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Child Dental Health and Parental Attitudes and Behaviors toward Children's Dental Health with Emphasis upon Socio-Economic Class and Eligibility for Free Public Dental Health Care

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CHILD DENTAL HEALTH AND PARENTAL ATTITUDES AND BEHAVIORS TOWARD CHILDREN'S DENTAL HEALTH WITH EMPHASIS UPON SOCIO-ECONOMIC CLASS AND ELIGIBILITY FOR FREE PUBLIC DENTAL HEALTH CARE

by

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CHAPTER I

UTILIZATION OF DENTAL CARE FACILITIES

Introduction

The following research has grown out of a concern with dental health and services provided to the dentally indigent in Kalamazoo County. Although efforts are being made to provide dental care services for the school children many problems and unanswered questions exist. Consideration has not been given to care given by parents, what kind or how much, nor has any effort been made to determine whether those who could qualify for public care know of its availability or would use a public facility. No investigation has been undertaken to determine what barriers, social or psychological, may prevent parents from acquiring dental care for their children, either in the clinic or privately. Nor has any attempt been made to discover what behaviors related to dental health care are considered important by parents. This study addresses itself to these concerns; what dental health care services are children in various segments of the community receiving, and in instances of little or no care what reasons underlie this lack.

A dental clinic is operative in Kalamazoo County. It is open Monday through Friday, 8:00 a.m. to 5:00 p.m., and is intended to serve children through the age of 18, free of charge if they are determined financially eligible. Evaluative services are provided for all city school children in grades two and five when they are

examined by a dental hygienist. The same service is provided in the pre-school clinics, which are free and optional for those ready to begin kindergarten. In the target area schools dental health evaluations are made yearly and one school provides a clinic for the cleaning of teeth. Nursery school and Head Start children also receive dental examinations and care is provided for those in Head Start.

It is recognized that although these various services are provided in the community this does not guarantee utilization. The act of obtaining health care of any sort can be seen as an extremely individual or personal matter. However, the decision to do so is presumed to be influenced greatly by socio-cultural factors. It is naive to assume that "given the facts about a disease and provided with a measure for combating it, the public will proceed logically to take advantage of the proffered health program."[1] The individual does not act on factual information alone but on attitudes and values developed in his social environment. It is suggested that these attitudes and values determine such things as the seeking of routine, preventive health care or consulting a health professional only when ill, and how the individual comes to define himself as ill. It is further suggested that, while these decisions are individual decisions, groups of individuals with similar environments and life experience will arrive at similar decisions. From these like

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[1]Suchman, Edward Allen, Sociology and the Field of Public Health. New York: Russell Sage Foundation, 1963, p. 8.

decisions patterns of health care behavior will emerge which vary from one segment of the population to another.

As a final note of introduction it should be mentioned that much of the material which will be cited is from work dealing with medical, not dental, problems. The assumption has been made by this researcher that the social and psychological states determining attitudes and behavior in dental care are essentially the same as those involved in the decision to seek medical care. This is not to imply that the same value is placed on dental as on medical care. Anderson suggests that:

> Relative to other personal health services and goods and considering the overwhelming need for dental care in the population, the utilization of dental services is low. This is true even for upper income groups. During the last generation there has been only a slight increase in the use of dental services as measured by people who see a dentist at least once a year.[1]

What is implied is that the same processes and situational factors are involved in the decision to seek care--whether it is medical or dental.

Previous Research in Utilization of Medical and Dental Facilities

In considering the literature related to health care, and especially dental health, different behavior patterns do in fact seem to emerge for various segments of the society. Regardless of

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[1]Anderson, Odin Waldemar, "The Utilization of Health Services." In Freeman, Levine and Reeder (Eds.), Handbook of Medical Sociology. Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1963, p. 358.

the approach of the researcher, whether the question is what does a certain defined segment of the population do, or given a specific behavior pattern who engages in it, patterns are found unique to class strata and/or racial-ethnic minorities. The explanation of these variations does not appear to be solely income and a question of what can be afforded. Essentially the same patterns are in evidence when care is free through a public health program or must be paid for by the individual. Income appears to be merely one variable which raises or lowers the degree of effort involved in obtaining care.

A rather striking example of income levels not determining health related behavior comes from Britain where dental care is included in the National Health Service. It has been observed that the middle class is more health conscious and accepting of medical advice from professionals while the working class relied more on advice from neighbors. In a study designed to determine if the same pattern existed in terms of dental care, based on 140 working class and an equal number of middle class families, it was found that 72.0% of the middle class respondents visited dentists regularly, 27.5% for symptomatic reasons, and only 0.5% never went. Of the working class respondents 26.5% were regular patients, 68.5% symptomatics, and 5% did not go to dentists at all. When questioned about care for their children it was found that 46.4% of the middle class parents would consider having baby teeth filled, 31.2% of the working class families would. In his summary the author notes that:

> It appears that the middle class are making greater use of the Dental Service, although it is designed as a 'public' service. Dental treatment is still viewed by the working class as a 'luxury' service.[1]

The middle class is seen as concerned with "dental conservation, while the working class is more concerned with 'emergency treatment.'"[2]

Tash, O'Shea and Cohen[3] using Rosenstock's three necessary conditions performed a secondary analysis on NORC data for 1,826 adults in an attempt to determine which persons are likely to take preventive action as opposed to symptomatic action in the area of dental health. 'Preventives' were defined as those persons who had gone to a dentist within the past year for preventive purposes, 26% of the sample. 'Symptomatics' were those who had gone three or more years past for symptomatic reasons, 21% of the sample.

The findings were as follows: 1) those with a belief of low susceptibility were more likely to be 'preventive,'* 2) 41% of those considering dental problems highly serious were 'preventive' as opposed to 8% with low serious belief, 3) no significant relationship was found between availability-effectiveness beliefs and

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[1] Dickson, Stewart, "Class Attitudes to Dental Treatment." British Journal of Sociology, XIX (June 1968), 206-11.

[2] ibid.

[3] Tash, Rosalie H., O'Shea, Robert M., and Cohen, Lois K., "Testing a Preventive-Symptomatic Theory of Dental Health Behavior." American Journal of Public Health, LIX (March 1969), 517.

*This variable was eventually dropped as being too ambiguous.

preventive-symptomatic care, 4) a definite positive relationship was found between costliness as a barrier and lack of preventive care, 5) 19% of those expecting pain were 'preventive' as opposed to 36% not expecting pain (significant at .02), 6) 44% of those with high knowledge of dental health were 'preventive,' 8% with low knowledge, 7) women were found to be more 'preventive' than men, 8) younger persons more than older persons, 9) whites more than blacks, 10) urbanites more than rural, 11) persons with higher education, 12) persons with higher family income, 13) persons with higher standard of living.

The researchers developed summated scales of both social and psychological factors; the psychological including expectance of pain, belief in seriousness, dental health knowledge, and perception of economic barrier. The social factors were sex, education, race, income, SES, rural-urban. They found:

> striking evidence of the power of the two indexes to predict how people will distribute on the dependent variable, i.e., who would hold preventive and who would hold symptomatic orientations. People low on both indexes had almost zero probability of being preventive oriented, while 3 out of 4 of those people rated high on both were likely to be preventive.[1]

It has also been found that health knowledge is inversely related to age, higher for women than men (with education controlled), and as would be expected rises with education. In a recent study 81% of the college graduates were able to correctly explain the purposes of adding fluorides to water, only 28% of those with less

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[1]Tash et al., op. cit., p. 518.

than a high school education understood fluoridation. It was also found that printed materials were the source of more health knowledge than was TV.[1]

In a study of health care "styles," based on acceptance of eight health practices in rural and urban areas, Ellenbogen and Lowe found a significant difference. With controls for age and income the following was found: that residence (rural-urban) affects the health care style for both old and young and for those with low incomes. The respondents with high incomes were found to be more accepting of health practices regardless of residence, with or without a control for age.[2]

Boek and Boek in a four year study of health and medical care in 'Regionville' collected data on 514 families four times a year. These families were divided by social class--high, middle, low--and the following results obtained regarding dental care:

> Differences in use of dentists among the social classes . . . were quite evident . . . nearly all of I (high) households had a family dentist, while only 12% of class III (low) had one. Only 3 out of 363 children under six years of age in the study had seen a dentist during the year and two of these because of broken teeth. 86% of the school age children in class I, 57% in class II and 26% in class III had been to a dentist in the past year.

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[1]Wade, Serena E., "Trends in Public Knowledge About Health and Illness." American Journal of Public Health, LX (March 1970), 486-90.

[2]Ellenbogen, Bert L., and Lowe, George D., "Health Care Styles in Rural and Urban Areas." Rural Sociology, XXXIII (September 1968), 300-12.

> Class III people used the dentist primarily for pulling teeth or taking care of aching teeth when home pain killers failed to be effective.[1]

Using a five category division of social class, Nolan, Schwartz and Simonian investigated the use of clinics which served people on a drop-in basis or by appointment. Classes one and three were found to be evenly distributed in terms of appointment-drop-in visits, class II visits were 61% by appointment, classes IV and V were 57% and 63% drop-in respectively. It was also found that more than one half of the visits by white children were by appointment, while only one third of the visits by blacks and orientals were by appointment.

In looking at reasons for seeing a doctor in class I it was found that 48% came for reasons of 'health supervision' as did 60% in class II. In classes III, IV, and V increases in 'acute condition' visits were found. By ethnic group it was found that more whites came for health supervision than acute conditions, orientals were 2/5 health supervision to 3/5 acute conditions, and visits by blacks were 1/3 health supervision and 2/3 acute condition.

The authors conclude that there is "greater utilization of preventive services by upper social classes . . . for classes IV and V visits were made predominately to drop-in clinics." While noting that most blacks are in social classes IV and V the authors believe the behavior pattern to be an ethnic one rather than class,

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[1]Boek, Walter E., and Boek, Jean K., Society and Health. New York: Putnam, 1956, p. 143.

blacks are seen as using fewer preventive services, thus requiring more acute condition service on a drop-in basis.[1]

Robertson et al. came to a similar conclusion from data gathered in interviews with 4,320 families bringing children to a children's hospital emergency clinic. They found that blacks are less likely than whites to have a regular doctor for children, are more likely to use a public clinic for routine and acute care, and are less likely to indicate that children get the best care from clinics. Income, occupational status, education, region or origin, availability of doctors and attitude toward medical professionals and preventive care did not explain the results. In discussion the authors suggest that racial differences in health related behavior do not reflect merely SES differences but have developed as a result of years of caste-like segregation. They see the use of impersonal clinics rather than personal doctors as an indication of caution in personal relationships with whites which is manifested by blacks as a result of their experience with discrimination.[2]

The American Dental Association in a 1965 study of dental patients found that:

> On the average, Negroes required more fillings than did white patients. The need for extractions was much higher

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[1]Nolan, Robert L., Schwartz, Jerome L., and Simonian, Kenneth, "Social Class Differences in Utilization of Pediatric Services in a Prepaid Direct Service Medical Care Program." American Journal of Public Health, LVII (January 1967), 34-47.

[2]Robertson, Leon S., et al., "Race Status and Medical Care." Phylon, XXVIII (Winter 1967), 353-60.

> among Negroes . . . A smaller percentage of Negro patients had no dental needs other than prophylaxis than was true with white patients.[1]

Unlike Robertson, they conclude: "A considerable proportion of these deviations undoubtedly can be attributed to the differing average socioeconomic levels of the racial groups."[2] It was also found that persons with higher incomes visited a dentist more frequently than did those with lower incomes. A similar correlation was found between higher educational levels and frequent use of professional dental care. The authors suggest that the high correlation is due to the fact that "the more highly educated are more prone to realize the importance of regular care."[3]

The following year, the American Dental Association noted, in presenting its program for care for children:

> The utilization of dentists' services is related to family income, the educational level of the parents, the availability of dental services, the effectiveness of dental health education and the degree to which a dental program has been organized. Although family income may not be the principle reason that more children are not receiving dental care, 66% of the children in families with incomes under $4,000 have never been to a dentist, compared to 40% in families with incomes of $4,000 or more.[4]

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[1] Bureau of Economic Research and Statistics, Survey of Needs for Dental Care, 1965. Chicago: American Dental Association, p. 17.

[2] loc. cit.

[3] loc. cit., p. 32.

[4] American Dental Association, Dental Health Program for Children, as adopted by the House of Delegates of the American Dental Association, 107th Annual Session, Dallas, Texas, November 16, 1966.

In studying families seeking professional help for their children after referrals from school health examinations, Gabrielson, Levine and Ellison found no significant difference by social class. Nor were there significant relationships based on family structure, marital stability, occurrence of disorganizing events such as unemployment, relocation, religious differences or death of relatives. They did find that 89.2% of the families with health insurance sought help as opposed to 59% of the uninsured, a difference which was statistically significant. In the area of dental care a difference was found on the basis of prior care, this was not true of physical problems in general. All (9) children who had seen a dentist in the past year went again in response to the school examination referral, while only 54.5% (6 out of 11) of the others were treated.[1]

Project Head Start appears to have provided many researchers with an opportunity to investigate aspects of parental behavior

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[1]Gabrielson, Ira W., Levine, Lowell S., and Ellison, Margaret D., "Factors Affecting School Health Follow-up." American Journal of Public Health, LVII (January 1967), 48-59.

As these results are so different from others cited, questions arise as to the Gabrielson, Levine and Ellison sample, and how social class was determined. No mention is made of whether those with insurance were able to cover the recommended treatment under their insurance or had to pay for the services themselves. In the dental health area other research indicates a relationship between class and dental care patterns in terms of preventive or symptomatic care. Gabrielson, Levine and Ellison do not report whether the prior treatment of these children was for preventive or symptomatic reasons, and thus ultimately a difference by social class. It would appear also that only 20 children were referred due to dental problems (nine who had seen a dentist during the past year and eleven who had not); a test for significance on n=20 appears questionable.

related to health care for their children. The Head Start program by definition produces for the researcher a group of low income subjects. The Head Start setting is also structured to deal with many of the barriers beyond the immediate question of inability to pay for professional services which prevent low income parents from obtaining health care for their children. Consequently, not only do studies of Head Start participants deal with lack of dental health education, recognition of threat, low income, and degree of effort, they go a step further in recognizing other barriers which raise the degree of effort for poorer segments of the population.

Not only are there findings such as one from a Kansas City study which indicates that parents are not concerned about baby teeth and that roughly 90% had no family dentist mainly due to lack of dental health education,[1] there is recognition that:

> simply informing a parent that his child needs treatment rarely results in correction of a defect . . . "parent apathy" is actually the product of several factors which can be overcome . . . The examining physician must explain the nature of the defect to the parent, along with the reasons for treatment and the kind of treatment needed. Someone must aid the parent in finding the needed services. Someone . . . must see that the parent and child actually have transportation and that other children in the family can be cared for during the visit to the physician or clinic.[2]

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[1]Morris, J. F., "Health, Education, and Statistical Findings of 300 Pre-School Children from Culturally Deprived Families." Journal of the Kansas State Dental Association, L (October 1966), 144-46.

