Dental Patients' Attitudes and Behavior Concerning Prevention

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A NATIONAL survey of the attitudes, beliefs, and behavior of 1,520 adults concerning dental health was conducted in October 1965 by the National Opinion Research Center for the Division of Dental Health, Public Health Service.

"The sample was a standard, multistage area probability sample to block or segment level. At the block level quota sampling was used, with quotas based on sex, age, race, and employment status" (*1*). The results of the survey revealed how people view "preventive" dental health.

This paper relates personal and social characteristics such as age, education, sex, race, income, and size of community to positive actions and beliefs about preventing oral disease. Such orientations are defined for this study by the following behavior and attitudes: (*a*) recently going to see a dentist, (*b*) visiting a dentist for preventive rather than symptomatic reasons, (*c*) believing that going to a dentist makes "much" difference in preventing or reducing tooth decay and gum disease, and (*d*) believing that toothbrushing does "much good" in preventing or reducing tooth decay and gum disease.

Our main intent is to describe and to probe into how persons in major population categories act and feel about preventive dental care. In table 1 each preventive element is related to several background characteristics. To some extent the degree of orientation to preventive care among respondents is explained by these characteristics. Thus, certain dental beliefs and practices are related to social class. Because education and income are measures of class, they tell us why certain people believe as they do.

Although most of the attributes presented in table 1 are interrelated in many ways, they are treated individually. Describing broad divisions of the American people according to their orientation to preventive care provides information that can be used in planning dental health programs. Finally, this kind of survey description is related to a growing body of social and psychological theory on behavior, some of it specific to dental health behavior (*2*).

Preventive Attitudes and Behavior

Before relating various background characteristics to preventive care, it was useful to see how well the six preventive elements hung together. The associations among the preventive characteristics are shown in table 2. Responses of persons to each item were grouped into two categories: those persons believing in prevention and those not believing in it. The degree of as-

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sociation was measured by Yule's Q, a crude statistic, which varies between minus 1 (negative association) and plus 1 (positive association). In general, we can interpret the results as evidence that the separate preventive components are positively interrelated. There is, however, a considerable range of Q values, indicating that there are also subclusters of associations within the major groupings.

More specifically, the answers to the two items relevant to an actual event, "When did you last go to the dentist?" and "Why did you go for that visit?" seem to indicate preventive motivation. Another way of stating this close relation-

Table 1. Percentage of adults with preventive behavior and attitudes on dental health, by demographic characteristics

Background characteristics	Went to dentist "within the last year"	Had preventive reason for last visit	Going to dentist makes "much" difference in preventing tooth decay	Going to dentist makes "much" difference in preventing gum disease	Tooth-brushing does "much" good in preventing tooth decay	Tooth-brushing does "much" good in preventing gum disease	Total respondents [1]
Education							
Elementary school	22	10	57	55	64	49	333
Some high school	41	19	73	68	74	55	320
High school graduate	49	38	70	65	72	54	424
Some college	61	50	73	69	71	61	219
College graduate	68	62	62	69	77	60	98
Postgraduate or professional training	74	63	66	62	74	56	99
Annual income							
Less than $2,000	16	11	56	55	63	49	165
$2,000 to $3,999	36	13	67	63	67	52	282
$4,000 to $5,999	41	26	72	66	72	50	305
$6,000 to $7,999	49	37	70	67	75	59	286
$8,000 to $9,999	58	47	65	64	69	49	170
$10,000 to $14,000	62	52	72	68	78	65	204
More than $15,000	76	70	61	67	69	60	94
Age group (years)							
Less than 25	54	35	66	59	71	49	162
26–35	52	38	75	71	73	54	345
36–45	54	44	68	66	75	61	350
46–55	47	33	66	66	66	51	250
56–65	35	21	61	61	71	52	194
66–75	26	16	69	61	70	58	159
More than 75	26	14	46	42	55	46	57
Sex							
Men	41	29	62	58	63	50	737
Women	50	36	73	70	78	59	783
Race							
White	48	36	67	64	71	55	1, 301
Negro	34	13	67	63	65	51	203
Community size							
Major metropolitan area	51	39	68	71	71	54	369
Other metropolitan	45	32	68	64	72	56	624
County with town of 10,000	49	37	68	64	68	54	242
Rural county	39	23	64	57	71	52	285

[1] Number of respondents may vary slightly from category to category.

