Lifestyle, Conditions of Life, and Health Care in Urban and Suburban Areas

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PROPOSALS TO REDUCE MORBIDITY AND MORTALITY have been traditionally directed at the health care delivery system. Such approaches as restructuring the system, improving access to it, and increasing the supply, quality, and distribution of manpower have been suggested (*1*). Government health policies reflecting these approaches have included the development of financing mechanisms (Medicaid and Medicare), neighborhood health centers, health maintenance organizations, area health education centers, and the National Health Service Corps.

Evidence regarding use of ambulatory health care services indicates that access is becoming more equitable. In contrast to the early 1930s when low-income people were seeing a physician half as often as high-income people, in 1976 people of low income were seeing physicians slightly more often than those of high income (*2*).

More recently, attention has been directed to nonhealth service determinants of health status (*1,3,4*). Health workers have begun to focus on individual behavior patterns, or "lifestyle," as major determinants of health status (*4–6*). Exercise, diet and nutrition, smoking, use of alcohol and drugs, and stress are key components of this lifestyle approach.

Others have pointed out the importance to health of social, environmental, and economic factors (*7–10*). The long-observed inverse relationship between mor-

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bidity and mortality and social class still remains, but it may be weakening with increased access to services and higher living standards, (*7,11,12*).

The determination of the relative contribution of these factors—access to care, preventive health behaviors, as well as socioeconomic and environmental differences—to health status has profound implications for decisions concerning health policy.

We examined the preceding variables from data collected in a survey of social needs of persons residing in different areas of Greater Boston. In Boston, as in other communities, geography is generally related to socioeconomic status, the latter rising progressively from the core city to the outer suburbs (*13*). In addition, in a previous study higher mortality rates were seen for two mental health catchment areas in the core city of Boston (*14*). We expected residents of the areas from Boston's core city to its outer suburbs to differ in reported health status, and we wished to compare the use of health services, lifestyle health habits, and everyday problems and concerns.

Methods

Data had been obtained through a comprehensive household survey in the Boston standard metropolitan statistical area (SMSA) conducted in late 1975 by the United Community Planning Corporation and the Combined Jewish Philanthropies. The survey employed an area probability sample designed to reflect the current population characteristics, attitudes, and needs of the Greater Boston community. The final sample included 1,043 randomly selected respondents (age 18 years or older) in 52 cities and towns.

We classified respondents according to their residence in one of four areas: (*a*) the core city, comprised of two mental health catchment areas that had been noted previously to have higher mortality rates than the rest of the city (*14*), (*b*) the remainder of the city, (*c*) suburbs within the city's circumferential highway, and (*d*) suburbs outside this belt highway. For convenience, these areas are designated as the core city, other Boston, the inner suburbs, and the outer suburbs. We examined total population differences among the four groups, which were similar in age and sex composition.

Findings

Social and economic characteristics. For all social and economic variables examined, there were statistically significant differences ($P<.001$) among the four groups of respondents. As shown in table 1, the core city and outer suburban respondents—almost without exception—were at opposite extremes on each indicator studied, and the proportions of respondents in each category decreased monotonically with increasing distance from the core city. The core city had the highest proportions of persons who did not complete high school; who were in semiskilled, service, and unskilled occupations; whose family incomes were less than $5,000; who were renters rather than home owners; and who were members of minority groups. These findings met our expectations that the geographic differences studied reflected major differences in socioeconomic conditions.

Health status. Among the four groups, perceptions of their health status—excellent, very good, good, or fair or poor—differed significantly ($P<.01$). Respondents from the core city were most likely to view their health as fair or poor (23 percent versus 17 percent in

Table 1. Social and economic characteristics, by place of residence (percentage of respondents)[1]

Characteristic	Core city	Other Boston	Inner suburbs	Outer suburbs
Education: less than high school graduate	48.7	28.2	24.2	14.1
Occupation: semiskilled, service, and unskilled	52.6	35.6	27.5	22.7
Occupation: neither respondent nor spouse of respondent is working[2]	51.7	36.4	25.7	19.6
Income: less than $5,000	47.6	27.8	14.6	11.5
Low social class[3]	51.4	33.0	26.9	19.9
Rent home	85.3	71.7	46.5	19.3
Living in two-spouse household	28.4	44.8	58.6	68.5
Marital status: not married	68.7	55.4	41.7	32.0
Minority population	58.6	24.1	3.1	4.2

[1] This table represents answers to 8 questions. With the exception of income, the numbers of respondents on which the percentages are based range from 111 to 116 in the core city, 200 to 214 in other Boston, 461 to 478 in the inner suburbs, and 226 to 235 in the outer suburbs. For income, the numbers of respondents were 103, 180, 411, and 208, respectively. Chi-square analyses revealed statistically significant differences ($P < .001$) for all variables.

