SOCIAL AND PSYCHOLOGICAL FACTORS IN DENTAL HEALTH IN ISRAEL

JUDITH T. SHUVAL

The Israel study of social and psychological factors in dental health includes two complementary parts: a survey of the population on attitudes and behavior patterns in this area and a study of members of the dental profession with respect to their expectations, orientations and characteristic patterns of professional behavior. Focusing at first separately on these two populations, the research is aimed finally to bring the two sets of findings together in one overall picture.

This paper presents some of the findings of the first part of the total research undertaking: the population survey. A sample of 2,013 urban adults, residents of greater Tel Aviv, Jerusalem and Haifa, were included in the study and were interviewed in their homes. The field work took place between January and July, 1966.

One of the major substantive goals of the research is to gather information on the Israeli population, though an attempt was also made to compare these findings with research carried out in other societies, particularly the United States. With this in mind a considerable number of items were included that parallel the study carried out by the National Opinion Research Center (NORC) in the fall of 1959.[1] This paper draws on that study for comparative purposes and when possible also compares the Israeli material to a number of other studies that have been reported in the literature.

Such a comparison is not feasible in all of the areas studied in the Israeli research. Extensive pretesting showed that the different culture context did not always permit completely similar questions or topics to be posed. Nevertheless, the Israeli findings and a variety of American

studies overlap sufficiently to permit a number of general conclusions to be drawn. Occasionally when the wording of questions was not identical or categories of response were different, it was necessary to interpolate or recalculate some of the American findings; such procedures have been indicated in the text.

An overall marginal comparison is presented first in an attempt to indicate general differences or similarities between the populations. The Israeli material is presented separately for the three cities; it will be seen that in most cases the differences among them are small. Subsquently, an analysis of some correlates of preventive dental behavior will be presented, again bringing in comparisons of these relations when they are available in the literature. It is important to bear in mind that similarity or differences in marginal findings of themselves reveal nothing about the structure of relations among the variables.

OVERALL MARGINAL COMPARISON

Behavior in the Field of Dental Health

Israelis are less likely than Americans to visit their dentist for a checkup; 43 per cent of the NORC sample in 1959 as compared to about 20 per cent of the Israelis reported this (see Table 1). Table 3 also indicates that more Israelis than Americans say that they have never been to the dentist at all. A study of a rural American population in the early 1950's found that 30 per cent had gone for a dental checkup, and in 1963 about half of a sample of Americans reported preventive visits to the dentist.[2]

Among those who report that they go to the dentist for preventive checkups, Americans attend somewhat more frequently than Israelis. The difference, however, is not large (see Table 2).

About the same proportion of Americans and Israelis report that they have a regular dentist (Table 3).

When Israelis and Americans are asked about toothbrushing, the same proportion report that they brush their teeth at least once a day—over 80 per cent. A closer look reveals, however, that Americans are more likely to report brushing their teeth more than once a day. The percentages who say that they brush their teeth "sometimes" or "never" are almost identical (Table 4). A study carried out by NORC in 1965 shows almost identical findings to those reported here.[3]

Americans visit their dentists at an earlier age than Israelis; 59 per cent of the Americans reported that they had been to see a dentist

TABLE I. NATURE OF DENTAL CARE

U. S. Do you go to a dentist only when you need dental work done, or do you go for a dental checkup even when you don't think anything is wrong?* (Chicago 20 a)**

	Percentages
Go only when need	55
Go for checkup	43
Have never gone to dentist	2
	(1423)

Israel. Do you visit the dentist when you do not have a toothache or other specific problem?* (Question 21)***

	Percentages		
	Haifa	*Jerusalem*	*Tel Aviv*
Problems, only when have toothache	40	40	29
Problems, toothache or other problems	30	34	42
Checkup once every 2–3 years	4	3	2
Checkup once a year	8	7	9
Checkup 2–3 times a year	11	8	10
Never have gone to a dentist	7	8	8
	(357)	(439)	(902)

* Only respondents with natural teeth.

** In this table and in all subsequent tables references to "Chicago" are to National Opinion Research Center, Marginal Results and Basic Cross-Tabulations: Public Attitudes and Practices in the Field of Dental Care, University of Chicago, June 1960, mimeographed.

*** Numbers in parentheses following the Israeli questions in this and all subsequent tables refer to the Israeli questionnaire. Copies are available upon request to the author.

TABLE 2. FREQUENCY OF PREVENTIVE DENTAL CARE

U.S. How often do you go for a checkup? (Chicago 20E)*

	Percentages
More than once a year	57
Once a year	31
Once every 1½ years	4
Once every 2 years	4
Less frequently	4
	(611)

Israel. How often do you go for a checkup? (Among those who reported in Question 21 that they go for a checkup.)

	Percentages		
	Haifa	*Jerusalem*	*Tel Aviv*
More than once a year	49	46	49
Once a year	35	38	41
Less than once a year	16	16	10
	(83)	(76)	(183)

* Only respondents with natural teeth.