Table 2. Associations among various dental actions and attitudes using Yule's coefficient of association

Actions and attitudes	Reason for most recent dental visit	Value of toothbrushing in preventing tooth decay	Value of toothbrushing in preventing gum disease	Value of going to dentist to cut down on tooth decay	Value of going to dentist to cut down on gum disease
Time of most recent dental visit	0.66	0.22	0.22	0.21	0.23
Reason for most recent dental visit	--------	.13	.21	.20	.21
Value of toothbrushing in preventing tooth decay	--------	--------	.92	.59	.51
Value of toothbrushing in preventing gum disease	--------	--------	--------	.53	.65
Value of going to dentist to cut down on tooth decay	--------	--------	--------	--------	.86

ship between motivation and recency of visit is that 72 percent of the persons who were preventively motivated said that they had visited the dentist within the year. Only 34 percent of the persons who were symptomatically motivated had done so and, conversely, only 5 percent of the preventively motivated had an interval longer than 3 years between visits to the dentist. However, 38 percent of the symptomatically oriented persons had an interval longer than 3 years between visits.

Attitudes, in turn, evidently seemed interrelated, and subclustering of attitudes appeared within the major categories. Thus people who believed in the efficacy of dental visits for reducing decay were very likely also to believe in the efficacy of visits for reducing gum disease. Similarly, persons who believed that toothbrushing prevented decay also believed toothbrushing helped prevent gum disease.

Social Characteristics and Prevention

Recency of last dental visit. The replies to the question, "When was the last time you went to a dentist?" were as follows:

Reply	*Percent*
Within the last year	46
Between 1 and 2 years	18
Between 2 and 3 years	8
Longer than 3 years	26
Have never been to a dentist	1

All background characteristics were related to the time of the last dental visit. This observation paralleled findings from the National Health Survey (*3*). The more education a person had, the more likely he was to have visited the dentist within the past year. Thus, only about one-fifth of the persons with an elementary school education said they had been to the dentist during the year. Two-thirds of the college graduates, however, and three-fourths of persons with postgraduate and professional training had done so.

The same trend was shown in the income categories; as income increased so did the person's desire for preventive dental care. At the bottom of the economic ladder, for example, of persons earning $2,000 or less per year, only 16 percent had visited the dentist. Seventy-six percent of those persons earning $15,000 or more had visited the dentist.

About half the people in the three "45 and under" categories had visited the dentist during the year. About a fourth of the people in the over 65 age category said they had done so. About one-third of the Negroes and almost half of the whites in the entire sample had visited the dentist.

Women were a little more likely to go to the dentist than were men, and people living in rural areas were somewhat less likely than those living in more populous areas to have visited the dentist in the past year.

Reasons for dental visits. Background characteristics were related to the kind of motivation, classified as either preventive or symptomatic, which people had for making their last visit. To the question, "How did you happen to see the dentist at the time you went?" Those persons who were preventively motivated (33 percent) said, "I went to get my teeth cleaned" or "It was time for a checkup." Those persons who were symptomatically motivated (68 per-

cent) said, "My teeth or gums bothered me" "I thought something was wrong" or "I went to get some specific work done."

The respondents who had more education and income were more likely to go to the dentist for preventive reasons. The differences in education and income were as striking as the variations in answers on recency of visit. Thus, 10 percent of the persons with an elementary education said their last visit was for preventive reasons, but 62 percent of the college graduates had gone for preventive reasons.

Adults 36 to 45 years of age were more likely to go for preventive reasons than were persons younger or older. Whites (36 percent) were considerably more likely to say they had gone for preventive reasons than were Negroes (13 percent). Persons in rural areas were less likely to visit the dentist for preventive reasons than persons living in more populous areas. Women were only slightly more likely than men to have visited the dentist for preventive care.

