illnesses both independently and in interaction with other risk factors, many investigators fail to examine socioeconomic status as either an independent or confounding variable.

The effects of income on health may also be attributed to other characteristics of the economically impoverished. Disparities in income levels are associated with ethnicity, age, and gender. Poverty rates for individu-

als in 1987 in the United States according to ethnicity were 10.5% for Caucasians, 33.1% for African Americans, and 28.2% for Hispanics. In terms of age, those most likely to be poor were children, young adults, and the elderly.² According to the most recent Census Bureau report,¹⁷ 16% of women in comparison to 12.3% of men in the United States report incomes below the poverty level.

When investigators report health risks associated with characteristics such as ethnicity, age, and gender, the contribution of socioeconomic status to these risks is often not addressed. The differing morbidity and mortality rates observed for African American and other ethnic groups in comparison to Caucasians have been attributed to the overrepresentation of these groups in lower socioeconomic categories.¹⁸ Bassett and Krieger¹⁹ found that differences in survival times between African American and Caucasian women with breast cancer disappeared when social class was controlled. It has also been noted that in some cases socioeconomic disparities in health persist among ethnic groups even when the socioeconomic effects are controlled. Until there is more systematic investigation of socioeconomic status as a confounding variable, the extent to which the effects of economic impoverishment explain the health disparities observed for certain groups in the United States remains unclear.

Measurement problems

Finally, there are issues surrounding the measurement of socioeconomic status. Education, occupation, and income are commonly used indicators of socioeconomic status, and each of these has particular strengths and weaknesses. Liberatos, Link,

and Kelsey²⁰ examined these three measures in an extensive literature review and concluded that for some health conditions the particular social status measure chosen would be likely to affect the relationship observed, whereas for other health conditions the relationship with social class was so strong that the particular type of measure used would not matter. Winkleby and associates³ examined correlations among education, income, and occupation and a set of cardiovascular risk factors including cigarette smoking, systolic and diastolic blood pressure, and total and HDL cholesterol. They found positive correlations among the three socioeconomic indicators ranging from 0.23 to 0.67 with the strongest being between education and occupation and the weakest being between education and income. All correlations among the indicators were stronger for men than for women. Although significant associations among all three indicators and certain risk factors were found in univariate analysis, when a forward selection regression model was used, only education was found to be significantly and inversely associated with the risk factors.

Although education is reported as the measure of social class most frequently used in epidemiologic studies,²⁰ its usefulness in certain populations may be lessened owing to increasing homogeneity in educational levels. The percent of the US population with at least a high school degree was approximately 75% in 1986, reflecting a decreased stratification of the population based on education.² Also, the low correlations observed between education and income suggest that education may no longer be as sensitive an indicator of socioeconomic status as it once was. Gender and eth-

nic disparities in poverty rates persist even among the well educated. The average college-educated woman has been reported as earning less than a male high school dropout.²¹ Poverty rates for families whose heads of household had at least 1 year of college have been reported as 11.2% for African Americans, 7.8% for Hispanics, and 2.9% for Caucasians.² Education is considered to have an impact on health through its influence on life-style behaviors, problem-solving capacity, and values,²⁰ qualities that are not solely dependent on economic resources. The effects of economic impoverishment on health may not be clearly revealed when education is the only socioeconomic status indicator used.

Occupational status is frequently determined through the use of classification systems in which occupations are ranked according to certain criteria such as prestige, median income, and median education. Occupational scales have been critiqued for their failure to reflect current occupation patterns, the idiosyncratic nature of prestige determinations, and potential ethnic and gender bias.²⁰ Scales developed on the basis of a male labor force may not clearly depict the distribution and status of women in the labor force. In the study by Winkleby and colleagues³ for example, men were fairly evenly represented across occupations while approximately 75% of the women employed outside the home held nonprofessional white-collar jobs. Occupational scores for African Americans in comparison to Caucasians differed so widely in a study by James and colleagues²² that separate operational definitions of high and low socioeconomic status were developed.

Income level would seem to be the most straightforward indicator of socioeconomic

status, yet it is also problematic as it is less stable over time than the other measures, it is age dependent, and it is a sensitive topic and is thus associated with higher refusal rates.²⁰ Problems with comparability can occur unless family size and cost of living are also taken into consideration. The poverty threshold used by the US Census Bureau is specified so that family income should be sufficient to provide an adequate diet. The threshold depends on the size of the family and is adjusted each year to the consumer price index.² Poverty levels can be used as a base to create income categories that are comparable despite family size and year of measurement and are consequently more useful than annual income alone.