TABLE 3. REGULAR DENTIST

U.S. Do you have a regular dentist? (Chicago 32)

	Percentages
Yes	62
No	37
Never been to dentist	1
	(1,860)

Israel. Do you have a regular dentist? (Question 51)

	Percentages		
	Haifa	*Jerusalem*	*Tel Aviv*
Have never been to a dentist	13	12	13
Go to dentist, but do not have a regular dentist	16	20	21
Once had a regular dentist, but not now	10	12	7
Yes, go to regular private dentist	57	48	55
Go regularly to the sick fund clinic	3	6	4
	(418)	(498)	(1,082)

TABLE 4. FREQUENCY OF TOOTH BRUSHING

U.S. About how often do you brush your teeth? (Chicago 18(a))*

	Percentages
More than once a day	59
Once a day	27
Once in awhile	10
Never	4
	(1,433)

Israel. Do you brush your teeth? (Question 30)*

	Percentages		
	Haifa	*Jerusalem*	*Tel Aviv*
No	3	5	5
Yes, sometimes, but not every day	8	11	10
Yes, once a day	50	43	48
Yes, twice or more a day	39	41	37
	(370)	(484)	(942)

* Only respondents with natural teeth.

before the age of 13, but less than 45 per cent of the Israelis stated this (Table 5).

Two questions in the Israeli study focused on the extent to which people watch their own diet or that of their children to avoid food that could affect their teeth. The data show no differences between Israeli and American adults in the extent of care focused on foods that are thought to be bad for teeth. However, Americans watch their children's diet more carefully than do Israelis in an effort to protect their teeth (see Table 6).

More Israelis than Americans are members of sick fund insurance schemes. More than 80 per cent of the Israelis report that they are members of a sick fund, whereas only 70 per cent of the Americans state this. Furthermore, many Americans among those reporting membership in insurance schemes carry only partial coverage benefits; Israeli membership almost always involves virtually complete coverage (Table 7).

Among those who carry health insurance, Israelis report more frequently than Americans that dental service is included in the scheme.[4] A surprising 12 to 15 per cent of the Israeli members do not know if dental service is included in their membership (Table 8). It is even more striking that a remarkable number of Israelis who are members of health insurance schemes that include dental service prefer to use private dentists. About 60 per cent state that they do this; an additional four to six per cent report that they use both private dentists and dental facilities of the insurance scheme. The fact apparently is that the fees charged by the dental service of the insurance schemes are not much lower than those charged by private dentists. It is also feasible that lack of experience with dental care in a clinic setting causes people to prefer private dental practice when a clinic is available to them. Less

TABLE 5. AGE AT FIRST VISIT TO DENTIST

U.S. About how old were you when you first went to the dentist? (Chicago 21)

	Percentages
2–5 years	10
6–13	49
14–18	17
19 or older	21
Never been to dentist	1
Don't know	2
	(1,821)

Israel. How old were you when you first visited a dentist? (Question 62)

	Percentages		
	Haifa	*Jerusalem*	*Tel Aviv*
2–5	6	8	4
6–9	18	20	17
10–13	14	17	19
14–17	15	12	15
18–25	20	19	24
25–40	13	10	12
40+	7	5	4
Didn't go to the dentist	7	6	5
	(418)	(493)	(1,078)

TABLE 6. AVOIDANCE OF FOODS FOR DENTAL HEALTH

U.S. Do you avoid or cut down on any foods or drinks you think are bad for your teeth? (Chicago 19)

	Percentages
Yes	25
No	74
Don't know	1
	(1,430)

Does anyone in the family try to get the (child, children) to watch what (he, she, they) eat(s) or drink(s), to protect (his, her, their) teeth? (Chicago 59)

	Percentages
Yes	69
No	31
	(896)

Israel. Are there specific foods that you avoid because they are bad for your teeth? (Question 39b)

	Percentages		
	Haifa	*Jerusalem*	*Tel Aviv*
Yes	26	37	27
No	74	63	73
	(364)	(460)	(942)

Are there specific foods that you do not give your children because they are bad for their teeth? (Question 40b)*

	Percentages		
	Haifa	*Jerusalem*	*Tel Aviv*
Yes	32	37	39
No	68	63	71
	(302)	(352)	(352)

* The four categories of Question 40b have been collapsed to make the Israeli data comparable to the American.

TABLE 7. DENTAL HEALTH INSURANCE

U.S. Do you (or your spouse) now have any medical, surgical or hospital insurance that would pay part or all of the cost of doctor or hospital bills? (Chicago 80(a))

	Percentages
Yes	70
No	30
	(1,858)

Israel. Are you a member of a sick fund? If so, which one? (Question 37)

	Percentages		
	Haifa	*Jerusalem*	*Tel Aviv*
Not a member of a sick fund	6	16	12
Member of the General Sick Fund, Kupat Holim Klalit	81	67	62
Member of another sick fund	13	16	26
	(421)	(505)	(1,083)

TABLE 8. INSURANCE FOR DENTAL SERVICES

U.S. Are costs for any dental treatments covered by insurance? (Chicago 80E)

	Percentages
Yes	13
No	82
Don't know	5
	(1,297)

Israel. Does your sick fund include provisions for dental treatment? (Question 38)*

	Percentages		
	Haifa	*Jerusalem*	*Tel Aviv*
Yes	62	68	59
No	25	17	29
Don't know	12	15	12
	(397)	(421)	(960)

* Members of insurance schemes only. Categories of Question 38 combined for comparison with U.S. findings.