[2]North, A. Frederick, Jr., "Project Head Start: Its Implications for School Health." American Journal of Public Health, LX (April 1970), 699.

In one Head Start program the children were screened, letters sent to parents explaining the dental needs, follow-up personal contacts were made by phone or visit to the parents. It was explained that care was free and transportation was arranged if needed. The project began in late June and by November dental treatment was complete for 35.2% of the eligible children.[1]

A review of two years of a Head Start dental program in Seattle demonstrates the value of lowering the degree of effort beyond the offer of free care. In 1967-68 100 of 420 children eligible received no treatment.

> It was determined that the child either moved out of the city or dropped out of the program, the parent was unwilling to arrange for dental treatment for the child, or the parent was unable to obtain transportation to the dentist's office.

In 1968-69 an increase in the proportion of children receiving care was noted and it was determined that:

> One reason for the improvement in the percentage of children obtaining dental services in the second year is that volunteers were available to provide transportation for the parent and child to the dental office.[2]

Health care behavior of low income persons has, of course, been investigated outside the Head Start setting. In response to the question of financially ineligible patients exploiting the free

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[1]Brooks, Sharon, and Bagramian, Robert A., "Project Head Start . . . A Dental Public Health Apprenticeship." Journal of the Michigan Dental Association, LIII (July-August 1971), 232-34.

[2]Peterson, John C., Jr., "Dentistry for the Head Start Child--A Step in the Right Direction." Journal of the Missouri Dental Association, L (May 1970), 14.

clinic system, Lerner and Kirchner undertook a study to determine what proportion of municipal hospital outpatients could be classified as financially eligible, i.e., poor enough to qualify for reimbursement of medical expenses under New York State Medical Criteria. It was found that over 90% of the visits qualified as eligible, 6.8% of the visits--involving 8.1% of the total patients--were not eligible, 2.6% of the visits--involving 2.8% of the patients--were 'unknown.' Lerner and Kirchner also present the following information about the eligible patients:

> Eligible patients: Sixty percent had incomes under $4,000, and an additional 24% between $4,000 and $6,000; 78% were not welfare recipients; 41% were black, 35% Puerto Rican; 61% were female; 30% were under age 15, 43% between 15 and 45, and 27% over 45 years of age.[1]

Two studies which deal with low income blacks should be noted. Watkins in studying prenatal care found 59% of those seeking care did so because they experienced acute discomfort. These women "perceived prenatal care as treatment of acute symptoms rather than valuing its health promotion aspects." He also found the obstacles to obtaining care mentioned most frequently by mothers were "situational factors such as difficulty in arranging for supervision of their other children while they attended the clinic."[2]

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[1] Lerner, Raymond E., and Kirchner, Corinne, "Social and Economic Characteristics of Municipal Hospital Outpatients." American Journal of Public Health, LIX (January 1969), 33-34.

[2] Watkins, Elizabeth L., "Low Income Negro Mothers--Their Decision to Seek Prenatal Care." American Journal of Public Health, LVIII (April 1968), 663, 665.

Gallagher found attitudinal and situational barriers to prenatal care to be: "expense, inconvenience and the feeling that prenatal care is not essential." When free public care was available it did not "deny the expense of babysitters and transportation."[1]

Watts investigated social and psychological and cultural factors associated with acceptance of modern medicine in a population thought to be homogenous, i.e., low income black. Three samples were drawn: a) thought to be representative of the black, low income community, b) cases physically ill with chronic disease, and c) cases in this subculture with the largest number of social problems. It was hypothesized that sample c would make the least use of modern medicine. Two types of acceptance were found: 1) forced acceptance, i.e., treatment for specifics. A high correlation was found for all samples between severity and treatment being obtained. 2) Broad acceptance, i.e., treatment for various levels of severity, preventive care and awareness of community facilities. This type of care correlated most highly with knowledge concerning personal health (Health and Medical Information Index). Cultural factors found to be highly correlated with specific health knowledge were: a) value placed on education, b) school health experience (related to a better school program), c) family stability, and d) religious participation.

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[1]Gallagher, Eugene B., "Prenatal and Infant Health Care in a Medium-Sized Community." American Journal of Public Health, LVII (December 1967), 2132.

Contrary to the hypothesis it was found that the "social problems sample had the highest scores, physically ill lowest." The social problems group was found to have the most school health experience and ranked high on most characteristics highly correlated with specific health knowledge. This group had a median age of 30, more upper elementary and lower secondary education, 65% had incomes under $3,000. It included the largest percentage of unemployed, had no females above a labor-service-domestic employment category and no males above semiskilled. The physically ill sample had a median age of 57, the greatest lack of family stability, put the least value on education, and had the poorest educational experience.

The acceptance of modern medicine is seen as related to the middle class value system when the factors correlated with specific health knowledge are considered. Watts suggests that the social problems group has acquired middle class aspirations without the means of achieving this SES. The result being frustration and social problems. He sees this as being to a great extent due to the generational difference between samples b and c. The older (physically ill) group having been without the advantage of good quality education and exposure needed for acquiring new value systems.

The study was followed up with a program for sample c in which it was found that those who received assistance with social problems were more likely to follow up on medical referrals. Problems

related to the use of medical care facilities were found to center around difficulty in obtaining services: 1) long waiting periods for an initial appointment to start treatment on a regular basis, 2) means tests which cut off some people still too poor to afford care by a private physician on a regular basis, and 3) the complex procedures related to a means test, forms, etc.[1]

The literature seems to indicate that researchers have indeed found patterns of health care behavior which seem to be characteristic of certain segments of our society. Generally similar patterns emerge for the low income and racial-ethnic minority groups:

1) lack of regular, preventive care by a family dentist or physician

2) the seeking out of health care for symptomatic purposes

3) greater use of the clinic type facility

4) attitudinal and situational barriers to care

   a) not seen as necessary until the acute condition arises

   b) expense, both of care and related expenses such as babysitters and transportation

   c) inconvenience, such as waiting periods, forms, babysitters, transportation, etc.

These factors can be seen as defining the recognition of threat/degree of effort model of health care behavior. Lack of education, in general and health education in particular, would prevent recognition of threat until an acute, painful condition

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[1]Watts, Dorothy D., "Factors Related to the Acceptance of Modern Medicine." American Journal of Public Health, LVIII (April 1968), 655-67.

arises. Low income preventing payment for services and related expenses of child care, transportation, etc., certainly raises the degree of effort involved. Thus a pattern becomes established in which those segments of the population characterized by low levels of income and education are also characterized by a low level of utilization of health care services.

While not phrased in terms of recognition of threat/degree of effort, the dental profession in our society seems to be developing an awareness of the specifics involved in obtaining care. A 1966 proposal on dental health care for children notes:

> It is recognized that lack of motivation is a major problem and will be accentuated by other problems, such as those of transportation, fear, babysitting, discrimination, broken appointments, long waits, and ignorance.[1]

Speaking to the issues of income and education the dental profession has, on a less abstract level, expressed the hypothesis that increased recognition of threat and lowered degree of effort will lead to greater utilization of health care services:

> Utilization of dentists' services can be increased by removing or reducing financial barriers . . . an effective program of dental health education can also increase utilization.[2]

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[1]Committee on Dental Care, "A Dental Health Program for the Children of Michigan." Journal of the Michigan State Dental Association, XLVIII (November 1966), 362.

[2]Council on Dental Health, "Dental Guidelines for Title XIX Programs." Journal of the American Dental Association, LXXVIII (January 1969), 134.

In dealing with racial/ethnic minorities the question remains as to the degree of influence on health care behavior being exerted by the racial/ethnic subculture itself or the economic disadvantages of minority status.

Theoretical Considerations

In approaching the questions related to when and why people seek medical care a consideration of preventive care and health habits is perhaps primary. It is assumed that within almost all segments of society attempts are made to secure help in acute or emergency situations. However, in preventice care there are issues of voluntary behavior in the areas of health habits and responsibility for early detection of health problems. The public health movement in recent years has been quite successful in the "building and provision of health facilities and services." Now the emphasis has shifted toward securing "the utilization of such services by the public."[1] In such a situation, where professional care is available it must be recognized that:

> health action will be based upon the decision making processes of the individual as influenced by both the psychological factors of personal experience, belief, personality and motivation and the social factors of status, position, role functioning and reference group influence.[2]

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[1] Suchman, op. cit., p. 86.

[2] Suchman, op. cit., p. 87.

Recognizing that behavior varies in terms of seeking preventive health care, consideration needs to be given to what the psychological and social factors are which influence health related action and how these combine to stimulate or inhibit action.

Rosenstock[1] has developed a model, which has had some empirical validation, intended to explain why people who believe themselves healthy use health care services. The necessary conditions are: a) a belief in personal susceptibility, b) beliefs about severity, i.e., the illness, if contracted, would be severe enough to interfere with the individuals' activities, and c) perception of likelihood of certain behavior on the part of the individual reducing a and/or b. Along with these necessary conditions two further points are suggested: d) perceived barriers to taking action and e) presence of situational stimuli, i.e., cues to action. Given the necessary conditions, d and e will determine action taken or not taken.

A similar approach is taken by Suchman in noting three processes between facts and behavior, "perception, interpretation, and salience." He suggests that:

> Perhaps the greatest number of health messages never even reach the attention threshold of the individual . . . meaning will depend upon his previous experiences and his current needs . . . knowledge is not the same as health action . . .[2]

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[1]Rosenstock, Irwin M., "Why People Use Health Services." Milbank Memorial Fund Quarterly, XLIV (July 1966), 94-124.

[2]Suchman, op. cit., p. 89.

There must be rewards obtained from action, and

> For many . . . especially those with limited social horizons and immediate needs, the rewards of preventive health behavior are too remote to carry much weight. The negative consequences of not acting are not real and dire enough to arouse the energy required to do something out of the ordinary, such as taking part in a public health program.[1]

Suchman developed his model along two major axes: 1) the degree of meaning the desired health action has for the individual, i.e., the recognition of disease as a personal threat, and 2) the degree of effort the action requires in terms of personal decision making and activity. Thus we have:

	DEGREE OF RECOGNITION OF THREAT	
DEGREE OF EFFORT	HIGH	LOW
LOW	A	C
HIGH	B	D

with the degree of difficulty involved in individual participation increasing from A through D, and the likelihood of participation decreasing.

Suchman[2] compares this model to that of Rosenstock. The Rosenstock model being seen in two broad classes of factors: 1) personal readiness, combining susceptibility and severity becomes "recognition of threat," and 2) situational factors, the barriers and cues, become "degree of effort."

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[1] ibid.

[2] Suchman, op. cit., p. 90.

From this perspective it can be said that the individual about to take preventive health action sees himself as threatened with the susceptibility to some form of ill health, severe enough to interfere with his normal activities, and is aware of measures which will reduce the chances of this happening. Beyond this there is a question of barriers to action, or the effort involved. He may have to consider his income and whether or not he can afford the care, or what he is willing to give up if financial conditions create an 'either health care or . . .' situation. Perhaps time away from a job is a factor, or distance and difficulty getting to the source of professional services. The fear of ill health, of threat of a specific disease, and the desire to prevent it will be balanced against perceived barriers. Perhaps instances of disease being cured due to early detection and treatment, particularly if this occurs within the individual's reference group, may stimulate preventive action. On the other hand, someone else's unfavorable reaction to bureaucracy at the neighborhood clinic may shift the balance toward a negative decision.

While we cannot know for each individual exactly what forces led to what decision, or the weight given the various factors by that individual or the time span involved it can be seen that the factors are extremely complex. Certainly far more is involved than giving information that 'X' disease can be cured and the hours during which the clinic is open.

Although the Suchman-Rosenstock framework addresses itself to the question of individual participation, and certainly the final

decision on health care, in most cases, rests with the individual, societal factors affecting groups of individuals can be seen as accounting for the direction of much of the decision making. Thus it is suggested that within certain segments of the population similar decisions will be reached by individuals and patterns established which differentiate one segment from another. While we cannot isolate and weigh the factors and influences for the individual we can perhaps delineate in broader terms some of the factors which influence these larger segments of the society.

The necessary conditions posited by Rosenstock may be seen as the result of a definitional process, i.e., one must define oneself as susceptible, define severity, and define the specific actions which will avert serious ill health. The definitions of the client/patient population may, in some instances, be very different from those of the professionals ready to give service. Coser and Rosenberg in commenting on the process of definition explain that:

> men respond to outside stimuli in a selective manner and . . . such selection is powerfully influenced by the manner in which they define or interpret situations. Anticipatory definitions are likely to have enduring social consequences even if those definitions seem to an outside observer to be completely devoid of an 'objective' truth value.[1]

The sociological concern with definition of the situation must be distinguished from the psychological approach to individual

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[1]Coser, Lewis, and Rosenberg, Bernard, Readings in Sociological Theory. New York: Macmillan, 1964, p. 232.

perception. In sociological analysis of definition there is an attempt to show that intersubjective understanding requires shared meanings. One of the functions of cultural norms and group structure is to provide members of groups with shared definitions of situations. Thus while accepting the Suchman-Rosenstock model of the individual decision making process we must place it within a larger framework. The individual makes his decision within the norms and structure of his group, based upon shared definitions. Consequently different behavioral patterns are found for particular segments of the society in which definitions about health, illness, treatment, and when to seek professional services are shared.

Irelan[1] points out that within the United States poor people are seen as defining and treating health problems in ways which differ from other sections of the population. While they are more vulnerable to ill health they are less aware of causes, treatment and outcomes of various diseases. Medical services are sought and distributed differently with greater reliance upon self medication, advice from non-professionals, and little participation in community health programs being common. The poor are often seen as receiving differential treatment from professionals even when financial ability to pay is not a factor. The health practices of the poor would be determined within the material and social structure of poverty and by the outlook on life fostered by economic deprivation.

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[1]Irelan, Lola M., "Health Practices of the Poor." Welfare Review, III (October 1965), 1-9.

Curry has noted some specific examples of variations in health care patterns of segments of the population:

> . . . there are some things which are far more important to patients than attending a clinic . . . The acceptance of medical care is influenced by economic, social, cultural and emotional factors . . . When the economic burden of obtaining medical care threatens the existence of the patient and his family through loss of salary while attending the clinic, the medical problem frequently becomes secondary in importance. The effects of social and cultural practices of ethnic groups may be exemplified by Chinese who will not attend clinic during the week of their New Year's celebration . . . The influence of emotional factors . . . was demonstrated during the civil rights demonstrations . . . when several Negro patients . . . requested an increased supply of medication to last until they returned from participating in the marches in Alabama and Mississippi.[1]

Watkins, in studying patterns of prenatal care, also reports that:

> previous studies found that women who delayed seeking care were more likely to have characteristics such as low income, low educational attainment, minority ethnic background . . .[2]

It should also be noted, returning specifically to the question of dental care and this research, that it seems evident a definition is shared by those involved in social action and service professions: good dental health and care is desirable and facilitated through preventive and symptomatic treatment provided by a dentist. Dental care is seen as a problem area where assistance should be provided to those persons financially unable to secure the services of a dentist. Three examples of this shared definition which are directly

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[1]Curry, Francis J., "A New Approach for Improving Attendance at Tuberculosis Clinics." American Journal of Public Health, LVIII (May 1968), 881.