When examining the relationship between socioeconomic status and health, it is important to consider the strengths and weaknesses of the socioeconomic status indicator used as well as the possibility each indicator may be associated independently with particular health outcomes. In addition, it has been argued that the theoretical bases for the measures of social status and class used in health investigations need to be identified and evaluated.²³ Morgenstern notes that although the terms *social status* and *social class* are frequently used interchangeably, they actually represent different conceptualizations of social ranking. Status indicates ranking according to prestige, which is often based on educational and occupational achievements. Class, on the other hand, is more frequently viewed as having an economic base and is thus reflective of differentials in the accumulation of power and wealth. Williams contends that education, occupation, and income represent "objective and distinct dimensions of social stratification,"^{7(p83)} and are not simply indi-

cators of social status or social class. Liberatos and associates²⁰ recommend that based on evidence of the multifaceted nature of social stratification, at least two indicators should be used to measure socioeconomic status. Combinations of individual indicators that can then be analyzed using multivariate statistical techniques are considered the most inclusive. Other measures that may tap additional dimensions of socioeconomic status, such as perceived income adequacy, perceived standard of living, material resources, and geographic area of residence, have also been found useful and warrant further examination.²⁰

CONCEPTUAL ISSUES

Explanations of the link between income and health can be viewed as fitting into three major categories. First are those explanations that focus on access to medical care and the disadvantaged position of the poor in obtaining quality health care. A second category includes those explanations that center on individual behavior and life style. According to these explanations, certain personal characteristics and behaviors associated with poverty are responsible for the poorer health of those with low incomes. Finally, some explanations consider the effects of the physical and social environment as primary and view the relationship between poverty and health as determined within this broader context. The theoretical or empirical bases for the particular conceptual approach taken is often not explicit in investigations into the relationship between socioeconomic status and health. Although all of these explanations are important and essentially overlapping, the first two have been given far greater attention in the litera-

ture than the last. Support for each of these explanations and the implications for their use as conceptual frameworks to guide investigation of the health risks associated with economic impoverishment will be described briefly.

Access to health care

Looking first at disparities in access to health care, it is evident that the poor encounter a number of barriers in their efforts to obtain health care services. A major barrier is lack of health insurance. Over 32 million Americans, 15% of the US population under 65, are uninsured.²⁴ Medicaid, initiated in 1965 under the Social Security Act, insures the poorest of the poor, but benefits differ from state to state and as the number of people living in poverty has increased, the number covered by Medicaid has remained fairly constant.²⁵ Economic impoverishment, therefore, is associated with a lack of health insurance as evidenced by an uninsured rate of 30% for those living below the poverty threshold and 61% for those with incomes less than twice the poverty level.²⁴

Secondly, though insurance can lessen the financial burden of health care for the poor and is clearly associated with the utilization of needed medical care services, the poor pay a disproportionate amount of their income for out-of-pocket health care expenses with even fairly small medical costs imposing a substantial financial burden.²⁵ Those working in unskilled occupations often must forfeit wages in order to seek health care during the hours in which services are available. Both the insured and uninsured poor have been found to be more likely than the nonpoor to delay or sacrifice preventive and routine ambulatory care for economic

reasons.²⁶ The economically impoverished frequently “pay” in time and convenience for the services they do receive as they face not only increased travel time but long waits in outpatient clinics. In Duffy’s²⁷ study of female-headed one-parent families of whom 68% had an annual income of less than \$10,000, time was by far the most frequently mentioned barrier to preventive health practices.

The services themselves are often lacking. Increasing numbers of privately practicing physicians refuse to treat Medicaid patients, and many of the economically impoverished must rely on community or hospital-based clinics for their care. Faced with increasing demand for services at a time when government contributions are declining, these clinics are being forced to curtail services, and it is nonurgent preventive care that is sacrificed first.²⁸ Providers cite inadequate payment by Medicaid as one of the factors that discourage them from including preventive and educational activities in the services provided low-income clients. Thus, outpatient care is often limited to treating current medical problems.²⁹ Language barriers and minimal attention to cultural diversity can further compromise care for members of low-income minority groups.

According to the health care access explanation, the poorer health of those living in poverty in the United States is largely attributed to their failure to receive adequate medical care, and research based on this model has focused on the identification and modification of factors that impede or facilitate the obtaining of health services. Unfortunately, access to health-related services and products outside the medical care system is often not considered in these studies. The economically impoverished are also

less able to take advantage of alternatives to medically provided preventive care such as weight loss programs, health clubs, and consumer literature.