TABLE 9. USE OF DENTAL SERVICES BY INSURED POPULATION IN ISRAEL

Israel. Do you use the dental facilities provided by the sick fund?* (Question 39)

	Percentages		
	Haifa	*Jerusalem*	*Tel Aviv*
No treatment available	16	16	19
Goes to private dentist	62	58	60
Uses both private dentist and insurance facilities	4	6	4
Uses only facilities of insurance scheme	4	9	6
Doesn't go to dentist	14	11	11
	(399)	(419)	(957)

* Members of sick funds only.

TABLE 10. SUBJECTIVE EVALUATION OF TEETH

U.S. How satisfied are you with the present condition of your teeth and gums? (Chicago 1B)

	Percentages
Very well satisfied	41
Fairly well satisfied	31
Not too well satisfied	18
Dissatisfied	10
	(1,831)

Israel. Would you say that your teeth are generally good or bad? (Question 24)

	Percentages		
	Haifa	*Jerusalem*	*Tel Aviv*
Very good	19	21	22
Somewhat good	33	39	33
Not good	23	23	23
Bad	25	17	22
	(350)	(434)	(887)

than ten per cent state that they use only the dental facilities of the insurance scheme (Table 9).

Feelings and Beliefs about Teeth

Israelis believe that they have poorer teeth than Americans and thus consider themselves more susceptible to dental disease. This may be seen in Table 10, which shows that about 20 per cent of the Israelis as contrasted to 41 per cent of the Americans state that their teeth are "very good."[5] This is particularly interesting in the light of Rosenzweig's clinical findings that the caries rate in Israel is comparatively low.[6]

When Israelis are asked to focus on a more specific description of their mouths, they tend to confirm Rosenzweig's results by reporting fewer fillings than Americans (Table 11). The data also show that more Israelis than Americans state that they have lost none of their teeth and fewer state that they have lost all. Table 12 shows that similar proportions of Israelis and Americans have lost some of their teeth. Among people who have lost all of their teeth, approximately 90 per cent of both the Israeli and American respondents report that their teeth have been replaced. Among persons who have lost some of their teeth, more of the Israelis state that they have been replaced (Table 13).

Israelis and Americans were also asked whether they believe dental problems can lead to serious difficulties. The differences between the two populations are small, but they suggest that Israelis perceive such problems to be somewhat more serious (Table 14).

The seeming paradox of this contrast between Israelis' comparatively negative subjective evaluation of their teeth and their relatively favorable condition is certainly of some interest. Israelis apparently feel more susceptible to dental disease and are also more aware than Americans of its possible serious consequences. In the light of this finding it is of some interest that a cross-cultural study by Cantril shows that concern with personal health is about the same among Americans and Israelis, both in terms of desired goals in life and in terms of fears and worries.[7] On the other hand, evidence indicates that Israelis are extraordinarily high physician-utilizers, a fact that could reflect a high level of sensitivity to health-related problems.[8]

Esthetic Aspects of Dental Health

Israelis and Americans were asked about the importance of the outward appearance of a person's teeth in making friends, in getting

TABLE 11. NUMBER OF FILLINGS

U.S. Considering dental work like fillings (or inlays), how many of your teeth have had such work? (Chicago 14)*

	Percentages
None	17
Few (1–3)	22
Several (4–9)	32
About half (10–20)	16
Most (21–28)	11
Never been to dentist	2
	(1,430)

Israel. In how many of your teeth are there fillings? (Question 23)**

	Percentages		
	Haifa	*Jerusalem*	*Tel Aviv*
No fillings	29	28	23
1–3	32	30	29
4–9	30	30	38
10–20	7	8	6
21–25	2	4	4
	(352)	(433)	(900)

* Asked only if respondent has not lost all his teeth.
** Only those with natural teeth.