[2]Watkins, op. cit., p. 665.

involved here, and many more could be cited, are 1) the existence of a public dental clinic in Kalamazoo County, 2) the County Dental Concerns Committee and records of its work to establish the clinic, and 3) the desire expressed for investigation of the local dental health situation.

On the other side, the prospective client/patient population, the situation may be quite different and much more along the lines mentioned by Irelan, Curry and Watkins. It is possible that the segment of socity 'objectively' defined as in need (the dental hygienist as an objective expert recommends dental treatment, and the family income objectively indicates inability to meet the costs of private dental care) does not define itself as in need, or see dental care as a problem. The problems of the poor are typically more immediate and basic--food, shelter, clothing, etc. The need for the services of a dentist is perhaps only recognized when intense, physical pain, which cannot be coped with through home remedies, persists. Sufficient recognition of threat may not exist for routine, preventive, or even restorative dentistry to be considered a need which outweighs the barriers of poverty.

Accepting that most poverty families live in neighborhoods with others in poverty, that their social and occupational contacts, if any, are limited to other poor, the pattern of definitions of needs, problems and priorities would be reinforced at that level, i.e., shared. If, as suggested, dental health is not seen as urgent and dental care as a need by the poor, it may explain to a great extent, why so many are not reached by the programs provided.

In summary, it is assumed that the individual decision to seek health care--dental or medical--is based on personal readiness, i.e., belief in susceptibility, severity and methods to prevent or lessen the effects, and situation factors, i.e., barriers to obtaining care and stimuli occurs. It is further assumed that the decision making process is rooted in a socio-cultural definition of the situation. Thus various segments of the society, with their own definitions of situations demanding professional health care, exhibit different patterns of health care behavior.

Purpose of the Research and Hypotheses

The basic points with which this research is concerned can be seen as 1) behavior related to dental health and care as evidenced by families of various SES levels and 2) behavior related to dental health and care as evidenced by families specifically determined to be eligible for public dental care. While it may initially seem that these are one and the same, and certainly there is considerable overlapping, SES and dental indigency cannot be equated totally. Determination of SES usually rests on combinations of factors such as education and occupation as well as income. Dental indigency, for purposes of the local program, is defined in terms of family size and income. Thus a person with low educational and income levels and a low prestige job with a small family may not be eligible, while the family with higher SES level and a large number of minor children may qualify.

Working from the Suchman model it is assumed that as class level rises, knowledge and beliefs about dental health and care will raise the level of recognition of threat. The preventive measures which utilize professional services will have greater meaning for those with higher SES. It is also assumed that an economic factor is basic to the determination of degree of effort and the type of decision about care to be made. In other words, it is expected that most barriers which would prevent dental care are essentially resolvable with money; babysitters can be hired, transportation to a dentist can be arranged even by taxi if necessary, and basically the fees for professional services can be paid. For the poor these barriers may seem insurmountable and even when the professional fee is covered through a public program the other economic barriers remain, keeping the degree of effort involved in obtaining care relatively high.

Thus we can assume that upper class families would be closest to A in the Suchman model; high recognition of threat and low degree of effort. Lower class families, especially those from racial or ethnic minority segments of the population would be expected to be closer to D in Suchman's model; combining low recognition of threat with high degree of effort.

For the purposes of this research recognition of threat is defined in terms of dental health care practices and knowledge of such. High recognition of threat, therefore, would involve preventive care and an emphasis on professional services. Low recognition of threat is evidenced in stress on home care and

symptomatic demand for professional services. Degree of effort is based upon those barriers preventing care reported by the respondents.

Specifically the points of concern may be seen as:

1) In what kinds of dental care behavior are families in the various SES categories engaged?

2) What treatment recommendations are being made to them by a dental health expert?

3) What importance is attributed to various dental care behaviors?

4) What attitudes are expressed toward the use of a public care program?

5) To what extent are parents knowledgeable about the program which exists in the community?

6) What barriers to acquiring dental care are perceived by parents of children eligible for public care?

The following research is an attempt to address these points under eleven general hypotheses:

1) Children from the lower SES groupings will have greater need for symptomatic dental care than will children from middle or upper SES groupings.

   a) Upper and middle class families will more frequently have a family dentist than will lower class families.

   b) Children from upper and middle class groups are more likely to have been to a dentist than are those from the lower classes.

   c) Children from upper and middle class groups, when they do see a dentist, are more likely to go for routine purposes, whereas children from the lower class groups will have visited a dentist for symptomatic reasons.

2) Dental care practices considered of prime importance by the upper and middle class will more frequently be those requiring an outside professional. The lower class will tend to stress those practices which revolve around home care.

a) The upper and middle classes will attribute more importance to dentists and fluoridation than will the lower classes.

b) Lower class families will stress tooth brushing or proper food more than services of a dentist or fluoridation.

3) Upper and middle class families will be less accepting of the idea of public dental care than will lower class families.

4) More upper and middle class families will be aware of the availability of free dental care for children in the community than will lower class families.

5) Families eligible for public dental care for their children will be predominately lower class.

6) The same pattern as expected in H1 will become increasingly pronounced when the categories of 'eligible' and 'non-eligible' (as determined by the local dental clinic guidelines) replace the SES groupings.

7) Parental perception of dental health and dental hygienists' determination of needs will be compatible with greater frequency in non-eligible families.

8) Parental perception of dental health and dental hygienists' evaluation of oral hygiene will be compatible with greater frequency in non-eligible families.

9) Parents in eligible families will perceive more situational barriers preventing dental care for their children than will non-eligible families.

a) A greater percentage of eligible families will perceive at least one situational barrier than will non-eligible families.

b) Eligible families will be more likely to perceive multiple barriers than will non-eligible families.

10) Families eligible for public dental care will be more accepting of the idea of free care than will non-eligible families.

11) More non-eligible families will be aware that free dental care is available than will eligible families.

It should be noted that due to the sampling procedure used in this research no statistical estimates or tests of significance of the findings are possible. The sample is not random, but deliberately chosen to represent certain segments of the population, i.e., parents of second graders in selected Kalamazoo schools located geographically in areas exhibiting different SES levels. The sample can best be described as purposive and stratified in the terms of *Simpson and* Kafka, and therefore:

> Chance is not at work . . . thus, aspects of probability are not applicable to a purposive sample and the reliability of such a sample cannot be measured.[1]

It is hoped, however, that this descriptive analysis will give some insight into the questions surrounding dental care behaviors and perhaps define areas needing further research of a more statistical nature.

Procedure

Selection of respondents was made from among parents of second graders in the Kalamazoo Public Schools. Considered in this decision was the fact that second graders are checked by a dental hygienist in the various schools, thus parent information could be compared with current expert opinion.

Twelve second grade classes were selected on a stratified basis, and the parents of those second graders comprised the sample.

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[1] Simpson, George, and Kafka, Fritz, Basic Statistics. New York: W. W. Norton Company, 1952, p. 232-33.

The twelve classes represent a total of 279 families. Selection was made after considering the census tract information regarding educational levels, income and racial composition, and elementary school boundaries in the community. These twelve classes are assumed to fall three each into the following categories: Upper Class, Middle Class, Lower Class--predominately black, and Lower Class--predominately white.

The assumption was made that reported medians from the census data, by tracts, would be reflected in differences between the four groups of respondents, in terms of educational levels, occupations and income (see Chapter II, SES and Dental Health and Care Patterns). Consideration was given to the possibility that the group medians would not accurately describe the individuals actually included in the sample.[1] It is also recognized that different correlations would probably result if computed for SES/race and health behavior based entirely on census tract or entirely on school districts as the geographic boundary.[2]

While the census medians undoubtedly do not describe each and every family studied, medians computed for the sample indicate that the ecological fallacy has been avoided and the sample groupings, with boundaries based both on census tract and school district, do

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[1]Simon, Julian L., Basic Research Methods in the Social Sciences. New York: Random House, 1969, pp. 129-30.

[2]Robinson, W. S., "Ecological Correlations and the Behavior of Individuals," American Sociological Review, XV (June 1950), 351-57.

in fact represent the differences indicated in the census data (see Appendix A for specific selection procedure).

Three methods of data collecting were used, one each in each stratified level:

Take Home Questionnaire A questionnaire and cover letter with instructions and a return envelope to insure confidentiality was given to each second grader by the teacher. The children were instructed to take the materials home, have a parent fill out the form, put it in the envelope, and the child return it to school within the next day or two. Teachers were asked to treat this material as they would any take home-fill out-and return materials.

Mailed Questionnaire The procedure developed by Robin[1] was used. A prequestionnaire letter was sent to the respondents explaining the study, asking their cooperation, and advising that a questionnaire would follow. A second letter, questionnaire and stamped self addressed envelope followed one week later. Three follow ups were sent at one week intervals to those whose questionnaires had not been returned; the first a reminder, the second including another questionnaire and stamped self addressed envelope, the third, a final (though unknown to the respondent) reminder. All letters were mimeographed on Kalamazoo Valley Dental Society letterheads and carried the signatures of the president of that society and the chairman of the Dental Concerns Committee.

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[1]Robin, Stanley S., "A Procedure for Securing Returns to Mail Questionnaires." Sociology and Sociological Research, L (October 1965), 24-35.

Home Interviews The parents were contacted by the research staff at their homes and interviewed. The questionnaire used in methods one and two was used as an interview schedule with one modification; a card listing income categories a, b, c, etc., was handed to the respondent who was asked to indicate, by letter, the category in which the family income fell for 1969.

Data collecting and initial processing was carried out by a group of students enrolled in Introduction to Sociological Research.

Records of the dental hygienist's findings in the school examinations were secured, coded and added to the information from responding parents.

As previously noted the sample selection for this research was based on information obtained from the 1960 census. Considering the time elapsed, the question arises as to the adequacy of the class definition. Census tract data necessitates working from medians which allows for variations and ecological incompatibility in sample selection. A second possible problem arises in the fact that no school district and census tract are denoted by exactly the same boundaries. Differences in medians between the sample and the census therefore may arise due to 1) change over time, 2) ecological incompatibility, and/or 3) the non isomorphic character of the sample.

In the present study identification numbers were assigned respondents which had been coded to indicate the school district. The respondents have been analyzed in terms of income, education and occupation according to these definitions. The following

tables, I:1, 2 and 3, contrast the 1960 census data with the sample used in this research.

TABLE I:1--MEDIAN EDUCATIONAL LEVELS, 1960 CENSUS AND 1970 SURVEY

	School District			
	Upper Class Tract 12	Middle Class Tract 17	Lower Class Black Tract 2	Lower Class White Tract 9
1960 Census	14.7 years	12.2 years	8.4 years	8.9 years
1970 Survey Fathers	16 years	12 years	9 years	11 years
1970 Survey Mothers	15 years	12 years	10 years	11 years

TABLE I:2--INCOME LEVELS, 1960 CENSUS AND 1970 SURVEY

	School District			
	Upper Class Tract 12	Middle Class Tract 17	Lower Class Black Tract 2	Lower Class White Tract 9
1960 Median	11,579	7,494	4,081	4,945
1970				
Under 3,000	3.5%	1.8%	29.0%	2.9%
3,000-4,999	3.5%	3.6%	34.7%	11.1%
5,000-6,999	1.8%	14.3%	7.3%	22.2%
7,000-9,999	7.0%	28.5%	29.0%	44.4%
10,000 & above	84.2%	51.8%	----	19.4%

Medians cannot be given for the survey due to the fact that the median would fall in the open ended category of $10,000 and above.

Occupations were not a factor drawn from the 1960 census, however, to complete the description of the school districts, Table I:3 summarizes occupational status rankings of fathers in the 1970 survey. Categories 1-7 represent rankings from highest to lowest, category 8 indicates unemployed.

TABLE I:3--OCCUPATIONAL STATUS OF SURVEY FATHERS BY SCHOOL DISTRICT

Occupational Category	Upper Class	Middle Class	Lower Class Black	Lower Class White
Upper Level Professional	12.5%	*	----	*
Professional	37.5%	11.1%	----	*
Lower Level Professional	25.0%	11.1%	----	6.6%
Sales, Clerical	8.9%	12.9%	*	6.6%
Skilled Blue Collar	7.1%	31.5%	23.0%	43.3%
Semi-skilled	*	27.7%	26.9%	26.6%
Unskilled Service Workers	*	*	15.4%	13.3%
Unemployed	5.3%	----	30.8%	----

* less than 5%
---- no respondent in category

While the 1960 census shows tract 9 to differ more from tracts 12 and 17 than does the 1970 survey, a pattern of variations does occur. The four school districts could be seen as ranked upper, middle, lower-white, lower-black. The higher SES of the lower class white school district over tract 9 may be due in part to the fact that the school district takes in parts of a tract with higher

1960 medians, or it may indicate a change in the relative position of tract nine, an increasing gap between low SES blacks and whites, or a function of the ecological fallacy. It should be remembered that the class definitions do not follow exactly and exclusively the tract boundaries (see Appendix A).

CHAPTER II

SOCIAL CLASS, DENTAL HEALTH AND CARE

Social Class and Preventive/Symptomatic Dental Care

It has been suggested in the literature and hypothesized in this research that upper classes have a pattern of dental care which differs from that of the lower classes in that there is a higher recognition of threat and fewer barriers preventing care. Behaviorally this pattern would be expressed by 1) having a family dentist, 2) having taken the child to the dentist within the past year, and 3) having done so for routine purposes. With higher recognition of threat and lower degree of effort a greater emphasis on routine/preventive care should be found among the higher class groups.

It is further suggested that when examined by an expert those with a pattern of routine/preventive care should be found to need less symptomatic treatment (H1).

Responses to the question of having a family dentist are summarized in Table II:1. The findings tend to support the hypothesis that the families from upper class school districts are more likely to have a family dentist than are those from lower class areas (H1:a). The pattern of the middle class areas, in terms of those claiming a dentist and giving his name, follows very closely that of the upper class.

TABLE II:1 PERCENT OF FAMILIES REPORTING A FAMILY DENTIST BY SCHOOL DISTRICT

Have Dentist	School District			
	Upper Class	Middle Class	Lower Class Black	Lower Class White
Have	88%	87%	29%	69%
Do Not	5%	13%	68%	26%
Question*	7%	---	3%	5%
Total	100%[60]	100%[62]	100%[39]	100%[38]

*Responded "yes" but did not give name of dentist.

A distinction appears between the black and white lower class sample. It should be noted that the black lower class sample was found to have lower income and educational levels than the white, greater unemployment and lower employment status. While the sample was drawn to include both the black and white lower class areas of the city, it may in fact represent two points on a continuum of recognition of threat and degree of effort.