Preventing tooth decay and gum disease. The answers to the question, "How much difference does going to the dentist make in preventing or cutting down on tooth decay?" were as follows:

Reply	*Percent*
Much difference	68
Some difference	22
Little difference	4
No difference	5
Don't know	1

Women were more likely than men to agree that going to the dentist made "much difference for reducing decay."

Age, income, and education of respondents were irregularly related to agreement with this belief. However, adults who were 76 or older, those earning $2,000 or less per year, and those with only grammar school training were least likely to endorse going to the dentist as making "much difference" in reducing decay.

Race and population size of locality were not related to answers to this question.

The answers to the question, "How much difference does going to the dentist make in preventing or cutting down on gum disease?" were as follows:

Reply	*Percent*
Much difference	64
Some difference	23
Little difference	5
No difference	4
Don't know	4

Women were more likely than men to agree that dental visits make "much difference" in preventing gum disease. Respondents living in major metropolitan areas were more likely than those living in other places to agree that dental visits helped prevent gum disease.

Education and income seemed unrelated to agreement, except that persons having the lowest incomes and the least education were less likely than others to agree that the dentist's role makes "much difference" in the prevention of gum disease.

The youngest and oldest respondents were less likely than the others to agree that visits to the dentist cut down on gum disease. Negroes and whites did not differ in their responses on this category of the questionnaire.

Toothbrushing to prevent tooth decay and gum disease. The answers to the question, "How much good do you think toothbrushing does in preventing or cutting down on tooth decay?" were as follows:

Reply	*Percent*
Much good	71
Some good	24
Little good	3
No good	1

Women were more likely than men, and whites only slightly more likely than Negroes, to believe wholeheartedly in the value of toothbrushing against decay.

Respondents in the oldest age group were less likely than others to agree that toothbrushing did "much good" in preventing decay.

Those with the least education and those with the lowest incomes were less likely than others to agree that brushing did "much good."

Population size of place of residence did not significantly affect the answers.

The answers to the question, "How much good do you think toothbrushing does in preventing or cutting down on gum disease?" were as follows:

Reply	*Percent*
Much good	55
Some good	30
Little good	6
None	4
Don't know	5

In general, age, sex, race, and community size had little effect upon the opinion that toothbrushing does much good in preventing gum disease. Women were slightly more likely to think so than were men. The person's race or the size of a locality where he lived did not seem to influence the answers. Persons earning more than $10,000 were a little more likely than others to believe toothbrushing did much good. The least educated were the least likely to believe that toothbrushing did much good, but the amount of education did not always seem to affect the answers consistently. For example, some well-educated respondents did not consider that toothbrushing did much good. The oldest and youngest persons in the survey were the least likely to believe that toothbrushing did much good.

Summary and Interpretation

These data from a recent national survey along with other data help interpret current trends in dental care. Although half of the adult population has not visited the dentist within a year, the proportion has been increasing. Data from the National Health Survey show that the proportion of persons visiting the dentist within a year has increased. In a 7-year period, between 1957 and 1964, there was an overall increase in dental visits of about 5 percent among adults (*3*). Although comparisons are difficult because dependable earlier data are scarce, the American Dental Association estimated that 40 percent of the total population visited a dentist in 1949 (*4*). The estimate for 1929 by the Committee on the Study of Dental Practice of the American Dental Association was 20 percent (*5*).

It is estimated that more than half the adult American population has been a year or longer without professional dental care. In our survey, 26 percent said it has been at least 3 years since they had visited a dentist; 1 percent had never been to the dentist. Equally pessimistic is the discovery that only one in three adults now goes to the dentist for checkups or prophylaxis. The other two see the dentist because of symptoms or because of an identified need.

The data on beliefs in the efficacy of dental visits and of toothbrushing show almost universal acceptance. Variation is between the "much effect" and "some effect" categories rather than the "little good," "none," and "don't know" categories. The majority of adults give the most positive response. These attitudes seem to have relatively little effect on actual behavior (going to the dentist within the year and going for preventive treatment).