TABLE 12. TEETH LOST

U.S. How many permanent teeth have you had pulled or lost in some other way (not counting wisdom teeth)? (Chicago 13a)

	Percentages
None	11
Few (1–3)	24
Several (4–9)	22
Half/many (10–20)	12
Most (21–29)	8
All	23
	(1,862)

Israel. How many permanent teeth have you had pulled or lost in some other way? (Question 18)

	Percentages		
	Haifa	*Jerusalem*	*Tel Aviv*
None	15	19	17
Few (1–3)	18	23	22
Several (4–9)	25	26	25
About half (10–20)	11	12	11
Most (21–27)	16	8	9
All	15	13	16
	(421)	(505)	(1,084)

TABLE 13. REPLACEMENT OF LOST TEETH

U.S. Of those reporting loss of some but not all teeth in Question 13a: How many have been replaced? (Chicago 13b, 13c)

	Percentages
None	58
Some	27
All	15
	(1,225)

Of those reporting loss of all teeth in Question 13a: How many have been replaced? (Chicago 13e)

	Percentages
None	6
All	94
	(428)

Israel. Of those reporting loss of some teeth (categories 1, 2, 3 in Question 19): How many have been replaced?

	Percentages		
	Haifa	*Jerusalem*	*Tel Aviv*
None	30	50	36
Some	32	28	30
All	38	22	34
	(274)	(321)	(671)

Of those reporting loss of all teeth (categories 4, 5, 6 in Question 19): How many have been replaced?

	Percentages		
	Haifa	*Jerusalem*	*Tel Aviv*
None	10	8	13
All	90	92	87
	(81)	(83)	(225)

TABLE 14. PERCEPTION OF SERIOUSNESS OF DENTAL PROBLEMS

U.S. S. S. Kegeles*

	Percentages
Felt dental problems serious	81
Did not feel dental problems serious	19
	(90)

Israel. In your opinion, can the condition of one's teeth cause serious trouble and worry? (Question 22)**

	Percentages		
	Haifa	*Jerusalem*	*Tel Aviv*
Yes	86	89	93
No	14	11	7
	(421)	(504)	(1,082)

* S. S. Kegeles, Some Motives for Seeking Preventive Dental Care, *Journal of the American Dental Association*, 67, 112/92, July 1963.

** The four categories of Question 22 were collapsed to make the Israeli data comparable to the American.

TABLE 15. IMPORTANCE OF DENTAL ESTHETICS

U.S. How important do you think the appearance of a person's teeth is in making friends? (Chicago 90a)

	Percentages
Very important	53
Somewhat important	32
Hardly important	7
Doesn't matter	7
Don't know	1
	(1,850)

In getting a job? (Chicago 90c)

Very important	57
Somewhat important	34
Hardly important	5
Doesn't matter	3
Don't know	1
	(1,851)

In dating among young people? (Chicago 90d)

Very important	72
Somewhat important	23
Hardly important	2
Doesn't matter	1
Don't know	2
	(1,851)

Israel. Do you think the appearance of one's teeth is important in making new friends? (Question 67)

	Percentages		
	Haifa	*Jerusalem*	*Tel Aviv*
Very important	58	46	61
Fairly important	23	28	23
Not so important	8	8	5
Not important at all	7	14	9
Don't know	3	4	3
	(421)	(504)	(1,084)

when looking for a new job? (Question 68)

Very important	29	24	36
Fairly important	28	24	30
Not so important	14	15	11
Not important at all	23	31	18
Don't know	6	6	4
	(421)	(504)	(1,083)

Do you think the appearance of a girl's teeth is important in dating young men? (Question 69)

Very important	77	65	74
Fairly important	16	22	19
Not so important	3	3	2
Not important at all	2	7	4
Don't know	2	4	1
	(421)	(504)	(1,084)

a job and in dating among young people. The two groups show a similar distribution in the importance attributed to the appearance of a person's teeth in making friends and in dating among young people, but Americans consider the appearance of one's teeth a great deal more important than do the Israelis in getting a job. It is of some interest that pretesting in Israel showed that the question on dating was not workable when translated literally from the American study. Israelis reported that teeth were of no importance for *boys* in dating; in fact the replies showed no distribution. The question finally included in the Israeli study therefore focused on the importance of the appearance of teeth for a *girl* in dating. With this wording the results obtained are not entirely comparable to the United States study (see Table 15)[9]

Image of the Dentist

The image of the dentist among Israelis appears to be quite similar to that prevalent in the United States. Israeli data are available on three dimensions of the dental image reported on by Kriesberg and Treiman.[10] Israelis and Americans are similar in their perception of the competence of dentists in filling teeth: about half feel that such fillings hold well, approximately a quarter state that they do not and the remainder do not know[11] (see Table 16).

About three-quarters of both Israelis and Americans believe that dentists care and worry about the pain they cause their patients. Less than 20 per cent of both groups feel that dentists do not care about the pain they inflict (see Table 17). Finally it is of some interest that when Israelis and Americans are asked what they do not like about their dentist, the overwhelming percentage, that is, about 75 per cent, is unable to mention any negative characteristic.[12]

Barriers to Visiting the Dentist

Israelis seem on the whole to be confronted with more barriers to visiting a dentist than are Americans. These are both psychologic and situational.