Turning to dental care behavior, a similar pattern emerges in terms of actually taking the second grade child to the dentist. Tables II:2 and II:3 summarize class behavior of visiting a dentist and reasons for the visits. These findings tend to support the notion that the higher the social class the greater the emphasis on routine/preventive care, both in terms of utilization of professional services (H1:b) and reasons for utilization (H1:c). Again the percentages follow an Upper Class, Middle Class, Lower Class-White, Lower Class-Black pattern, demonstrating the expected behavior

TABLE II:2--PERCENT OF FAMILIES TAKING CHILD TO THE DENTIST BY SCHOOL DISTRICT

Visits to Dentist	School District			
	Upper Class	Middle Class	Lower Class Black	Lower Class White
During Year	88%	71%	23%	60%
Over Year Ago	7%	6%	20%	19%
Never	5%	13%	52%	21%
Total	100%[60]	100%[62]	100%[38]	100%[38]

TABLE II:3--REASON FOR TAKING CHILD TO THE DENTIST BY SCHOOL DISTRICT

Reason	School District			
	Upper Class	Middle Class	Lower Class Black	Lower Class White
Routine	81%	72%	35%	53%
Symptomatic	19%	28%	65%	47%
Total	100%[57]	100%[54]	100%[17]	100%[30]

reflecting degree of effort and recognition of threat at the various class levels. From this it should follow that the Upper and Middle class area children would need less symptomatic treatment both in terms of percentages of children needing treatment and urgency of the needs (H1).

The hypothesis (H1) that children from the Upper and Middle class areas will have fewer symptomatic needs is borne out in the dental hygienists' recommendations which are summarized in Tables II:4, II:5, and II:6. In Table II:4 a greater distinction

between the children from the Upper and Middle class school districts appears, and the positions of the Lower Class Blacks and Whites are reversed.

TABLE II:4--TYPE OF TREATMENT RECOMMENDED BY SCHOOL DISTRICT

Treatment	School District			
	Upper Class	Middle Class	Lower Class Black	Lower Class White
Routine	80%	49%	35%	29%
Non-Routine	20%	51%	65%	71%
Total	100%[56]	100%[59]	100%[40]	100%[34]

TABLE II:5--NUMBER OF EXTRACTIONS RECOMMENDED PER CHILD BY SCHOOL DISTRICT

Number of Extractions Needed	School District			
	Upper Class	Middle Class	Lower Class Black	Lower Class White
1	0	0	1	1
2	0	0	0	2
3	0	0	0	0
4	0	1	0	0

Looking at specific treatment recommendations only five children were determined in need of extractions. It would appear that most treatment recommended could be considered of a restorative nature, i.e., the dental problem has not progressed to the point where extraction of teeth is the only solution. As would probably be expected, cavities needing attention constitute the bulk of treatment

TABLE II:6--DEGREE OF URGENCY OF NEED FOR TREATMENT OF CAVITIES BY SCHOOL DISTRICT

Urgency	School District			
	Upper Class	Middle Class	Lower Class Black	Lower Class White
Routine	55%[6]	51%[15]	46%[12]	25%[6]
Urgent	36%[4]	37%[11]	31%[8]	58%[14]
Emergency		20%[6]	31%[8]	58%[14]

recommendations. Of those children needing non-routine care of cavities, treatment is recommended according to degree of urgency (Table II:6). It should be noted that percentages do not equal 100 due to the fact that some children fall into more than one category. Again it can be seen that the children from the lower class areas have more needs which are more urgent.

The findings tend to support the hypothesis that children from the lower class school districts have a greater need for symptomatic care (H1), and are less likely to come from families who have family dentists (H1:a). They are also less likely to have been to a dentist (H1:b), and if they have gone it is more often for symptomatic than routine care (H1:c). This behavior pattern of the lower classes is that expected in the Suchman model in instances of low recognition of threat and high degree of effort. In terms of care patterns the school districts could be ranked Upper Class, Middle Class, Lower Class-White, and Lower Class-Black. However, when considering non-routine treatment needs, expected to increase as routine/preventive care decreases, the ranking would be Upper Class,

Middle Class, Lower Class-Black, Lower Class-White. This leaves a question in terms of why the Lower Class-White district children, apparently receiving more dental care of a routine/preventive type, tend to have more symptomatic needs than the Lower Class-Black district children.

Considering what is known of the population involved and the literature in the areas of health care, four possible explanations of this situation come to mind. First, the Lower Class-White sample, having slightly higher SES than the Lower Class-Black district sample, may have been more exposed to middle class values in health care. This could tend to raise the recognition of threat and in turn some Lower Class-White area respondents may have given the 'right' rather than the truthful answer to questions regarding the dental care provided for their children. They may believe that parents should have family dentists, that children should be taken to the dentist at least once a year, and that this is done as a routine check up. Although aware of this pattern of care and believing it to be desirable these parents may not actually behave in this way. Secondly, the possibility exists that different diets are characteristic of residents of these areas, which lead to differences in dental problems.

Theoretically it is possible that the Lower Class-White area families having higher incomes spend more on 'treats' for their children which are harmful to teeth. Informal observation would indicate that an extreme difference would probably have to exist in family buying patterns for this to explain the dental health pattern.

In actuality it appears the Lower Class-Black area children probably consume more sweets than the Lower Class-White area children. The Lower Class-Black area is one with many small groceries and the school children, though from poor families, do purchase candy, pop, gum, etc., when going to and from school or on the noon hour. The Lower Class-White district, in turn, is not characterized by small neighborhood stores. Children in this area would be far more likely to consume foods provided by their parents. If different eating patterns account for the difference in dental health there would have to be enough variation to offset the sweets-purchasing pattern of the Lower Class-Black district children.

A third variation might be found in dental care received. It has been suggested to the researcher by dental professionals familiar with the Lower Class-White district that many families begin dental treatment for the children, then the parents are divorced, and the mother finds herself financially unable--alone--to continue the care which had begun before the divorce. Perhaps more serious dental problems occur among those who have partial dental care than among those who have none.*

A fourth and final possibility might be found in racial differences. While it is recognized that different potentials for dental

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*At this point I would also suggest the possible variations in care received, if acknowledging the limited income, the Lower Class-White school district family looks for a less expensive dentist than does the Upper or Middle Class district family and receives inferior care perhaps more emergencies develop, i.e., the cavity which loses its filling may be an 'emergency' sooner than the one never filled.

health exist, particularly in terms of strength of tooth enamel and resistance to decay, the researcher has found no evidence to suggest that this difference has been measured and compared between racial groupings. The closest thing to such a comparison of which the researcher is aware is the A.D.A. survey of 1965 (see pp. 9-10). However, the sample was of dental patients only. Thus no statement can be made about the basic dental health of those who have not sought professional services. It might be that a basic bio-chemical difference exists which gives black children potentially better teeth, without professional care, than white children. It should also be noted that the exact racial composition of the sample for this research is unknown and while it is assumed to reflect the composition of the census tracts and school districts it may not, or the specific respondents creating the pattern differences may be exceptions, racially, in their districts.

Perhaps all four of these possible explanations combine in creating groups of children with routine/preventive care and symptomatic needs, perhaps none have any bearing on the findings. At this point we can conclude that the care claimed by parents in the Lower Class-White school district does not appear to be paying off as it should. Extensive further research would probably be needed to identify and weigh the factors involved in creating this situation.

School District and Perceived Importance of Dental Care Behaviors

Parents, regardless of district, show a great consistency in behavior rated as important for good dental health.

TABLE II:7--DENTAL CARE BEHAVIOR PERCEIVED AS MOST IMPORTANT BY SCHOOL DISTRICT

Behavior	School District			
	Upper Class	Middle Class	Lower Class Black	Lower Class White
Brushing	47%	59%	68%	54%
Dentist	3%	1%	13%	5%
Foods	38%	37%	13%	35%
Fluoride	7%	3%	6%	3%
Prenatal	3%	---	---	---
Heredity	2%	---	---	3%
Total	100%[61]	100%[58]	100%[31]	100%[37]

TABLE II:8--DENTAL CARE BEHAVIOR PERCEIVED AS SECOND MOST IMPORTANT BY SCHOOL DISTRICT

Behavior	School District			
	Upper Class	Middle Class	Lower Class Black	Lower Class White
Brushing	32%	32%	28%	31%
Dentist	28%	35%	44%	39%
Foods	18%	17%	28%	19%
Fluoride	20%	14%	---	8%
Prenatal	2%	---	---	---
Being Careful	---	2%	---	3%
Total	100%[60]	100%[59]	100%[29]	100%[36]

In all districts brushing the teeth is considered most important by more respondents than is any other care behavior. Contrary to the expected results, brushing, a home care behavior, is also selected as second most important by parents in the Upper Class district (H2, H2:a). Again contrary to the hypothesized expectation, the lower class district respondents rate going to the dentist once a year higher than do the upper or middle class respondents (H2:b). Proper food, another home care behavior, ranks first more often among the Upper, Middle and Lower Class-White district parents, while a greater percentage of Lower Class district-Black parents rank foods second. An even greater percentage, 46% perceive proper foods to be third most important.

It would appear that professional dental care does not have the importance placed upon it that one would expect from segments of the population in which 70-80% of the parents have taken their children to a dentist within the year for preventive/routine purposes. On the other hand, greater importance is placed on going to the dentist by those less likely to have taken their children. Perhaps the skills of the dentist are more impressive to those who go less but when they do go, go for symptomatic reasons. Another possible explanation might lie in desiring a service which it is felt cannot be afforded, with the service thus taking on greater importance.

In summary it can be said that cutting across class lines, brushing teeth, going to the dentist once a year, and eating proper foods are perceived as the most important dental care behaviors.

To what extent all groups have the knowledge and resources to act on their perceptions is another matter.

School District and Public Dental Care

It has been assumed that those families with lower incomes, recognizing their own needs and difficulty meeting those needs, will be more accepting of the idea of free care than will those better able to pay for private care. While many factors influence one's attitude toward public health care programs, from creeping socialism to the stigma attached to having to admit needing public care, it is suggested that those from less affluent areas will find the idea of free care appealing, at least in a confidental survey (H3).

That those families from the lower class districts think they would take advantage of a public program is strongly borne out in the responses summarized in Table II:9 with 92% and 81% of the lower class area black and white respondents, respectively, indicating they would use a free facility. Of the remaining families 8% and 5% were not sure. No one indicated refusal of such a service in the Lower Class-Black area while 14% from the Lower Class-White district say they would not use free public care. Surprisingly, 40% and 50% of the upper and middle class district respondents indicated that they too would use a free care facility, with 25% and 16% not sure.

TABLE II:9--ATTITUDES TOWARD UTILIZATION OF FREE CARE FACILITIES

Use	School District			
	Upper Class	Middle Class	Lower Class Black	Lower Class White
Would Use	40%	50%	92%	81%
Would Not	35%	34%	---	14%
Not Sure	25%	16%	8%	5%
Total	100%[60]	100%[56]	100%[39]	100%[37]

The respondents replying "not sure" gave the following reasons for their hesitancy:

Financially able, others' needs greater

Fear of inferior care

Complexity of the system

Child would fear a new dentist

Loyalty to own dentist

Knowledge of Availability of Free Dental Care

It has also been suggested that upper and middle class families, having larger incomes and income being associated with general measures of SES such as education, would be more likely to be aware of a program of free dental care in the community. It was expected that this knowledge pattern would be reflected in the responses of parents from the various school districts (H4).

The findings do not support this hypothesis with 71% and 75% of the Lower Class Black and White respondents, respectively, indicating they believe no free care is available for children in the community,

TABLE II:10—KNOWLEDGE OF AVAILABILITY OF FREE CARE BY SCHOOL DISTRICT

Availability	School District			
	Upper Class	Middle Class	Lower Class Black	Lower Class White
Is Not	72%	68%	71%	74%
Is:				
Clinic	5%	12%	16%	14%
Other Place	2%	8%	8%	9%
Unknown Place	21%	12%	5%	3%
Total	100%[58]	100%[56]	100%[38]	100%[36]

and 72% and 68% of the Upper and Middle Class district respondents agreeing. In terms of correctly identifying the source of a public dental care program, when it is believed to exist, the Lower Class district respondents were slightly more accurate with 16% and 14% respectively, aware of the dental clinic. Those from Upper and Middle Class districts appear to have a general awareness that such a program may exist but do not know where it is located.*

*Of interest here is the fact that about a week before data collecting began for this survey the local paper carried an article about the clinic and the community's new public health dentist, including his picture. For the 25-30% aware of a dental care program the question of salience may come in at this point. The more affluent being less likely to know the specific location of the service: 5.2% from the U.C. area identified the clinic, 22.4% gave erroneous or unknown locations, M.C., 12% correct, 20% wrong or unknown. Lower class area respondents, while not well informed, more often than not knew the location; Black-16% to 13%; White-14% to 11%. Further research with a larger sample might shed more light on this possibility.

In general it seems that lack of knowledge about a service available in the community, at least this service, prevails which does not appear to be linked to class level of residential area. Further investigation would, however, be expected to find lack of knowledge linked to behaviors which do vary by class; the upper classes having greater access to information but that which is not salient is not remembered; the lower classes, for which it is salient, are less likely to be exposed to the information.

CHAPTER III

DENTAL HEALTH CARE PATTERNS OF FAMILIES ELIGIBLE AND NON-ELIGIBLE FOR PUBLIC DENTAL CARE

Class and Eligibility for Public Dental Care

At this point it may appear almost redundant to consider class and eligibility for free care. While a great deal of overlapping between lower class residential area and eligibility may occur they are not the same. The class definition does not account for the size of the family. Eligibility requirements, on the other hand, are based entirely on income and family size. It is assumed, however, that most of the eligible families will come from areas characterized as relatively low (H5).

TABLE III:1--PERCENT OF FAMILIES ELIGIBLE FOR FREE CARE BY SCHOOL DISTRICT

	School District			
	Upper Class	Middle Class	Lower Class Black	Lower Class White
Eligible	9%	9%	87%	31%
Non-Eligible	91%	91%	13%	69%
Total	100%[58]	100%[55]	100%[31]	100%[36]

As evidenced in Table III:1 a larger proportion of the families surveyed from the lower class school districts were determined eligible, while the upper and middle class school districts had

idential percentage of eligible families in the survey.

Table III:2 indicates the percentage of eligible families in the survey from each school district.

TABLE III:2--SCHOOL DISTRICT OF ELIGIBLE FAMILIES

Upper Class	Middle Class	Lower Class Black	Lower Class White	Total	
11%	13%	53%	23%	100%	47

Determination of Eligibility

Dental indigency, or eligibility for public dental care, as has been noted, is determined according to guidelines established by the Kalamazoo County Health Department and is based upon family income and number of children. Of the 200 families responding in the survey, 179 responded to the question of income. Of these, 47, or 26%, meet the eligibility requirements for public dental care.

Table III:3 presents survey respondents by number of children in the household and family income. The area below the double line indicates those eligible for public dental care and the totals are given for eligible families and children. While the mean number of children per eligible family is five it can be seen that a great deal of variation exists in terms of family income and family size of those eligible. No attempt will be made to describe the 'typical' dentally indigent family, rather Chapter III will be devoted to a consideration of patterns of care and behavior evidenced by the segment of our population determined dentally indigent.