[2] Includes unemployed, laid off, retired, students, keeping house, and those who have never worked.

[3] Hollingshead Social Class V (*21*).

both the other Boston and inner suburbs groups and 8 percent of those in the outer suburbs).

Use of health services. The respondents were asked if a physician had been seen, if standard tests had been administered, and where medical care was obtained for themselves and their children. No statistically significant differences were seen among the groups on any of these measures of use of health services. In fact, although the differences were minimal, the core city residents were more likely—within the past year—to have had a consultation with a physician about their health (83 percent), a physical examination (66 percent), a blood pressure measurement (81 percent), a blood sample taken (71 percent), and a urine test (71 percent). Of the core city women, 83 percent had had a Pap test at least once, 67 percent within the past year.

Although use of health care services was basically the same, the four groups differed with regard to location of these services. Statistically significant differences beyond the .001 level were found among the groups concerning where they obtained medical care for themselves and for their children. Of the core city respondents, 45 percent went to a hospital clinic or emergency room, 18 percent used a neighborhood health center, and 26 percent used a physician's office. In contrast, half the other Boston respondents, 75 percent of those from the inner suburbs, and 82 percent from the outer suburbs used a physician's office. The same pattern of location of medical care was seen for the children of respondents, except for those in the core city who depended more on neighborhood health centers.

Lifestyle health habits. Data were available on the four groups for each of four major areas of health habits—exercise, diet, smoking, and alcohol and drug use (table 2).

For exercise, the difference in the proportion of respondents who reported participating in any physical activity was significant among all groups ($P<.05$), with the highest proportion in the outer suburbs group (69 percent). However, no differences were found among the groups on "very active during the day."

We did not have specific weight and height information. However, we were able to ascertain whether respondents thought their weight was about right and, if not, the amount of weight they would like to lose. Although there was no statistically significant difference among the groups of respondents who reported their weight was about right, there was a significant difference ($P<.001$) in their desire to lose more than 15 pounds; 27 percent of the core city respondents expressed this desire compared with 13 percent of those in the outer suburbs.

The difference in cigarette smoking was significant among the groups ($P<.01$). The proportion of respondents who reported that they were cigarette smokers was highest within the city (close to half of

Table 2. Lifestyle health habits, by place of residence (percentage of respondents)[1]

Health habit	Core city	Other Boston	Inner suburbs	Outer suburbs	x^2 difference
Exercise:					
Very active during day	43.9	43.6	43.8	50.2	N.S.
Participates in physical activity(ies)	59.6	57.3	58.5	69.3	$P<.05$
Weight:					
Weight is about right	37.4	51.2	41.8	46.8	N.S.
Would like to lose more than 15 pounds	26.7	11.7	19.2	13.2	$P<.001$
Smokes cigarettes	47.8	46.5	40.7	32.3	$P<.01$
Drinking behavior:					
Abstainer or infrequent drinker	49.5	37.1	31.1	24.6	$P<.001$
Light or moderate	25.2	38.1	47.8	50.7	
Heavy	25.2	24.8	21.1	24.7	
Prescription drugs:					
Takes to relax	15.7	14.6	16.2	11.2	N.S.
Takes to sleep	7.0	4.7	4.0	4.7	N.S.
Takes amphetamines	7.8	3.3	2.5	1.7	$P<.02$

[1] This table represents answers to 10 questions. The numbers of respondents on which the percentages are based range from 107 to 116 in the core city, 202 to 213 in other Boston, 456 to 478 in the inner suburbs, and 219 to 235 in the outer suburbs.

NOTE: N.S. indicates not significant.

both core city and other Boston respondents) and lowest in the outer suburbs group (less than one-third).

Based on responses to two general questions concerning alcohol use, respondents were classified by drinking behavior (*15*). This classification resulted in a significant difference ($P<.001$) among the groups. Although the proportions classified as heavy drinkers were basically similar for the four groups, core city respondents had the highest proportion of abstainers and infrequent drinkers (50 percent); the proportion decreased with increasing distance from the core city. The four areas showed the opposite trend for the proportion of light and moderate drinkers.