Access issues figure prominently in the health goals for the nation described in *Healthy People 2000*,¹ as well as in *Nursing’s Agenda for Health Care Reform*.⁸ However, there are those who argue that the role of medical care in improving health has been overrated and that behavior and environment are more powerful determinants.³⁰ Wing³¹ notes that despite the National Health Service in Great Britain and the accessibility of basic affordable health care to the population, widening social inequalities in CHD mortality are occurring. Kim and Moody,³² analyzed data from 117 countries and concluded that socioeconomic resources accounted for significantly more of the variance in infant mortality rates than did health resources. The data clearly describe disparities in access to health care, yet the elimination of economic impoverishment as a health risk is not likely to be achieved through equal access to medical services alone.

Behavior

Life style has been implicated as an important determinant of morbidity and mortality due to CHD and other leading causes of death in the United States, and changing individual behavior has become a major focus for public health policy. A number of explanatory models emphasize individual responsibility for health. Models such as the Health Belief Model³³ and the Health Promotion Model³⁴ stress the importance of personal attributes such as knowledge, perceptions, and motivation in determining health-related behavior.

Although some authors have pointed out that the relationship between changes in preventive health behavior and improved health has not been clearly demonstrated,³⁵ the assumption that life-style changes are important in improving health status is fundamental to the health behavior perspective. Based on this assumption, a substantial amount of nursing research has focused on identifying the determinants of health behavior and testing effective strategies for changing individual and family life styles.³⁶ In general, there has been support for many of the constructs contained in the various health behavior models; however, much unexplained variance in health practices remains, suggesting that there are variables that have either not yet been incorporated in existing models or have not yet been sufficiently examined.^{37,38}

A life-style perspective centers on differences in behavior between the poor and the nonpoor as a potential explanation for the poorer health of low-income groups. The increased prevalence of risk factors related to life style such as smoking, obesity, decreased physical activity levels, and uncontrolled high blood pressure among lower socioeconomic groups lends support to this perspective. It has been consistently reported in the literature that the likelihood of engaging in health promotive behaviors increases with socioeconomic status.³⁸ Rather than these findings being viewed as evidence of the impact of the larger social structure on individual behavior, there has been a tendency to focus on the personal failures and deficiencies of the impoverished in relation to societal norms for health behavior and personal responsibility.

Individualistic health behavior models have been critiqued for their narrowed

scope and "downstream" perspective and their emphasis on personal autonomy and responsibility regardless of the unequal distribution of resources.³⁹ Crawford⁴⁰ points out that when the problem of poor health and its solution are located in the individual, then serious discussions of social or environmental factors can be averted. He suggests that the crisis in health care costs makes this a particularly attractive alternative to addressing inequalities in access to medical services. Based on her review of the primary motivational models that have been used to explain and predict cardiovascular risk reduction, Fleury concludes that these models "do not allow for an investigation of the patterning of human behavior in interaction with the environment, including the influence of factors which may prohibit the individual from initiating and sustaining behavior change."^{41(p237)}

Despite the limitations of the health behavior models, the substantial amount of data linking life-style behaviors and health indicate that behavioral explanations cannot be disregarded. Based on their secondary analysis of national data samples, Slater and Carlton contend that socioeconomic status and health practices have independent effects on health status and that "neglecting either planned social change or strategies to modify health behaviors would indeed be short-sighted health policy."^{35(p32)} Williams⁷ proposes that socioeconomic status also influences health indirectly through psychosocial factors, including health practices and life style, but notes that the links between socioeconomic status and health behavior have not been systematically explored. Nursing investigations describing the processes through which the health practices of the socioeconomically disadvan-

taged are shaped by the larger social environment are urgently needed.

Environment

Lindheim and Syme define the environment as “a result of the constant interaction between natural and man-made spatial forms, social processes, and relationships between individuals and groups.”^{42(p337)} According to this definition, people are an essential part of the environment and social conditions are as important as physical surroundings. Chopoorian advocates a conceptualization of the environment as “the landscape and geography of human social experience.”^{43(p47)}

Traditionally, health has been related to the physical environment. In the past, sanitation and hygiene were powerful determinants of the acute infectious diseases that were the primary causes of morbidity and mortality, but in developed countries today it is the effects of industrialization that are now of greatest concern.⁴² The economically disadvantaged are more likely to be exposed to air pollution, excessive noise, and lead poisoning.¹² Residents of poor urban neighborhoods face increased threat of accidents, crime, and violence.¹²