TABLE III:3--FAMILY SIZE AND INCOME WITH TOTAL FAMILIES AND CHILDREN ELIGIBLE FOR CARE THROUGH THE DENTAL CLINIC

Number of Children	Family Income Category											
	Less than $3,000	$3,000-$3,499	$3,500-$3,999	$4,000-$4,499	$4,500-$4,999	$5,000-$5,499	$5,500-$5,999	$6,000-$6,999	$7,000-$7,999	$8,000-$8,999	$9,000-$9,999	$10,000 & above
1	-	-	-	-	-	-	2	1	-	-	1	4
2	2	1	2	1	-	-	-	-	6	1	3	23
3	3	-	-	3	-	2	1	1	5	3	1	31
4	2	-	-	2	-	-	-	3	4	2	1	14
5	1	1	2	2	1	-	1	3	2	3	3	7
6	2	-	1	-	-	2	-	1	-	1	2	2
7	-	-	-	-	-	-	-	1	-	-	-	-
8	2	-	-	1	-	1	1	-	2	-	2	1
9	-	-	1	-	-	-	-	-	-	-	1	1
10	-	-	-	-	-	-	-	-	-	1	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-
13	1	-	-	-	-	-	-	-	-	-	-	-
Total	13	2	6	9	1	5	5	10	19	11	14	83
Total Eligible Families	13	2	6	9	1	5	3	5	2	1	-	-
Total Eligible Children	67	7	29	37	5	26	16	28	16	10	-	-

Total Eligible Families - 47 Total Eligible Children - 241

Child Dental Health and Care Patterns of Eligible and Non-Eligible Families

In this section of the research respondents are classified not according to the social class of school district, but on the basis of the family's eligibility for public dental care. It is hypothesized that these families will show less use of dentists, preventive-routine care, and a greater need for symptomatic care than will non-eligible families (H6). A greater difference is expected between eligible/non-eligible families than was found between upper and lower class in terms of having a family dentist, length of time since the second grader has been to the dentist and reason for the visit. It is expected that dividing the sample in terms of eligible and non-eligible families will increase the distinction between those with high and low recognition of threat and high and low degree of effort. Tables III:4, 5, and 6 show the eligible and non-eligible families in terms of having a dentist, frequency, and reason for second grader seeing the dentist.

TABLE III:4--PERCENT OF ELIGIBLE/NON-ELIGIBLE FAMILIES HAVING A FAMILY DENTIST

	Eligible	Non-Eligible
Have Dentist	39%	83%
Questionable	---	12%
Do Not	61%	5%
Total	100%[46]	100%[131]

TABLE III:5--PERCENT OF ELIGIBLE/NON-ELIGIBLE SECOND GRADERS VISITING A DENTIST

	Eligible	Non-Eligible
Within Year	33%	79%
Over Year Ago	17%	12%
Never	50%	9%
Total	100%[45]	100%[132]

TABLE III:6--PERCENT OF ELIGIBLE/NON-ELIGIBLE CHILDREN SEEING A DENTIST FOR ROUTINE OR SYMPTOMATIC PURPOSES

	Eligible	Non-Eligible
Routine	50%	72%
Symptomatic	50%	28%
Total	100%[24]	100%[119]

It does appear that non-eligible families have a pattern of more preventive/routine dental health care than those eligible to use the public dental clinic. However, dividing the sample population according to eligibility does not produce more sharply differentiated behavior patterns than were found between the upper and lower class school district groupings.

Considering pathology and recommended treatment for eligible/non-eligible second graders we do find that a greater proportion of the eligible children have symptomatic needs. Most of the treatment needs noted in Table III:7 are due to cavities. All instances of extraction being recommended (three children involving a total of seven teeth) occur in the non-eligible group. Two

TABLE III:7--ELIGIBILITY AND TYPE OF TREATMENT RECOMMENDED

	Eligible	Non-Eligible
Routine	33%	59%
Symptomatic	67%	41%
Total	100%[42]	100%[127]

instances of permanent teeth missing were discovered, each case involving two missing teeth, one child is eligible and the other is not.

Cavities needing attention is the problem most often cited by the hygienist and is recorded according to the urgency of need. When this need is considered for eligible/non-eligible second graders, as in Table III:8, it appears that although a greater proportion of eligible children need non-routine care the immediacy of need is greater for the non-eligible.

TABLE III:8--PERCENT OF CHILDREN NEEDING NON-ROUTINE CARE FOR TREATMENT OF CAVITIES BY ELIGIBILITY AND URGENCY

Treatment Urgency	Eligible	Non-Eligible
Routine	61%	40%
Urgent	36%	42%
Emergency	25%	31%

It should be noted that percentage do not total 100% due to some children being listed in more than one category of treatment urgency.

Again it seems the better preventive care patterns are not necessarily effective in warding off the emergency treatment needs.

Parental Perception of Child's Dental Health Compared with Hygienist's Evaluation

It has been hypothesized that parents in non-eligible families will more frequently perceive their children's dental health in terms compatible with the findings of the dental hygienist. The underlying assumption is that although eligibility is determined by income, income levels are so highly correlated with education and other measures of SES that non-eligible families are more likely to be aware of their children's dental health and correct in their judgements (H7).

Table III:9 summarizes parent evaluations with those of the dental hygienist. It should be noted that the actual frequencies in most cells are quite small and no generalizations about parental perception should be made from them. However, it does appear--in this sample--that compatibility of hygienist's recommendations and parental perception is not linked to eligibility (income and family size). Considering the extremes of parental perception--very good/very bad--those eligible for public dental care have 100% agreement with the hygienist's determination of need for routine or non-routine treatment, while the non-eligible parents agree 78% and 71% of the time respectively. In the category of parental perception 'good' there is greater agreement from non-eligible parents, 61%, than from eligible, 32%. Parents considering dental health

'not good' agree 75%, eligible and 80%, non-eligible, with a recommendation for non-routine treatment.

TABLE III:9--PARENT EVALUATION OF CHILD'S DENTAL HEALTH AND HYGIENIST'S RECOMMENDATIONS FOR TREATMENT BY ELIGIBILITY

Hygienist's Recommendation	Parent Evaluation							
	Very Good		Good		Not Good		Very Bad	
	E	N-E	E	N-E	E	N-E	E	N-E
Routine	100%	78%	32%	61%	25%	20%	---	29%
Non-Routine	---	22%	68%	39%	75%	80%	100%	71%
Total	100%[3]	100%[37]	100%[19]	100%[64]	100%[7]	100%[15]	100%[8]	100%[7]

Again it should be noted that actual frequencies are small. Although there does not seem to be a pattern of greater agreement between the hygienist and the non-eligible parents a much larger sample would be needed to adequately consider this question.

When parental perception is considered with the hygienist's evaluation of oral hygiene (H8) we find that of those evaluated as 'very good' or 'good' by parents all have 'good' or 'fair' oral hygiene, with the greater percentage 'fair' in all instances whether eligible or non-eligible (see Table III:10). In the parental perception categories of 'not good' and 'very bad' some children of eligible families fall in the 'poor' oral hygiene category, 12.3% and 25.0% respectively, while none of the non-eligible children are considered to have poor oral hygiene.

While noting again that some frequencies are very small it may be suggested that parents--rich or poor--are pretty much in

TABLE III:10--PARENT EVALUATION OF CHILD'S DENTAL HEALTH AND HYGIENIST'S EVALUATION OF ORAL HYGIENE BY ELIGIBILITY

Oral Hygiene	Parent Evaluation							
	Very Good		Good		Not Good		Very Bad	
	E	N-E	E	N-E	E	N-E	E	N-E
Good	33%	43%	37%	23%	---	13%	---	---
Fair	67%	57%	63%	77%	88%	87%	75%	100%
Poor	---	---	---	---	12%	---	25%	---
Total	100%[3]	100%[37]	100%[19]	100%[64]	100%[8]	100%[15]	100%[8]	100%[7]

line with the expert opinion on their children's dental health. Parents who consider their children to have very good or good teeth do in fact have children with fewer non-routine treatment needs and better oral hygiene. Oral hygiene is a factor which certainly contributes to better dental health and may also be more valued by those parents who assume their children have good teeth, i.e., the oral hygiene is considered worth the effort. There does not seem to be, at least in this sample, any overall pattern which separates the eligible/non-eligible families in terms of parental perception and expert evaluation.

Perceptions of Barriers to Dental Care

It has been assumed that the poor, having fewer resources, encounter more situation barriers which raise the degree of effort involved in providing dental care. In other studies of health care practices it has been noted that even when the direct cost factor, professional services, is removed, the poor still have more problems

obtaining care. In the Kalamazoo area it has been assumed that these non-cost barriers, such as transportation and care for other children, account for many of the broken appointments at the public clinic.

The finding of this research would seem to support the hypothesis that the poor are more likely to perceive situational barriers which increase the degree of effort to a point which prevents care (H9, H9:a).

TABLE III:11--PARENTS' PERCEPTION OF SITUATIONAL BARRIERS TO DENTAL CARE BY ELIGIBILITY

Barriers	Eligible	Non-Eligible
Cost	76%	40%
Transportation	23%	7%
Office Hours	13%	7%
Child Care	23%	7%
Child's Fear	11%	2%
Wait for Appointment	32%	16%

Table III:11 summarized the problems mentioned by both eligible and non-eligible families which they encounter when trying to arrange to take a child to the dentist. In all areas a much higher proportion of the eligible families perceive a barrier. Cost, as would be expected, is the most frequently cited by both eligible and non-eligible. Waiting to get an appointment is the second most commonly mentioned problem for both. As has been previously noted the eligible families most often see a dentist for symptomatic reasons. It can be assumed then that when these families do attempt

to make a dental appointment for a child it is because a problem situation has developed which causes pain and interferes with the child's activities, delay becomes a major concern. Transportation and arranging for child care for other children in the home, whether as inconvenience or related costs, trouble almost one fourth of the eligible families.

The eligible families perceive at least dual barriers, affecting more than 5% of the families, in eight instances. The non-eligible families report dual barriers, at a proportion of 5% or more, in only two instances (H9:b); cost/transportation and cost/child care. Both of these dual barriers affect 5% of the non-eligible families. The eligible families, however, perceive dual barriers in the following eight areas:

Cost/transportation 19%

Cost/hours 6%

Cost/child care 19%

Cost/child's fear 9%

Cost/wait for appointment 26%

Transportation/child care 13%

Transportation/wait for appointment . . 15%

Child care/wait for appointment 19%

The hypothesis that eligible families are more likely to perceive multiple barriers would appear to be supported. While the major barrier is cost of dental care, it becomes evident that even when this is removed, as is the case of public dental care,

the poor do not necessarily find it convenient, or possible, to take advantage of the services offered.

Knowledge of and Attitudes Toward Use of a Public Dental Health Clinic

Again, as in Chapter II, the assumption has been made that those most in need, the eligible, will be most accepting of the idea of free care (H10). Again it must be mentioned that this study only deals with what the respondents say they would do in terms of public dental care. Whether or not these same parents would actually take their children to the public clinic is a question beyond the scope of this research. Considering the small numbers of respondents who evidence knowledge of the existence of the dental clinic it is obvious that not many of those who indicate they would use such a service are doing so.

Acceptance of the idea of a free dental program prevails among the eligible families with 91% indicating they would use such a service and 9% unsure. Of the non-eligible families 50% indicate they would take advantage of such a program, 34% would not.

TABLE III:12--PERCENT OF ELIGIBLE AND NON-ELIGIBLE FAMILIES WHO WOULD USE A FREE CARE FACILITY

	Eligible	Non-Eligible
Would Use	91%	50%
Not Sure	9%	16%
Would Not Use	---	34%
Total	100%[47]	100%[128]

Of the four respondents who were 'not sure,' three feared inferior care and one expressed loyalty to the family's present dentist.

Table III:13 summarizes the responses of parents to the question of preferred times for dental care. Included are only those respondents who indicated they would use a free care program, and times preferred by 5% or more of such respondents.

TABLE III:13—PREFERRED TIMES FOR DENTAL CARE

	Eligible	Non-Eligible
Weekday	30%	37%
Evening	17%	26%
Saturday	38%	23%
Weekday/Saturday	---	8%
Evening/Saturday	6%	---
Total	91%	94%

Totals do not equal 100% due to those few respondents preferring other combinations of time or indicating 'no preference.'

Further research would be needed to determine whether the preferred times are merely those most convenient or the only times when a parent could accompany a child to the dentist. If the expressed preferences of eligible families are, in fact, the only possible times for a child to be taken to the dentist, a clinic, open from nine to five, five days a week, does not make dental care available. In fact, such a situation would serve to heighten 'inconvenient hours' as a situational barrier raising the degree of

effort involved and perhaps ultimately preventing acquisition of care when the cost factor was removed.

Both eligible and non-eligible respondents when given a choice between a clinic or private dentist's office as the location of a free program, regardless of time preference, chose the office with greater frequency. While these respondents all indicated willingness to utilize a free care program it seems most would prefer that it appear to be private care.

It has also been assumed, based on SES measures as in Chapter II, that the non-eligible would be more likely to be aware that a program of free dental care is available for dentally indigent in the community (H11). Thus a paradoxical situation was anticipated in which those who would stand to benefit from dental services were expected to be least aware of the services offered. The findings do not support this hypothesis. As in Chapter II with class level of school district, eligibility does not seem to be related to knowledge of free dental care. The percentages of respondents believing it not to be available are almost identical, as shown in Table III:14.

TABLE III:14—KNOWLEDGE OF AVAILABILITY OF FREE CARE BY ELIGIBILITY

	Eligible	Non-Eligible
Not Available	68%	72%
Clinic	19%	8%
Other Place	8%	5%
Unknown Place	2%	15%
Total	100%[45]	100%[126]

While the expected difference between those eligible and non-eligible did not occur it is evident that the majority of those who could take advantage of the clinic are not aware of its existence. Again, of those believing free care to be available more of the eligible, for whom specific information about such a program would be more salient, correctly identified its source, 20%. The same percentage of those not eligible, 20%, either incorrectly identified the source or believed the program existed but did not know where.

Summary

In sum we find the dentally indigent family to be characterized by less reliance on the services of a dentist for young children than the non-indigent. It also appears that when such professional service is sought it is most likely to be for symptomatic reasons rather than for routine preventive care.

The dentally indigent family, characterized by lower income and/or larger family, than the non-indigent, perceives more barriers when attempting to acquire dental care for children. Not only does cost of care raise the degree of effort involved in getting a child to the dentist but the length of time one must wait for an appointment, difficulties getting transportation to the dentist, and providing care for other children in the family during the appointment are seen as major obstacles.

Most of the dentally indigent families indicate they would use a public dental care program for their children, while being totally unaware that such a program is available. The ideal program,

however, would seem to be that conducted evenings or Saturday in a private dentist's office.