Three questions in the survey concerned the use of prescription drugs. Only for amphetamines was there a significant difference among the four groups ($P<.02$); the core city respondents were most likely to report the use of this substance and the outer suburbs group the least.

Life problems and concerns. Although we could not measure stress directly in this study, we could measure one aspect of stress that might differ among residents of different geographic and social areas—that which is associated with social and neighborhood problems.

Compared with other respondents, a higher proportion of those in the core city reported problems in each of eight problem areas examined (table 3), and significant differences were found among the groups for five of these areas. Other analyses indicated that 69 percent of core city respondents reported problems in at least

Table 3. Problems encountered in the past year, by place of residence (percentage of respondents)[1]

Problem	Core city	Other Boston	Inner suburbs	Outer suburbs	x^2 difference
Within household:					
Money	32.8	19.4	11.6	7.7	$P<.001$
Need for home nurse	10.4	3.3	4.0	3.0	$P<.01$
Job	30.2	24.5	19.1	18.7	$P<.05$
Personal, family, or marriage	26.5	21.1	15.4	14.9	$P<.02$
Home uncared for during illness	12.1	7.1	6.1	3.4	$P<.02$
Child	27.7	16.3	20.3	25.8	N.S.
Other:					
Drinking by close relative or friend	19.3	13.7	12.5	10.6	N.S.
Elderly relative living independently	14.7	13.1	10.3	14.5	N.S.

[1] This table represents answers to 8 questions. With the exception of child problems, the numbers of respondents on which the percentages are based range from 113 to 116 in the core city, 211 to 214 in other Boston, 473 to 477 in the inner suburbs, and 234 to 235 in the outer suburbs. For problems with children, the numbers of respondents were 47, 49, 143, and 89, respectively.

NOTE: N. S. indicates not significant.

Table 4. Mean level of concern[1] about neighborhood conditions[2]

Condition	Total sample	Core city	Other Boston	Inner suburbs	Outer suburbs	Analysis of variance: all groups
Crime rate	5.09	2.86	4.30	5.69	5.76	$P<.01$
Cost of housing	5.32	5.22	5.20	5.40	5.30	N.S.
Air cleanliness	5.72	3.96	4.08	6.00	7.47	$P<.01$
Street cleanliness	6.01	3.54	4.53	6.52	7.53	$P<.01$
Public schools	6.19	4.15	3.75	6.96	7.23	$P<.01$
Proximity of playgrounds and parks	6.29	5.35	5.02	6.84	6.72	$P<.01$
How neighbors keep property	7.09	5.01	6.45	7.36	8.14	$P<.01$
Convenience to work	7.53	7.43	7.04	7.74	7.56	N.S.
Convenience to shopping	7.64	6.39	7.35	8.14	7.50	$P<.01$
Size of home	7.70	6.89	7.34	7.91	8.00	$P<.01$
Composite community satisfaction	N.A.	5.03	5.64	6.88	7.20	$P<.01$

[1] The scale ranged from 1 ("don't like it at all") to 10 ("exactly as I like it").

[2] This table represents answers to 10 questions. The numbers of respondents range from 72 to 115 in the core city, 102 to 212 in other Boston, 303 to 474 in the inner suburbs, and 160 to 233 in the outer suburbs. Low numbers are for questions that exclude cohorts from responding (for example, public schools and convenience to work).

NOTE: N.A. indicates not applicable; N.S. indicates not significant.

one area, whereas slightly more than half of all other respondent groups reported none; this difference was significant ($P<.001$). Among the core city respondents who reported at least one problem, the majority (60 percent) reported more than one.

Respondents' concerns about selected neighborhood conditions are summarized in table 4. Significant differences ($P<.01$) among all groups were found for eight concerns and for a composite index of community satisfaction. In almost all instances, the respondents in the core city showed the greatest number of concerns; as distance from the inner city increased, the number decreased.

When asked to rate their overall satisfaction with their neighborhood as very, fairly, or not very satisfied, core city residents were less satisfied than other groups: 28 percent were not very satisfied compared with 18 percent of other Boston, 7 percent of the inner suburbs, and 3 percent of outer suburbs respondents. Conversely, the proportion who were very satisfied ranged from 71 percent of outer suburbs respondents to 56 percent of inner suburbs, 41 percent of other Boston, and 26 percent of the respondents in the core city. This difference was significant ($P<.001$).