Israelis appear to fear the pain caused by the dentist more than do Americans. Even though the categories in Table 18 are not precisely comparable, it is nevertheless clear from the "no fear" category that Israelis are more fearful of this than are Americans. This conclusion is strengthened by the fact that in the three independent American

TABLE 16. IMAGE OF DENTIST: COMPETENCE

U.S. People say that dentists make fillings that don't last as long as they should. Is this true of most dentists or not? (Chicago 72(5))

	Percentages
Yes	22
No	51
Don't know	27
	(1,843)

Israel. People often say that the fillings dentists make are not strong enough and do not last. Do you think that fillings are generally strong or not? (Question 56)

	Percentages		
	Haifa	*Jerusalem*	*Tel Aviv*
Yes, very strong	25	22	24
Yes, fairly strong	32	30	35
No, not very strong	16	15	20
Very poor	9	12	8
No opinion	19	21	13
	(421)	(503)	(1,083)

TABLE 17. IMAGE OF DENTIST: PAIN

U.S. People say that dentists aren't concerned enough about the pain they cause the patient. Do you think that is true of most dentists or not? (Chicago 72(2))

	Percentages
Yes	18
No	71
Don't know	11
	(1,843)

Israel. People often say that dentists are not concerned about the amount of pain they cause patients. Do you think dentists generally care about causing pain or not? (Question 54)

	Percentages		
	Haifa	*Jerusalem*	*Tel Aviv*
Yes, very concerned	38	42	40
Yes, somewhat concerned	36	32	37
No, not too concerned	7	7	12
No, not concerned at all	7	7	4
No opinion	12	12	9
	(421)	(502)	(1,084)

studies with which the Israeli data can be compared the frequency of the "no fear" category in all of them hovers around 40 per cent. Among the Israelis this category includes only about a quarter of the population. It is feasible that Israeli dentists are less frequently equipped with the most modern dental equipment and therefore could

TABLE 18. FEAR OF PAIN

U.S. Amount of fear acknowledged about going to the dentist*

	Percentages
Great fear of pain	28
Some fear of pain	26
No fear	46
	(1,225)

	*Kegeles*** *Percentages*	*Kegeles*† *Percentages*
Had fear of pain	61	60
Had no fear of pain	39	40
	(349)	(277)

Israel. When you think of going to the dentist do you expect a lot of pain during the treatment? (Question 25)††

	Percentages		
	Haifa	*Jerusalem*	*Tel Aviv*
Yes, a great deal of pain	16	26	18
Yes, a fair amount of pain	29	23	23
No, there will be little pain	29	26	29
No, there will be no pain at all	26	25	30
	(365)	(447)	(927)

* Kriesberg, L. and Treiman, B. R., Socio-Economic Status and the Utilization of Dentists' Services, *Journal of the American College of Dentists,* September, 1960, p. 161.

** Kegeles, S. S., Some Motives for Seeking Preventive Dental Care, 115/95.

† Kegeles, Why People Seek Dental Care, 5.

†† Table is based only on those who visit a dentist.

be causing their patients more pain than is caused on the average by American dentists. On the other hand, psychologic variables could be playing a differential role in this configuration.

Israelis state more frequently than Americans that they did not go to the dentist because they did not know a really good one. It is difficult to judge without further analysis whether such a statement reflects hyperselectivity on the part of Israelis or whether it has some basis in objective fact (see Table 19).

Israelis claim more frequently than Americans that they put off a visit to the dentist because they were too busy to go. Americans, on the other hand, state more frequently that they put off visiting the dentist because they did not want to spend the money. The same proportions of Israelis and Americans put off visiting the dentist because they thought the trouble was not serious and would go away by itself.

Ignorance can also be a barrier to visiting the dentist. Respondents were asked whether they think it is important to fill cavities in children's baby teeth inasmuch as they are replaced by permanent teeth. Table

TABLE 19. BARRIERS TO VISITING THE DENTIST

U.S. Thinking over your own experience, which of these reasons kept you from seeing a dentist when maybe you should have:

I didn't know any really good dentist. (Chicago 53a)

	Percentages
Yes	12
No	87
Don't know	1
	(1,858)

I was too busy to see the dentist; I didn't have the time. (Chicago 53d)

Yes	30
No	69
Don't know	1
	(1,859)

I didn't want to spend the money on a dentist unless I had to. (Chicago 53b)

Yes	37
No	63
Don't know	0
	(1,857)

I didn't think the trouble was serious. I thought it would go away. (Chicago 53f)

Yes	30
No	69
Don't know	1
	(1,857)

Israel. Did you ever not go to a dentist because you didn't know a good one? (Question 22b)

	Percentages		
	Haifa	*Jerusalem*	*Tel Aviv*
Yes	20	22	19
No	72	70	69
Do not visit dentist	7	9	12
	(421)	(505)	(1,084)

Did you ever not go to a dentist because you were too busy and did not have the time to go? (Question 24b)

	Percentages		
	Haifa	*Jerusalem*	*Tel Aviv*
Yes	45	47	46
No	48	46	43
Do not visit dentist	8	8	11
	(421)	(505)	(1,084)

Did you ever not go to a dentist because you didn't want to spend the money unless it was absolutely necessary? (Question 23b)