CHAPTER IV

INTERPRETATION AND CONCLUSIONS

Reviewing the findings of this survey a description of the dental care desired and provided by families in different segments of the population emerges. The less affluent, or dentally indigent, family while able to cover basic costs of living, is unlikely to provide extras such as preventive or routine dental care. The children from these families are not as likely as the more affluent to have seen a dentist by the time they are in second grade. If, and when, they do visit a dentist it is probably for symptomatic purposes, little preventive or restorative work is accomplished. Positive relationships are seen between having a family dentist, taking the child to the dentist, taking the child for routine purposes and income, with these variables following an Upper Class, Middle Class, Lower Class Predominately White and Lower Class Predominately Black school district pattern as do income and educational levels in the sample.

Most of the dentally indigent children are considered by the dental hygienist to have 'fair' oral hygiene, an indication that some emphasis is being put on dental care and hygiene in the homes. This finding derives some support from the fact that, regardless of class, parents see brushing the teeth as the most important dental care behavior, followed by seeing a dentist once a year, and eating the proper foods. The lower as well as the upper class

area residents seem to have received the message as to what constitutes dental care according to dental health professionals or perhaps the toothpaste industry. Fluoride is mentioned only by the upper and middle class area residents, perhaps indicating that a difference in knowledge is to be found on a more specialized level than toothbrushing, dentists and foods.

It should also be noted that while these care behaviors have been defined as indicators of recognition of threat, this study has not focused on what that threat may be. No consideration has been given either to the physical aspect of the threat for the individual such as the pain of decaying teeth or difficulty to be experienced due to missing teeth, nor to the value the individual's reference group places on good dental health and stigma attached to noticeable, untreated, dental problems. Further research into what parents expect as the result of their children not brushing their teeth, not seeing a dentist, and not eating proper foods would be needed to clarify levels of recognition of threat found in various segments of the population.

From the examinations by the hygienist it is evident that many of the dentally indigent children need the services of a dentist, as do many of the non-indigent. Most of the immediate needs involve treatment of cavities, very few extractions are recommended and it can be concluded that restorative work, if obtained in the near future, would resolve the existing problems. The parents in all groups seem to be fairly perceptive when evaluations of children's teeth from 'very good' to 'very bad' are

compared to the hygienist's recommendations for treatment.

Most of the dentally indigent families see themselves beset with problems when they try to obtain dental care for their children. First, the cost is prohibitive. If they could manage to overcome that problem, perhaps through use of the dental clinic, there still remain questions of transportation and/or child care for other children in the family. These problems may reflect related cost factors or inconveniences, or both. Another major problem for the dentally indigent is having to wait for an appointment with a dentist. While the middle or upper class parent may be inconvenienced by waiting, the wait is probably for a routine appointment. The dentally indigent parent is more likely to try to make an appointment when an acute condition develops, waiting becomes more than inconvenience; it means prolonging pain for the child.

The dentally indigent family, as well as families in all SES groups, can be considered accepting of the idea of free care. Indications that the respondent would take advantage of a public program seems to vary inversely with SES, but positive response does not drop below 40% even for the upper SES group.

Pursuing the question of a public dental care program with an eye to service delivery systems it should be noted that the dentally indigent respondents are found to prefer that such a program take place in a private dentist's office rather than a clinic. Most of these parents would also prefer evening or Saturday appointments for their children. It will be recalled that

inconvenient or impossible office hours were seen as a barrier preventing care. Transportation, also a barrier, could be seen as presenting a far greater problem if there is but one location of service, the clinic. For those who must rely on public transportation in particular, and drivers to some extent, the private office sites may be seen as lowering the degree of effort by moving a source of service closer to the individual.

Ideally, it would seem from the respondents in this survey, a service delivery system for dental care would involve decentralized sites for service in private offices; would be accessible by public transportation or demand only a short drive or walk; would be available evenings and Saturdays to serve those who cannot get to appointments during the business hours from Monday through Friday; would include some form of emergency service so no lengthy wait was involved before the child could see a dentist; would build in some system of child care which would resolve the problem of what to do with other children in the family while one is being taken to the dentist; as well as through free care, or sliding scales, remove the barrier of cost. Unfortunately the service available in the community meets only the last of these criteria.

It cannot be determined within the scope of this survey whether parents preferring evening or Saturday dental appointments in a private office would, or could accept care in a clinic during the week. We do not know the extent to which work hours may prohibit taking a child to the dentist, nor the intensity of the negative feelings toward clinic care. We do know that roughly

two-thirds of the dentally indigent respondents do not believe there is any way they can get free care for their children in the community. Almost exactly the same proportion of those not eligible to use the clinic services do not know such a service exists either. Of those who believe care is available, many are confused as to where. However, the eligible are more accurate in identifying the source of such a service than are the non-eligible. Since most of those who would qualify for free, public dental care for their children do not even know of the availability of such a program it is impossible to know what actual use would be made of the services as they are offered now.

Finally, returning to the Suchman model of health care behavior we might look at the recognition of threat seen by the respondents in terms of perception, interpretation and salience. It would appear that in all segments of the survey population perception of important dental care behaviors is similar. While we cannot define the threat as seen by the respondents certain behaviors are perceived as lessening the likelihood of the threat-result. It can be assumed that whatever the individual definition may be, some form of 'good' dental health is seen as desirable and certain behaviors perceived and interpreted as helping to achieve this.

Unfortunately the available data do not permit analysis of the action taken on the perceived importance of brushing teeth, or eating the proper foods, but only the behavior of seeking professional care. It cannot be determined if the recognition of threat is great enough, and degree of effort involved low enough for action

to be taken in the home care areas, nor can we evaluate the situational barriers such as cost of toothpaste or certain foods, which might raise the degree of effort. In the area of seeking professional care we find greater importance attributed to this behavior by those who engage in it least but under most extreme conditions--acute symptomatic treatment. At this point the recognition of threat, pain, would seem to overcome the barriers. These situations would also produce the most dramatic results, pain relieved as opposed to merely clean, X-rayed teeth which result from a routine visit to the dentist. Professional dental care may become salient only under acute, symptomatic situations in which there is a high degree of threat for the dentally indigent.

At the same time it must be remembered that the indigent must overcome more situational barriers in acquiring dental care, a factor which, while reducing the likelihood of professional dental care being provided on a routine/preventive basis, may add to its perceived importance when it is acquired.

Similar knowledge, or lack of knowledge, of the public program available was found for all segments of the population. Again a difference in interpretation and salience may be indicated: the more affluent who would not define or interpret themselves as dentally indigent may be aware of the service but such information does not reach a degree of salience to require remembrance of the source of the service.

In conclusion, this research would seem to support the Suchman model in the area of dental health care. The degree of effort

involved in obtaining preventive care, or symptomatic care, can be seen as considerably higher for the lower class and dentally indigent. Many more barriers are perceived which prevent care, and greater proportions of the lower classes and indigent report such barriers. Class linked differences in terms of recognition of threat do not become as distinct. It may be assumed that in many areas the various segments of the population recognize the same needs and socially accepted care practices. Whether observed behavior differences result from differences in situational barriers or varying levels at which threat is recognized cannot be determined on the basis of this survey. Further research would also be necessary to determine if such apparent similarities as those found in recognition of important care practices reflect attitudes which cut across class lines or are in fact a function of very different socializing and definitional processes which produce similar behavior.

APPENDIX A

Sample Selection

Data from 1960 census was compiled regarding racial composition, median educational attainment of persons over 25 years of age, and median income of families, for each census tract in the city of Kalamazoo. (See Maps 1 and 2) From the educational and income levels tracts were ranked as to SES.*

Tract 12 is considered the highest SES tract with median educational level of 14.7 years and median income of $11,579.

This is considerably above the second highest in each category, 12.8 and $7,899.

At the opposite end is tract 2 with MEL of 8.4 years and MIL of $4,081. Close to tract 2 are tracts 4 and 9 with MEL of 10.5 and 8.9, and MIL of $3,906 and $4,945 respectively. Tracts 2 and 9 are the only areas with medians below 9 years (half the adults have completed less than one year of high school). Tracts 2, 9, and 4 are the only areas with MIL under $5,000.

Between these two extremes are the remaining tracts with MILs ranging from $5,000 to $8,000 and MELs from 9.0 to 12.8. In

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*The researcher is aware that nine years elapsed since the 1960 census and recognizes that some changes may have occurred. It is assumed, however, that in relationship to one another, i.e., higher-lower incomes, distribution of blacks/whites, etc., the various areas in the city remain much the same though the medians and percentages may have changed within the tracts.

considering education the city appears split on a diagonal from NW to SE, the area above this line having lower medians. The three lower income tracts all lie within the lower educational area.

Racially only five tracts, 1, 2, 3, 4, 9, have a population with over 5% black or "other."* Only tract 2 has a predominately non-white population, 59%. Tracts 1 and 3 are 80% and 79% white respectively. Tracts 4 and 9 are 90% and 87% white. The remaining tracts are all less than 5% non-white, with ten of them over 99% white.

Considering this information an upper SES sample should come from tract 12, a lower SES sample predominately black from tract 2 and white from tract 9. Between these, a middle SES sample could be drawn from almost any tract.

Unfortunately school boundaries do not follow the census tract boundaries. Some arbitrary decisions based on informal observation on the part of the researcher are involved here.

Tract 12, upper SES, is divided into three school districts, Hillcrest, Parkwood-Fairview, and Winchell with an area optional between Hillcrest and Winchell. The Hillcrest area overlaps into tract 6, 98% white, 12.2 MEL and $5,613 MIL. Parkwood takes in some of tracts 11 and 17 (98%, 10.7, $5,976 and 99%, 12.2, $7,494,

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*The three major categories distinguished in census data are white, Negro, and "other"--"other" including Asians, East Indians and American Indians. In Kalamazoo the number of "others" is negligible, comprising less than 2% of the population in any tract--in most tracts this is also true of the black population.

respectively). Winchell picks up part of tract 16 (99%, 12.3, $7,066). Based on these figures and observation the upper SES sample should come from Winchell (and Hillcrest as Winchell doesn't have three second grade classes).

The lower SES samples ideally should come from tracts 2 (black) and 9 (white). Lincoln school district takes in most of tract 2 and is mostly in tract 2. If a larger sample had been needed North Glade school would have been included. North Glade takes in the remainder of tract 2, some of tract 3 (79%, 9.0, $5,505), and a small portion of C-15C (96%, 10.2, $6,335). As it turned out Lincoln school had more than three second grade classes and was the only school from which the low SES black sample was drawn.

Lakewood school district which picks up part of tract 9, C-18C (99%, 9.6, $5,081), and 18A (99%, 12.3, $6,555) provided two of the three lower SES white classes. Although tract 18A does not fit as lower SES the researcher had considerable contact with this area from 1966 to 1968 and found Lakewood school maintaining its low SES character in spite of tract 18A. The third low SES white class came from Edison school district which also is partially in tract 9. Other tracts in the Edison district are 8 (96%, 10.2, $5,195, 10 (99%, 11.5, $6,212), and a tiny corner of 11 (98%, 10.7, $5,976).

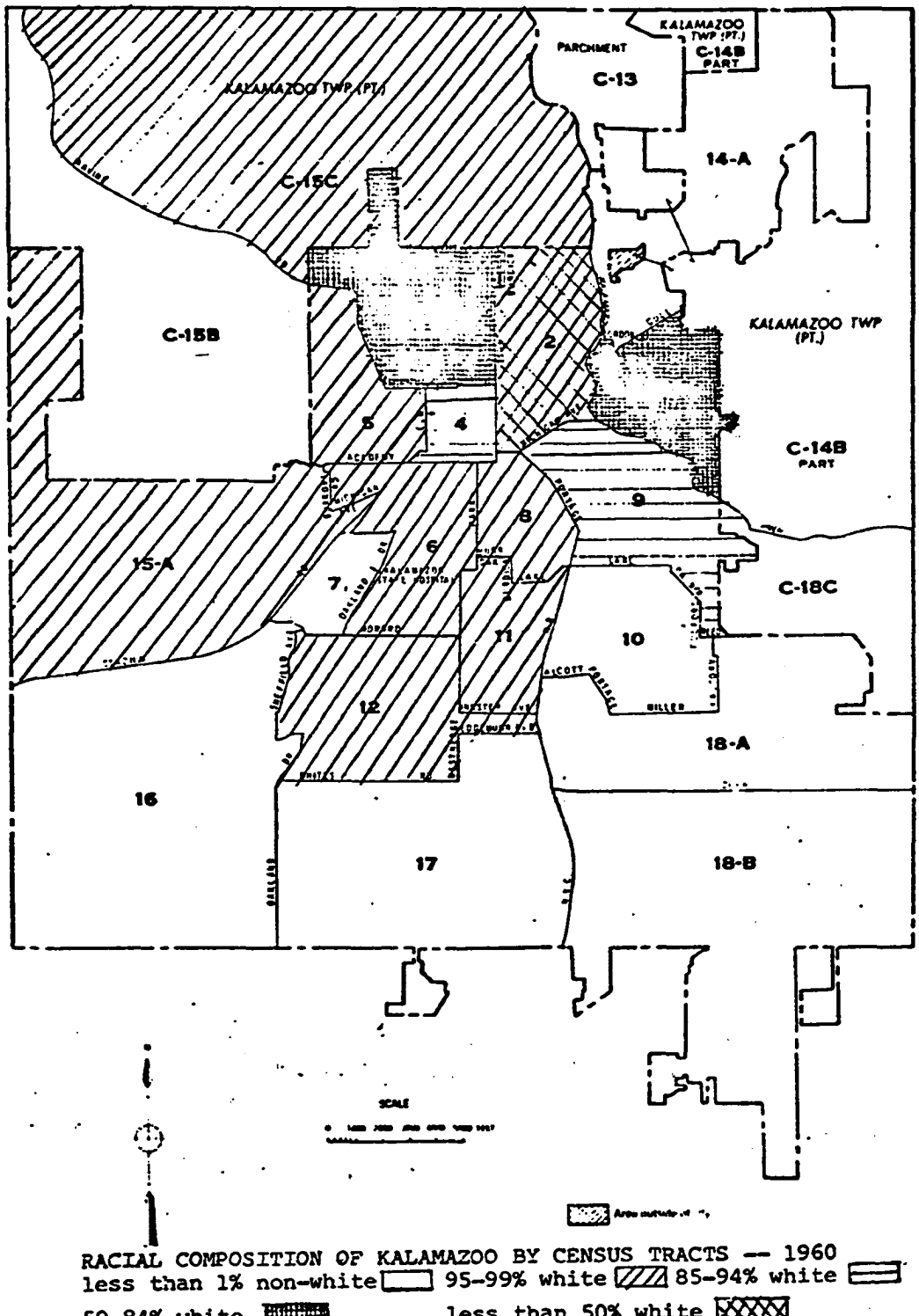
For a middle SES sample selection was more arbitrary. Informal observation was much relied upon here. First choice was South Westnedge, tract 17 (99%, 12.2, $7,494). Second choice as South

Westnedge did not have three second grades, was Oakwood school in tracts 17 and 16 (99%, 12.3, $7,066).