Lack of adequate income also reduces the access and control the economically impoverished have over environmental resources basic to survival, such as sufficient food, clothing, shelter, and transportation.^{9,10} The low-income housing available to the poor is often described as crowded, poorly maintained, lacking in esthetics, and isolated from central resources.^{11,42} Social stratification results in the concentration of the poor in low-status, physically demanding, and less rewarding jobs in which they also experience greater risks of unemployment, expo-

sure to occupational hazards, and increased psychosocial stress.^{12,42}

The number and strength of social ties and supportive relationships have been related to health in a number of studies.⁴² In a study by Romano, Bloom, and Syme,⁴⁴ smoking prevalence was significantly increased for urban African American women with poor social networks. Constant subjection to discriminatory behavior in interactions with others can increase stress and social isolation, both of which have been related to poorer health.¹² Hibbard⁴⁵ found that social ties, trust in others, and perceived control were all positively related to health status and concluded that the elderly, women, and those in lower social classes were particularly at risk. Increased social ties, however, may have negative as well as positive effects on health, and low-income women may be particularly vulnerable to stress associated with relationships. As noted by Pesznecker, “for low-income women, family and friends and intimate relationships all seem to pose problems that may be more frequent or of greater intensity and duration than for women with more resources.”^{11(p241)} The social networks of low-income women have been reported as providing similar amounts of stress and support, so that even when impoverished women are involved in supportive social networks, this involvement can be extremely stressful.⁴⁶

An understanding of socioeconomic disparities in health from an environmental perspective requires investigation of the effects of economic impoverishment on populations as well as on individuals. Ecological frameworks have been useful in examinations of population characteristics in relation to mortality rates for particular health conditions.^{47,48} Using US census data, Park

and Clifford⁴⁷ examined the impact of physical and social environmental factors, sustenance activities, health technology, and demographic characteristics on cardiovascular mortality rates in all US counties. They found socioeconomic status, measured using a composite scale that included income and education indicators, to be the single most important determinant of mortality for both males and females. The relationship was in the expected direction, with economically disadvantaged counties experiencing higher mortality rates than wealthier counties. In contrast, increased availability of physicians and hospital beds was associated with increased mortality rates for both sexes. In an analysis of survey data for population subgroups in the United States, Casper and colleagues⁴⁸ found declines in stroke mortality to be more strongly associated with improvements in socioeconomic status indicators than with increased antihypertensive therapy.

Ecological studies can provide support and direction to public health approaches to improving health through the modification of environmental factors. As noted by Chopoorian,⁴³ however, conceptual frameworks to guide nursing research and practice that target environments as opposed to individuals are lacking. Pesznecker¹¹ proposes an adaptational model of poverty derived from the stress and coping literature. According to Pesznecker's model, adaptive responses to personal and environmental factors are mediated by public policy and social support factors and can be described as either health promoting or health damaging. Pesznecker maintains that the focus of the adaptational model of poverty is on "changing environmental factors and strengthening or changing the mediating

factors (public policy and social support) rather than changing the individual person's behavior."¹¹(p245) Although Pesznecker's model does include categories of environmental factors suggested by Chopoorian, such as social and political structures and human social relations, the adaptive responses considered as outcomes are essentially individual psychologic reactions and are not clearly connected to population level health outcomes. There are considerable conceptual difficulties in incorporating both a sociopolitical and an individual perspective in frameworks structuring investigations of the relationship between economic impoverishment and health from an environmental perspective.

A clearer understanding of the impact of the environment on the health of the poor may be gained through the development and use of level-specific models as described by McKay and Segall.⁴⁹ They propose that an aggregate model that considers the community as target can be used to identify health problems at the population level and that these problems can then be validated at the family, group, or individual level using models that represent the community as context or environment. This is consistent with Morgenstern's²³ suggestion that the results from both microlevel and macrolevel analyses can be combined in investigations of socioeconomic factors and health. The linking of multilevel data in efforts to unravel the complexities of the relationship between the environment and the poorer health outcomes of the economically impoverished raises a number of methodologic questions and suggests yet another direction for nursing research.

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There is a need to move beyond consideration of socioeconomic status as a variable to be controlled and to examine the relationship between economic impoverishment and health more carefully in light of the methodologic and conceptual issues explored in this article. Suggestions to enhance further investigation of this relationship include

- Evaluation of the strength and nature of the reciprocal effects of economic impoverishment on health
- Exploration of the links between economic impoverishment and health through analysis of confounding and indirect effects as well as direct effects
- Selection of measures that reflect the multifaceted nature of socioeconomic status, are theoretically congruent with study aims, and are appropriate for the

population of interest

- Identification and clarification of the conceptual frameworks guiding inquiry into the relationship between economic impoverishment and health

Definition of economic impoverishment as a modifiable health risk is crucial to nursing, as nursing is committed to protecting and improving the health of disadvantaged populations. Moccia and Mason contend that "since most of society's poverty policies and programs are ostensibly based on research findings, the clarity, or its lack, in nursing's choice is critical in health care for the poor."^{10(p21)} Ideas about the inevitability of poverty, unequal access, unhealthy life styles, substandard living and working conditions, and poor health are reinforced when the relationships among these conditions are not fully examined or understood.

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