	Percentages		
	Haifa	*Jerusalem*	*Tel Aviv*
Yes	13	21	14
No	80	71	75
Do not visit dentist	8	8	11
	(421)	(505)	(1,084)

TABLE 19. (CONTINUED)

Did you ever not go to a dentist because you thought that the trouble was not serious enough and it would disappear by itself? (Question 25b)

	Percentages		
	Haifa	*Jerusalem*	*Tel Aviv*
Yes	31	42	30
No	61	50	59
Don't go to dentist	8	8	11
	(421)	(505)	(1,084)

20 shows a fairly similar distribution among Israeli and American responses to this question, except for the fact that more Israelis than Americans say they "do not know" whether children's baby teeth should be filled. The larger "do not know" category suggests more ignorance of this among Israelis although the evidence is not strong.

CORRELATES OF PREVENTIVE DENTAL BEHAVIOR

A variety of ascriptive and attitudinal variables are examined in relation to the correlates of preventive dental behavior in an attempt to determine what types of people and which predispositions tend to condition it. In addition to presenting the findings of the Israeli study comparative findings will be introduced from other research when they are available in the literature.

It will be recalled that about 20 per cent of the total population surveyed reported that they visit their dentist for preventive treatment. This comparatively small number made it necessary to combine respondents who reported any sort of preventive visit—regardless of its frequency. The analysis presented here, therefore, defines preventive dental behavior as visiting the dentist for a checkup and focuses on this subgroup of the population. It utilizes Question 21 as its central dependent variable[13] (see Table 1).

Background variables

Women generally report more preventive dental behavior than do men. This finding confirms several American studies reporting similar differences between the sexes.[14] However, a closer look at the Israeli data indicates that the differences between men and women are most pronounced among upper-class, Israel-born elderly persons and disappear among the lower-class, Asian-African, immigrant segments of the population; this pattern may be seen in Table 21.

Several studies carried out in the United States have pointed to the importance of socioeconomic class in conditioning preventive dental behavior. Whatever the definitions of class used, these studies have consistently shown that upper-class respondents report more preventive behavior than do lower-class respondents.[15] The Israeli data show a

TABLE 20. KNOWLEDGE ON FILLING BABY TEETH

U.S. There is no point in filling cavities in baby teeth since permanent teeth will replace the baby teeth. (Chicago 22a)

	Percentages
Agree	33
Disagree	61
Don't know	6
	(1,857)

Israel. In your opinion, is it worth filling children's baby teeth, even though they eventually fall out? (Question 61)

	Percentages		
	Haifa	*Jerusalem*	*Tel Aviv*
Yes, always worthwhile	31	26	21
Yes, usually worthwhile	15	12	15
Yes, sometimes worthwhile	5	10	12
No, not worthwhile	35	39	33
Don't know	14	13	19
	(421)	(505)	(1,080)

TABLE 21. PREVENTIVE DENTAL BEHAVIOR* BY SEX, CLASS, ETHNIC ORIGIN AND LENGTH OF TIME IN ISRAEL

Percentages Characterized by Preventive Dental Behavior

	*Class***	
	Higher	*Lower*
Men	23 (100)	9 (29)
Women	34 (156)	10 (37)

	Country of Origin		
	Asia-Africa	*Europe*	*Israel-Palestine*
Men	9 (250)***	23 (494)	13 (200)
Women	9 (283)	29 (544)	25 (241)

	Date of Arrival in Israel	
	Before 1948	*After 1948*
Men	17 (427)	17 (508)
Women	28 (584)	16 (477)

* In this and all subsequent tables "preventive dental behavior" is defined by respondents' reports that they go for dental checkups. See Question 21, combined categories 2, 3 and 4.

** In this and in all subsequent tables class is defined by a typology based on respondent's education and the occupation of the head of his household. See Questions 30b and 31b. The division into "higher" and "lower" class groups is relative and carries no absolute substantive meanings.

*** In this and in all subsequent tables the numbers in parentheses represent the total number of cases on which the percentages are based.

TABLE 22. PREVENTIVE DENTAL BEHAVIOR BY CLASS, AGE, LENGHT OF TIME IN ISRAEL AND ETHNICITY

Percentage Characterized by Preventive Dental Behavior

		Age	
Class*		*Under 45*	*Over 45*
Higher		27 (592)	32 (365)
Lower		11 (440)	7 (393)
		Date of Arrival in Israel	
Class		*Before 1948*	*After 1948*
Higher		28 (621)	29 (336)
Lower		11 (346)	8 (476)
	Country of Origin		
Class	*Asia-Africa*	*Europe*	*Israel-Palestine*
Higher	16 (138)	34 (553)	24 (268)
Lower	7 (344)	14 (362)	6 (128)

* See definition in Table 21.

remarkable similarity in their patterning. Indeed it will be seen that the class differences among Israeli respondents are strong and clear and persist in almost every combination of additional variables.