MAP 1

CENSUS TRACTS IN THE KALAMAZOO SMSA

INSET MAP - KALAMAZOO CITY AND ADJACENT AREA



RACIAL COMPOSITION OF KALAMAZOO BY CENSUS TRACTS — 1960

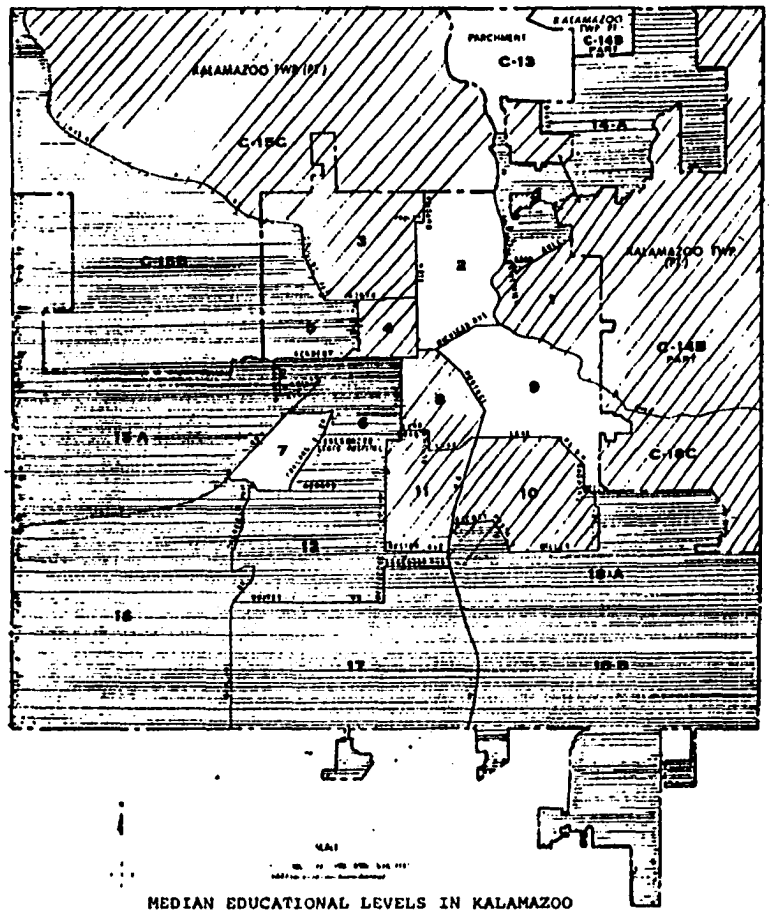
less than 1% non-white | 95-99% white | 85-94% white

50-84% white | less than 50% white

MAP 2

CENSUS TRACTS IN THE KALAMAZOO SMSA

INSET MAP - KALAMAZOO CITY AND ADJACENT AREA

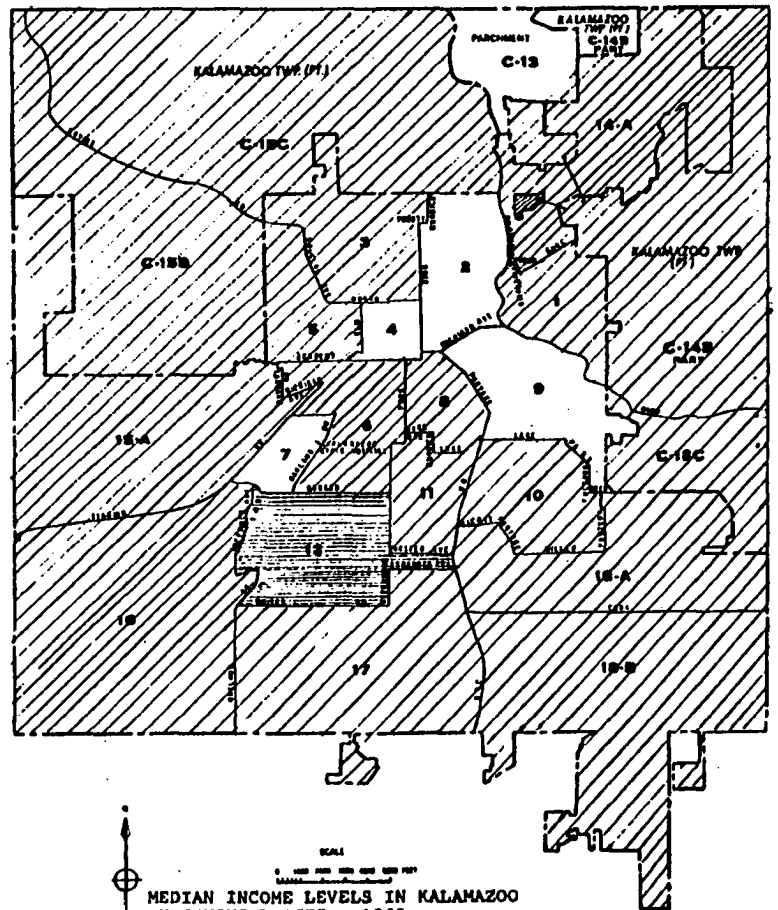


MEDIAN EDUCATIONAL LEVELS IN KALAMAZOO
BY CENSUS TRACTS - 1960

MEL 12 years and over
MEL 9-11.9 years
MEL less than 9 years

CENSUS TRACTS IN THE KALAMAZOO SMSA

INSET MAP - KALAMAZOO CITY AND ADJACENT AREA



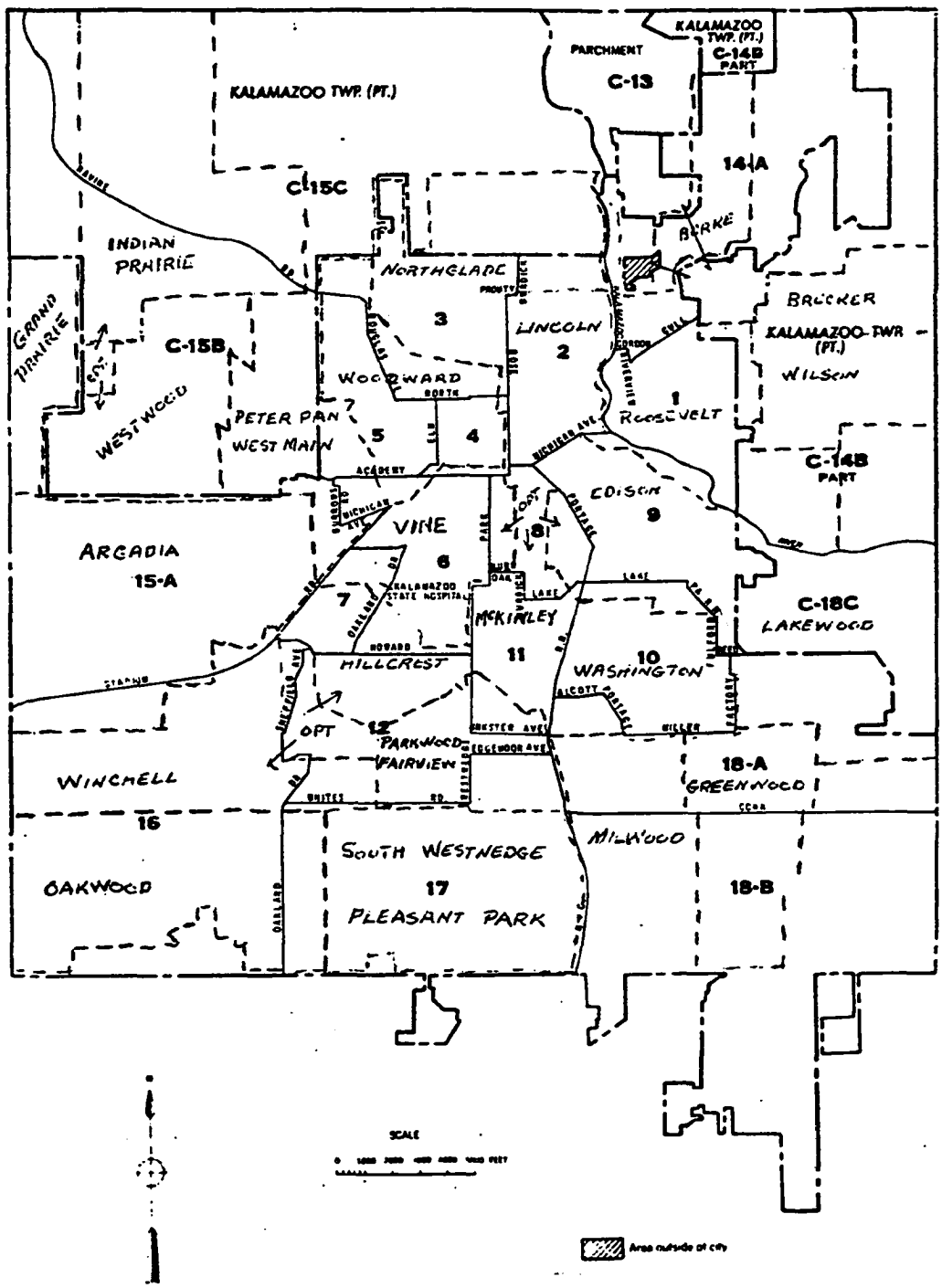
MEDIAN INCOME LEVELS IN KALAMAZOO
BY CENSUS TRACTS - 1960

MIL over $10,000
MIL $5,000-9,999
MIL under $5,000

MAP 3

CENSUS TRACTS IN THE KALAMAZOO SMSA

INSET MAP - KALAMAZOO CITY AND ADJACENT AREA



SCHOOL DISTRICTS AND CENSUS TRACTS

CENSUS TRACT DATA

Tract	Total Pop.	White	Black	Other	MEL	MIL
1	3.460	2,773	680	7	10.1	5,673
2	3,896	1,611	2,245	40	8.4	4,081
3	5,670	4,490	1,169	11	9.0	5,505
4	1,933	1,811	115	7	10.5	4,906
5	4,260	4,214	37	9	12.2	6,265
6	7,102	6,974	90	38	12.2	5,613
7	Does not apply, Kalamazoo State Hospital					
8	3,654	3,524	113	17	10.2	5,195
9	2,970	2,544	419	7	8.9	4,945
10	7,824	7,808	6	10	11.5	6,212
11	3,574	3,528	40	6	10.7	5,976
12	3,966	3,896	54	16	14.7	11,579
14A	4,612	4,606	2	4	12.3	7,074
15A	6,815	6,696	93	26	12.8	6,167
16	4,743	4,736	2	5	12.3	7,066
17	5,893	5,871	12	10	12.2	7,494
18A	4,334	4,325	3	6	12.3	6,555
18B	3,795	3,793	1	1	12.4	7,899
C14B	9,118	9,080	22	16	11.7	6,829
C15B	7,380	7,349	26	5	12.5	7,836
C15C	2,050	1,967	73	10	10.2	6,335
C18C	1,618	1,611	3	4	9.6	5,031

APPENDIX B

Instruments, Covering Materials and Code Book

KALAMAZOO VALLEY DENTAL SOCIETY

905 West South Street
Kalamazoo, Michigan 49007

Dear

As the parent of a second grade child in the Kalamazoo Public Schools you are being asked by the Dental Concerns Committee and Dental Society to help with a study of the dental care and dental needs of school children in Kalamazoo. With your assistance and that of other select parents we can gather the information needed to best meet the needs of our children.

Within a few days you will receive a questionnaire and a stamped, self addressed envelope. Please take the few minutes needed to fill out the questionnaire and return it. All information will be kept confidential, no names of parents or children will be used in the study.

Thank you for your help.

Sincerely,

Dental Society

Dental Concerns Committee

KALAMAZOO VALLEY DENTAL SOCIETY

905 West South Street
Kalamazoo, Michigan 49007

Dear Parents,

As parents of a child in the Kalamazoo Public Schools you are being asked by the Dental Concerns Committee and Dental Society to help with a study of the dental care and dental needs of school children in Kalamazoo. With your assistance and that of other select parents we can gather the information needed to best meet the needs of our children.

Please fill out the questionnaire your second grader brought home to you and have your child return it to the teacher. All information will be kept confidential so do not put your name or your child's name on the questionnaire. The envelope is attached for your convenience in returning the questionnaire.

Thank you very much for your assistance.

Sincerely,

Dental Society Dental Concerns Committee

KALAMAZOO VALLEY DENTAL SOCIETY

905 West South Street
Kalamazoo, Michigan 49007

Dear

A short time ago you received a letter asking you to help in a study of the dental health and dental needs of school children. This study will aid in planning the best possible services for your children.

Enclosed is the questionnaire and a stamped self addressed envelope for your convenience in returning it. Please fill out the questionnaire completely and return it as soon as you are able.

Your cooperation is most important in planning the best possible dental service for the children of our community. Of course all information is confidential.

Thank you very much for your assistance.

Sincerely,

Dental Society Dental Concerns Committee

KALAMAZOO VALLEY DENTAL SOCIETY

905 West South Street
Kalamazoo, Michigan 49007

Dear

Several days ago you received a questionnaire through which you were asked to help the Dental Society and Dental Concerns Committee improve their services to Kalamazoo's children. The demands on the time of parents of school children are great and we apologize for adding to this burden. The results of this research are so important that we ask for your aid in securing these benefits for our children.

Please use the stamped, self addressed envelope for the return of your questionnaire. All responses will be confidential.

Sincerely,

Dental Society Dental Concerns Committee

KALAMAZOO VALLEY DENTAL SOCIETY

905 West South Street
Kalamazoo, Michigan 49007

Dear

Some time ago we asked your aid in the research of the Dental Concerns Committee and Dental Society to better meet the needs of Kalamazoo's children. We are aware that things sometimes get misplaced so we are enclosing another questionnaire and an additional stamped, self addressed envelope.

As you know, only you, the parents, can supply this needed information. And without your information, effective plans cannot be made to help the children in Kalamazoo. The information you give will be kept confidential, no individual responses will be made public.

Thank you for your time and effort.

Sincerely,

Dental Society Dental Concerns Committee

KALAMAZOO VALLEY DENTAL SOCIETY

905 West South Street
Kalamazoo, Michigan 49007

Dear

Several weeks ago we asked for the help that only you can give in providing the Dental Society and Dental Concerns Committee with the information needed in their research. Your aid is vital in understanding how best we can provide our children with the free dental services needed to help maintain their health. We will be grateful for the cooperation of all concerned parents in our select sample.

If you have misplaced both questionnaires and stamped, self addressed envelopes sent you we will be pleased to send you others. Please contact Miss Bell, Research Project Director, 342-0225, or write to her at 711 South Westnedge, Kalamazoo, for another questionnaire.

Please do not sign your name to the questionnaire. All responses must be confidential.

Thank you for your help in this important research.

Sincerely,

Dental Society Dental Concerns Committee

Please fill out the questionnaire as completely as possible. Most of the questions can be answered by a check mark on the appropriate blank, a few will ask that you write in an answer. When you have completed the questionnaire, please put it in the envelope we have provided and return it to us. Thank you for your help.