Most hopeful in predicting the future dental health of Americans is the influence of income and education on preventive behavior. The majority of the well-to-do, educated people in our society have recently gone to the dentist and have gone for the right reasons. Young (*6*) says, "With the continuing improvement in both education and income levels during the past quarter century, the proportion of the population visiting the dentist each year has advanced strikingly." As our society increases in affluence, and proportionately more people enjoy a higher income and education, more and more people can be expected to believe in preventing dental damage and to act accordingly.

Several changes in dental education and in dental practice reflect this rising demand, not only for dental care but also for a different kind of dental care. At a local dental society meeting a few years ago, the dean of a dental school enumerated these trends as they appear from inside the profession (*7*).

> Even as today we get fewer and fewer people, even in our school clinics, who want or who will permit full mouth extractions with the resultant full denture restorations, tomorrow patients will expect us to preserve their state of dental health from the cradle to the grave. It may seem a fantasy but compared to a very few years ago, the number of people who say "take 'em all out, Doc, and give me a set of good choppers," is very few. Instead, it's "can't you save them, doctor?" with the pendulum swinging back to the extreme of extended endodontic treatment, periodontic treatment, preventive orthodontics and anything which might preserve the natural dentition as long as possible. This has occurred despite the rapid advancements in full denture prosthesis. Such is the dentistry of today and tomorrow—prevention and treatment.

REFERENCES

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(*5*) Leven, M.: Practice of dentistry and the incomes of dentists in 20 States, 1929. University of Chicago Press, Chicago, 1932, p. 209.

(*6*) Young, W. O.: Dental health. The survey of dentistry. American Council on Education, Washington, D.C., 1961, p. 31.

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Education Notes

Graduate Summer Session in Epidemiology. The University of Minnesota will offer a graduate summer session in epidemiology at the Nolte Center for Continuing Education, Minneapolis, from June 16 to July 6, 1968. Sponsored by the epidemiology section of the American Public Health Association and the Association of Teachers of Preventive Medicine, the program will be supported by the Bureau of Health Manpower, Public Health Service.

These sessions are designed primarily for teachers in medical schools, but postdoctoral fellows, graduate students, and residents in medical specialties, particularly preventive medicine, may qualify. Teachers, postdoctoral fellows, and graduate students in schools of public health, dentistry, and veterinary medicine also are eligible as are qualified personnel of official health agencies.

The 1968 session will follow the curriculum established in 1965 with modifications in 1967. In addition to fundamentals of epidemiology and of biostatistics, epidemiology of cancer, of cardiovascular diseases, and of infectious diseases, new courses in genetics and epidemiology, health survey methods, selected statistical topics in epidemiology, and population dynamics and demography also will be offered.

Tuition is $120. Special rates for lodging and meals at a university residence hall have been arranged. A limited number of stipends for tuition and $252 for living costs are available to U.S. citizens or persons who have filed declaration of intent. No travel allowance will be available.

Further information and application forms may be obtained from Dr. Leonard M. Schuman, Director, Graduate Summer Session in Epidemiology, University of Minnesota School of Public Health, 1158 Mayo Building, Minneapolis 55455.

Institute on Comprehensive Health Planning.—The University of Michigan School of Public Health will hold an institute on comprehensive health planning from June 17 to June 22, 1968.

The program is intended to bring together a limited number of personnel from State and local agencies concerned in comprehensive health planning. Objectives of the program are to (*a*) examine methods of collection, analysis, and interpretation of need, use, and financial data necessary for planning; (*b*) analyze the rapidly changing nature of the organization and financing of personal and environmental health services; (*c*) explore methods of involving consumer leaders, providers of services, and sources of funding in the process of planned change; and (*d*) consider relationships of planning agencies at Federal, State, and local levels.

This institute is being funded by a training grant from the Office of Comprehensive Health Planning, Public Health Service. Traineeship awards of $16 per day are available to help defray living expenses. Travel expenses must be borne by all participants.

For additional information write to the Director of Continuing Education, School of Public Health, University of Michigan, Ann Arbor 48104.