Socioeconomic class was defined for the present purposes by a typology based on the respondent's education and the occupation of the head of his household (Questions 30b, 31b). Table 22 shows the role played by class in preventive behavior. Upper-class respondents consistently report more preventive dental behavior than do lower-class respondents.

Social research in Israel has frequently pointed to the importance of the ethnic dimension in helping to explain social behavior and attitudes. This variable appears to play a role in preventive dental behavior as well. Dividing the population roughly into those born in European countries, in Asian or African countries and in Israel or Palestine, the most frequent preventive behavior is found among the Europeans and the least among the Asian-Africans; the Israel-born fall between.[16] Although the Asian-African group tends to concentrate proportionately heavily at the lower end of the socioeconomic continuum, Table 22 shows that the ethnic differences described hold consistently within class groups.

Freidson, Kegeles and Tash report a correlation between age and preventive dental behavior with the older age groups indicating less such behavior.[17] However, the Israeli material shows no evidence for differences among age groups.

Contact with the Dental Profession

Respondents who have a regular dentist report more preventive dental behavior than do those who do not have a regular dentist. Also, a clear correlation is seen between class and having a regular dentist: 79 per cent of the upper-class respondents report that they have a regular dentist, whereas only 49 per cent of the lower-class group state this. A similar finding is reported for the United States population.[18] It is nevertheless worth noting in Table 23 that the differences described by socioeconomic class persist among the subgroups that are not under the care of a regular dentist.

It will be recalled that membership in health insurance schemes is more widespread in Israel than in the United States. These insurance schemes are best known for their regular clinic service and less for their dental services, which, in contrast to the former, require payment from members. It is of some interest that reported use of the dental services provided by the health insurance schemes is not correlated with preventive dental behavior. Nor is use of such dental facilities by members correlated with socioeconomic class; this may be seen in Table 23.

Dimensions of Feelings and Beliefs Concerning Dental Health

Several studies have attempted to make use of certain beliefs and attitudes in an effort to predict preventive dental behavior. These have included feelings of susceptibility, awareness of the potential seriousness of disease, salience of the problem and knowledge of the benefits that result from protection against a health threat.[19] The operational definitions used in these studies were not always appropriate to the Israeli context, but an attempt was made to approximate some of these ideas in terms meaningful to that population.[20]

Susceptibility was defined in terms of the individual's evaluation of his dental health on the assumption that people who report poorer teeth also feel more susceptible to dental disease. The logic of this position is similar to that of Tash, O'Shea and Cohen who define susceptibility in terms of respondents' reports of the amount of dental work needed now or within a year.[21]

With this in mind a typology was defined in terms of two questions: one required respondents to indicate how good they consider the present condition of their teeth; the other asked whether the respondent's teeth give him a lot of trouble (see Questions 24 and 26).

TABLE 23. PREVENTIVE DENTAL BEHAVIOR BY CONTACT WITH DENTAL PROFESSION AND CLASS

	Percentage Characterized by Preventive Dental Behavior		
		*Class**	
	Lowest	*Middle*	*Highest*
Do you have a regular dentist? (Question 51)			
No regular dentist	1 (132)	4 (50)	14 (21)
Goes to dentist but not regularly	5 (290)	11 (148)	22 (59)
Regular dentist	15 (406)	29 (369)	43 (306)
Percentage who have a regular dentist	49 (828)	65 (567)	79 (386)
Use of dental facilities of insurance schemes by members (Questions 37 and 40)			
Yes	12 (151)	29 (127)	36 (93)
No	9 (569)	21 (397)	40 (263)
Percentage who use dental facilities of insurance scheme	21 (724)	24 (524)	26 (356)

* In this and all subsequent tables the class continuum was trichotomized into "highest," "middle" and "lowest" subgroups.

TABLE 24. PREVENTIVE DENTAL BEHAVIOR BY DIMENSIONS OF FEELINGS CONCERNING DENTAL HEALTH AND CLASS

	Percentage Characterized by Preventive Dental Behavior		
		Class	
	Lowest	*Middle*	*Highest*
Self-evaluation of condition of teeth (Questions 24 and 26)			
Poor	9 (364)	20 (212)	39 (148)
Good	10 (330)	24 (306)	38 (214)
Percentage who evaluate condition of teeth as "Good"	48 (794)	59 (518)	59 (362)
Perceived level of salience of dental problems (Questions 33 and 34)			
High	11 (365)	25 (264)	42 (170)
Low	8 (449)	21 (300)	34 (209)
Percentage characterized by a high level of salience	45 (814)	47 (564)	45 (379)
Preference expressed for: (Question 70)			
Dental care	9 (729)	24 (504)	40 (310)
Refrigerator	12 (66)	9 (45)	31 (49)
Percentage expressing preference for dental care	92 (795)	92 (549)	86 (359)
Level of perceived seriousness of dental problems (Questions 22, 27 and 28)			
High	12 (473)	26 (309)	41 (225)
Medium	7 (251)	19 (174)	35 (111)
Low	5 (86)	19 (77)	26 (45)
Percentage with "high" perception of awareness of dental problems	58 (810)	55 (560)	59 (381)

Clearly such a typology is based on subjective feelings and could be quite different from a clinical evaluation.