1. Your relationship to the second grader: Mother_____

   Father_____ Legal Guardian_____ Other_____

2. Do you have a family dentist? Yes_____ No_____

   If yes, please write in the dentist's name_____

3. When was the last time your 2nd grade child went to the dentist?

   Has not gone yet_____

   During the past year_____

   One to two years ago_____

   More than two years ago_____

4. Why did the child go to the dentist?

   Routine check-up_____

   Toothache_____

   Cavities to be filled_____

   Problems with permanent teeth coming in_____

   Broke a tooth_____

   Other (please write in reason)_____

5. Parents often have some problems trying to arrange to take a child to the dentist. Listed below are some of the problems other parents have had. Check all the ones you have faced.

   Transportation to the dentist's office_____

   High cost of dental care_____

   Dentist's hours are not convenient_____

   Can't get baby sitter for other children_____

   Child is afraid, does not want to go_____

   Takes too long to get an appointment_____

6. Do you know if any children can receive free dental care in Kalamazoo?

   Yes_____ No_____ If yes, write in where_____

7. Would you take your child for free dental care if you

could?

Yes_____ No_____ Not sure_____

8. If no, or not sure, write in the reason_____

_____

9. If you wanted to take your child for free dental care, would you prefer

Weekdays, 8:00 a.m.-5:00 p.m._____ Evenings, 7:00-9:00 p.m._____

Saturdays, 8:00 a.m. to noon_____

10. Would you prefer a clinic____or private dentist's office _____

11. How good do you think your second grader's teeth are?

Very good_____ Good_____ Not good_____ Very bad_____

Don't know_____

12. Which do you think is most important for good teeth_____ (write the number in the blank above)

1. Brushing teeth often
2. Going to the dentist once a year
3. Eating the right foods
4. Being careful not to injure teeth in sports
5. Having fluoride in the water
6. Other (write in)

13. Which is second most important_____, which is third_____

14. Which is most important for your child as he or she grows up? Education_____

Money_____

Health_____

Being good in sports_____

Being good looking_____

Popularity_____

Other (what)_____

15. How long have you lived in the city of Kalamazoo?_____

16. Where did you live before living in Kalamazoo:_____

17. How many people are there living in your home?_____

Mother_____ Father_____ Children (how many)_____

Other (how many)_____

18. What are the ages of the children, from oldest to youngest?

_____

Please circle age of child who is in second grade

FATHER

19. Age_____

20. Last year (grade) of school completed_____

21. Employed, Yes_____ No_____

if yes, where_____

22. Type of work_____

MOTHER

23. Age_____

24. Last year (grade) of school completed_____

25. Employed, Yes_____ No_____

if yes, full time_____ part time_____

where_____

26. Type of work_____

27. Please indicate the category in which the total family income for 1969 falls

a. Less than $3,000_____	g. $5,500 to $5,999_____
b. $3,000 to $3,499_____	h. $6,000 to $6,999_____
c. $3,500 to $3,999_____	i. $7,000 to $7,999_____
d. $4,000 to $4,499_____	j. $8,000 to $8,999_____
e. $4,500 to $4,999_____	k. $9,000 to $9,999_____
f. $5,000 to $5,499_____	l. $10,000 and over_____

KALAMAZOO PUBLIC SCHOOLS
Division of Instruction, Guidance and Pupil Personnel

CLASSROOM DENTAL RECORD

School_____ Teacher_____

Grade_____ Date_____

Name	Oral Hygiene	Routine Care Only	Extract. Indicated	Cavities Needing Attention Per. Dec.	Malocclusions	Has P. Fill-T. ings M.	Remarks

G - Good
F - Fair
P - Poor

Needs Attention - 1X - Routine
2X - Urgent
3X - Emergency

Malocclusion means irregular teeth
P.T.M. indicated permanent teeth missing other than 3rd molars
*Parent present

MAILING PROCEDURE

PRE-QUESTIONNAIRE LETTER

* To go out Feb 2 or 3 to all parents
Type in parent's name on letter
Send all letters to "Mr & Mrs _____" unless only mother's name appears on list, then address to "Mrs."

LETTER AND QUESTIONNAIRE

* To go out Feb 9 or 10 to all parents
Type in parent's name
Be sure each envelope includes:
a) cover letter
b) questionnaire
c) stamped, self addressed envelope

BE SURE EACH QUESTIONNAIRE IS CODED WITH RESPONDENT'S I.D. NUMBER!

FIRST FOLLOW UP

* To go out Feb 16 or 17
Send only to those who have not returned Q
Type in parent's name

SECOND FOLLOW UP

* To go out Feb 23 or 24
Send only to those who still have not returned Q
Type in parent's name
Be sure each envelope includes:
a) cover letter (2nd follow up)
b) questionnaire
c) stamped, self addressed envelope

BE SURE EACH QUESTIONNAIRE IS CODED WITH RESPONDENT'S I.D. NUMBER!

THIRD FOLLOW UP

* To go out March 1 or 2
Send only to those who still have not returned Q
Type in parent's name

AS QUESTIONNAIRES ARE RETURNED:

Decode and write ID no. on the questionnaire
Check off from list those returned
Note whether response is after 1st, 2nd, 3rd, or 4th contact

(Interviewer Procedure)

1. Note name and address and I.D. number of respondent on questionnaire.

2. Contact a parent or legal guardian of the second grader.

3. Introduce yourself, inform respondent that:

   You are assisting the Dental Society with a study of the dental health and needs of school children in Kalamazoo.

   The Dental Society needs some information from parents in order to plan the best possible services through the Dental Clinic to meet the children's needs.

   That respondent, along with other select parents of 2nd graders, is being asked to assist with the study by answering a few questions. Stresss confidential nature of information.

4. Use questionnaire as interview schedule, check respondent's answers on questionnaire.

5. On final question, income, hand respondent card with income categories and ask respondent to tell you by the letter, A.B.C., etc., which category applies.

6. Thank respondent for his or her assistance.

7. If respondent refuses to be interviewed or refuses to complete interview note this on questionnaire. If possible get reason for refusal.

8. Also note any remarks respondent makes which are at all relevant to dental health, care, dentists, child care, respondent's children, etc., and studies/interviewers at the door, etc.

CODE BOOK

Question	Column	Code	Item
1	1		Relationship to 2nd grader
		1	Mother
		2	Father
		Both	Mother and Father
		4	Legal Guardian
		5	Other
		9	N.R.
2	2		Family Dentist
		1	Yes, and Name
		2	Yes, no Name
		3	No
		9	NR
3	3		Last Time Child Saw Dentist
		1	Has not gone yet
		2	During past year
		3	1-2 years ago
		4	Over 2 years ago
		9	NR
4	4		Reason for Visit to Dentist
		1	Routine
		2	Toothache
		3	Cavities
		4	Permanent Teeth (problems with)
		5	Broken Tooth
		6	Braces
		7	Caps
		8	Teeth to be pulled
		9	NR
5	5		Problems Getting Child to Dentist
		1	Have Problems
		2	No problems
		9	NR

Con't

Code Book

Question	Column	Code	Item
6	6		Availability of Free Care
		1	Yes and clinic
		Yes	Yes, other place
		3	Yes, no place stated
		4	No
		9	NR
7	7		Would Use Free Care
		1	Yes
		2	No
		3	Not sure
		9	NR
8	8-9		Reasons for Not Using Free Care
		01	Others need it more
		02	Fear of inferior care
		03	System would be too complicated
		04	Loyalty to own dentist
		05	Child might be afraid
		06	Financially able to provide care
		99	NR
9	10		Preferred Time for Free Care
		1	Weekdays
		2	Saturdays
		3	Evenings
		4	Weekday and Saturdays
		5	Saturdays and Evenings
		6	Weekdays and Evenings
		7	All Three
		9	NR
10	11		Preferred Place for Free Care
		1	Clinic
		2	Private office
		3	No preference

Con't

Code Book

Question	Column	Code	Item
11	12		Perception of Child's Dental Health
		1	Very good
		2	Good
		3	Not good
		4	Very bad
		5	Don't know
		9	NR
12	13		Most Important for Good Teeth
		1	Brushing.
		2	Dentist
		3	Right foods
		4	Careful not to injure
		5	Fluoride
		6	Prenatal care
		7	Heredity
		9	NR
13	14		2nd Most Important
		Same	
	15		3rd Most Important
		Same	
14	16		Most Important for Child
		1	Education
		2	Money
		3	Health
		4	Sports
		5	Looks
		6	Popularity
		7	Well rounded personality
		8	Becoming a Christian
		9	NR

Con't

Code Book

Question	Column	Code	Item
15	17-18		Years Residence in Kalamazoo
		As is	
17	19		Persons in Home
		1	Mother
		2	Father
		3	Both Parents
		9	NR
17a	20-21		No. Children in Home
		As is	
		99	NR
17b	22-23		No. Other Persons in Home
		As is	
		88	None
		99	NR
18	24-25		Birth Order of 2nd Grader
		As is	
		00	Twins
		99	NR
19	26-27		Father's Age
		As is	
		99	NR
20	28-29		Father's Education
		As is	
		99	NR
21	30		Father Employed
		1	Yes
		2	No
		3	Deceased
		4	Not at home
		7	Student
		9	NR

Con't

Code Book

Question	Column	Code	Item
22	31		Father's Occupation
		1	Highest status, ex. top level executive, medical specialist, federal judge, law partner in prestige firm, etc.
		2	Second status, ex. M.D.-general practitioner, engineer, executive in local firm, professor in prestigious school, etc.
		3	Third status, ex. bank cashier, copy writer, Jr. executive, high school teacher, professor-municipal college, minister, etc.
		4	Fourth status, ex. bank clerk, dental technician, grade school teacher, factory foreman, office secretary
		5	Fifth status, ex. mechanic, barber, skilled factory worker, policeman, truck driver, etc.
		6	Sixth status, ex. semi-skilled factory worker, gas station attendant, stock clerk, waitress, etc.
		7	Lowest status, ex. dishwasher, domestic, janitor, gardener, etc.
		8	Unemployed
		9	NR
23	32-33		Mother's Age
		As is	
		99	NR
24	34-35		Mother's Education
		As is	
		99	NR
25	36		Mother Employed
		1	Yes, full time
		2	Yes, part time
		3	No

Con't

Code Book

Question	Column	Code	Item
		4	Deceased
		5	Not in home
		9	NR
26	37		Mother's Occupation
		(Code same as father's occup.)	
27	38-39		Family Income
		1	a
		thru	
		12	1
28	40-41-42		Identification Number
		As is	
29	43-44		Method
		11	Take home
		12	Interview
		31	Mail, response first contact
		32	Mail, 2nd contact
		33	Mail, 3rd contact
		34	Mail, 4th contact
5a	45		Transportation a Problem
		1	Yes
		2	No
5b	46		Cost a Problem
		1	Yes
		2	No
5c	47		Hours a Problem
		1	Yes
		2	No
5d	48		Babysitter a Problem
		1	Yes
		2	No

Con't

Code Book

Question	Column	Code	Item
5e	49		Fear a Problem
		1	Yes
		2	No
5f	50		Waiting for App't a Problem
		1	Yes
		2	No
30	51		Oral Hygiene
		1	Good
		2	Fair
		3	Poor
		9	Not included in Hygienist's Report
31	52		Type of Care Needed
		1	Routine
		2	Symptomatic
32	53		Number of Extractions Needed
		As is	
33	54		Per. Cavities Needing Attention
		1	Routine
		2	Urgent
		3	Emergency
		4	None
34	55		Dec. Cavities Needing Attention
		Code as above	
35	56		Has Malocclusion
		1	Yes
		2	No
36	57		Has Fillings
		1	Yes
		2	No
37	58		Number Permanent Teeth Missing
		As is	

APPENDIX C

Comparison of Data Collection Techniques

Although this research focused substantively upon questions of dental health and dental care consideration has also been given to methods for data collection. It has been suggested that, if changes in the program of the dental clinic are made, similar research might be undertaken at some future point in an attempt to measure the effects of the changes. Comparison of methods at this time can, perhaps, give an indication of the most efficient and effective method which could be employed in the future.

Class, again, seems to determine to an extent behavior. Many researchers, using various methods have noted the lower response rates of the lower classes. In an attempt to explain this phenomenon it has been suggested that motivation is lacking among the lower classes, they know little about research--and care less.[1] Education, which is a strong factor in SES, is also associated with a tendency to cooperate in surveys, those with greater education being more likely to return questionnaires.[2] Thus a pattern seems

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[1] Weiss, C. H., "Interviewing Low Income Respondents." Welfare in Review, IV (October 1966), 1-9.

[2] Moles, Oliver C., "Use of Mail Questionnaires to Collect Data from Low Income Families." Welfare in Review, V (February 1967), 21-24. See also Roeher, G. Allen, "Effective Techniques in Increasing Response to Mailed Questionnaires." Public Opinion Quarterly, XXVII (Summer 1963), 4299-4302.

to appear; those who have higher educational levels are more likely to know about research and/or the substantive content of a specific research project and consequently are more motivated to cooperate. Having higher education, these probable respondents are also more likely to be found among the upper classes.

A second consideration is the techniques employed, regardless of respondents' SES. With the typical 'one shot' mailed questionnaire response rates usually fall below those obtained through personal interviews.[1] However, the mailing technique developed by Robin[2] has produced response rates exceeding those of the personal interview method.

The take home method, also employed in this research, is by far the least involved, time consuming, or expensive, is also expected to be the least productive. Although the literature has yielded no reports of response rates for this type of data collection, informal observation leads to the following assumption: Young children are not as dependable as adults. The take home method of data collection involves children, in this instance second graders, who must manage to get the questionnaire home and back to the school, while the other methods make direct contact with adults. Teachers, and parents, seem to agree that notices, forms, etc., in the care of young children often do not survive the journey from school to home and back.

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[1] Simon, Julian L., Basic Research Methods in Social Science. New York: Random House, 1969.

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Analysis of responses in terms of class grouping and technique employed supports the assumption that the upper classes are more responsive regardless of method, as well as within each method, with the exception of the take home. Without regard to class, mailings did elicit the highest response rates and take homes the lowest.

TABLE C:1—RESPONSE RATES BY METHOD AND CLASS

Method	Class Grouping				Total
	Upper SES	Middle SES	Low SES-B	Low SES-W	
Take Home	63%	80%	63%	40%	62%
Interview	83%	83%	65%	75%	67%
Mail	88%	82%	65%	70%	78%
Total	77%	82%	65%	60%	72%

Table C:1 summarizes the return rates by class and collection technique. A notable exception to the pattern is with the upper class in the take home method, which tends to pull down the rate for the upper SES group. The upper and middle SES groups, however, do reamin the most responsive with all other rates 80% or above.

Considering specifically the response patterns of the lower SES groups method appears to have little effect in the predominately black area, with take homes only two percentage points lower than mailings or interviews. In the predominately white area the take home rate drops 30%. Interviewing seems to be slightly more effective, 5%, in the predominately white area than mailings, while no difference between these two methods occurs in the predominately black area.

In conclusion, no clear cut answer to the question of most effective method can be given. Although the large drops in return rate are noted in the take home method they occur in only two (upper and low-white) of the four class groupings. Mailings and interviews appear to elicit very similar response rates within each class group. The selection of a data collection technique in the future would probably best be based on consideration of time and cost factors rather than on previous experience with a particular method.

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