Discussion

This study provided an opportunity to examine the association of use of the health care system, lifestyle health behaviors, and socioeconomic factors with health status reported by residents of the Greater Boston SMSA.

Use of health services was similar among respondents from each of the four areas in the Greater Boston SMSA. Although not significantly different, respondents from the core city were the most likely to have used these services within the past year; yet, they were significantly more likely to report fair or poor health.

While patterns of use did not differ, sites of care did. The dependence of the inner-city population upon hospitals and health centers (which are available only in the city) for their care, as documented in this study, must be an important consideration in the formulation of health policy. This dependence requires health planners and administrators to examine how best to guarantee the continuation of these institutions or to provide acceptable substitutes.

In terms of the health habits that we examined, the findings suggest that respondents from the outer suburbs in certain respects have adopted healthier lifestyles than the respondents from the other areas. For example, of the four groups of respondents, outer suburbs residents were the least likely to report that they smoked cigarettes, the most likely to report participation in physical activity, and the least likely to take prescription drugs to relax or to take amphetamines. They were also not likely to wish to lose more than 15 pounds.

Although the lifestyle findings are presented by place of residence, they should also be viewed within the context of the social and economic differences among the groups of respondents. Our study replicated previous studies relating drinking behavior to social class (*16*), smoking to education and social class (*17*), and obesity to social class (*18*). The difference noted with respect to exercise may reflect a greater opportunity and more facilities for exercise in the outer suburbs.

Overall, however, the differences among the groups in lifestyle health habits were not dramatic. Nonetheless, the potential for health improvement across all groups through healthful lifestyles should not be overlooked, since it is possible that health interventions might be better directed at behavioral factors than at health care. Further research in this area is needed.

The most notable differences among the core city, the rest of Boston, and the suburban areas were in the respondents' social and economic characteristics, problems, and concerns about one's neighborhood. These differences no doubt represent a realistic assessment by respondents of their situations. However, this study did not establish a causal line between these characteristics and the excess mortality for the inner city reported in another study (*14*): it leaves unresolved the choice between the two alternative epidemiologic explanations of the findings—"drift" versus "social causation." Do people live in the core city because they have social problems and illness, or do they have these problems as a result of living there? However, whether or not the social problems cause stress, they are characteristic of populations residing in the core city.

One should note that our findings with regard to place of residence assume a constant age and sex differential across the responses to each question. Although our data did not show age and sex differences across the four geographic areas, such differences may exist with respect to specific questions.

It is clear from this study that strategies to improve health are different for various geographic and social subgroups within a metropolitan area. In particular, health status in the core city may be improved by dealing with nonhealth systems such as employment, housing, and social supports. One report of a study

that links increases in unemployment with mortality notes, "Advances in the economic system have historically been the most important sources of improved health status both on international and national levels" (*19*). Obviously, potential health consequences should be considered in the formulation of social and economic policy. Government officials, physicians, and other health care providers must consider the pressing need for greater investments in improving the social, environmental, and economic conditions that affect health (*20*). These factors demand a higher priority than more dollars for more medical care if concerned health workers hope to alleviate the pressing problems that beset so many residents in the core city and other areas with similar characteristics. These and other differences must be taken into account by local boards of health and health planning agencies if they wish to develop effective programs for their various constituencies.

Summary

The association among social and economic characteristics, use of the health care system, health habits, life problems, and reported health status were examined in a survey of Greater Boston area residents. The respondents were classified according to their residence in the core city, the remainder of the city, the inner suburbs, or the outer suburban areas.

For all social and economic variables studied, significant differences among the four subgroups increased with increasing distance from the inner city, where respondents were most likely to be of lower socioeconomic status. No statistically significant differences were found with regard to use of health services, although the places where medical care was obtained differed. In terms of health habits, the findings suggest that outer suburban respondents exhibit somewhat healthier lifestyles, particularly with respect to smoking cigarettes and exercising. Respondents in the core city reported significantly more problems encountered, the greatest concern with their neighborhoods, and the least satisfaction with their neighborhoods. They were also most likely to report poorer health.

As to the relationship between the findings and health policy, strategies to improve health must be different for various geographic and social subgroups within a metropolitan area. Social, economic, and environmental conditions demand a higher priority than more dollars for medical care if the pressing problems of residents in the core city are to be alleviated. Health planners and government agencies must take these factors into account if they are to develop effective programs for their particular constituencies.

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