Table 24 indicates a slight tendency for middle- and upper-class people to evaluate their teeth more favorably, but this subjective evaluation is not related to preventive dental behavior. By this definition the Israeli data, therefore, fail to confirm the findings reported by Kegeles, but are consistent with the findings reported by Tash, O'Shea and Cohen who show no relation between susceptibility and preventive dental behavior.[22]

Kegeles' definition of salience refers to the place occupied by a given concept in the individual's hierarchy of values.[23] The salience of dental health therefore refers to the relative importance attributed by the individual to this problem in comparison to other problems or needs that concern him. One rough measure of this is how much the individual talks to other people about his dental health. Such a measure assumes that people talk about problems that concern them.[24]

Two questions asked whether respondents talked to relatives or to friends about problems relevant to their teeth, and the answers were used to define a typology on extent of talking on this topic. Table 24 suggests that a relation may exist between extent of talking about dental problems and preventive dental behavior in the highest socioeconomic class group, but it does not appear in the other class groups. Furthermore, no evidence is found by this measure that the salience of dental health differs among class groups.

Another way of estimating the importance or salience of dental health is to ask respondents to choose between that and another desirable goal when limited means are available. In the Israeli context the acquisition of a refrigerator by a family that did not possess one but had saved for a long time to buy one was posed as an alternative to needed dental care (see Question 70). Table 24 shows that this second rough measure of salience reveals the same relation with preventive dental care as noted in the previous measure. Again preventive behavior is related to this estimate of salience in the higher class groups but not in the lowest. Furthermore, no difference is seen among the class groups in the frequency of salience by this measure either.

Following Kegeles' lead on the importance of a feeling of the potential seriousness of dental problems, a set of three questions was posed in this area: Can one's teeth cause real trouble (Question 22)? Can trouble with teeth affect one's general health (Question 27)? Can

poor teeth affect a person's work or other aspects of everyday life (Question 28)? These items defined a quasi-scale that was trichotomized for purposes of the present analysis. Table 24 shows that people who are aware of the potential seriousness of dental problems are more likely to make preventive visits. But there appear to be no differences among the three class groups in awareness of the potential seriousness of dental problems.

Kegeles' evidence on this question is mixed. In one study he reports a significant relation between a belief in the potential seriousness of dental problems and visits to dentists for preventive care,[25] but in his repeat study the relation was not significant.[26] Tash, using a different definition of seriousness, shows a positive relation with preventive dental behavior.[27]

Cognitive Variables

Respondents were asked whether they believe it worthwhile to fill cavities in children's baby teeth considering that they fall out anyway (see Question 61). A clear relation is seen between such knowledge and preventive dental behavior, especially in the upper- and middle-class groups. It is certainly of some interest that this variable hardly plays a role in the lower-class group. Table 25 further indicates that correct knowledge is more prevalent in upper-class groups. The latter finding is reported in the NORC study.[28] Tash also shows a positive relation between knowledge and preventive behavior.[29]

Another cognitive variable concerns knowledge of what correct behavior ought to be in the area of preventive dental health. Two questions were posed on this topic, one referring to adult behavior and the other to the importance of taking children to the dentist for checkups (see Questions 8b and 9b). Table 25 makes use of a typology based on these two items.

Freidson has commented on the difference between belief and practice in the field of dental health and notes that the gap between knowledge and good practice is especially marked in the lower-class group.[30] The Israeli data show a parallel picture. Table 25 shows that knowledge of correct practice increases in the higher socioeconomic class groups. Within each class group greater knowledge apparently leads to more preventive behavior. Nevertheless, the gap between knowledge and reported practice is marked. Even in the subgroup with the most in its favor, that is, knowledge of correct behavior as well as upper-class status, only a little more than a third report that they

TABLE 25. PREVENTIVE DENTAL BEHAVIOR BY COGNITIVE VARIABLES AND CLASS

	Percentage Characterized by Preventive Dental Behavior		
	Class		
	Lowest	*Middle*	*Highest*
Should cavities in baby teeth be filled? (Question 61)			
Always	10 (157)	31 (147)	45 (150)
Sometimes	15 (183)	24 (154)	41 (90)
Never	7 (493)	16 (270)	28 (146)
Percentage answering "always"	19 (833)	26 (571)	39 (386)
Level of knowledge concerning correct dental care (Questions 8b and 9b)			
High	14 (235)	21 (196)	37 (162)
Medium	4 (248)	17 (154)	25 (67)
Low	3 (168)	4 (27)	11 (9)
Percentage "high"	36 (651)	52 (377)	68 (238)

TABLE 26. PREVENTIVE DENTAL BEHAVIOR BY CHILDHOOD EXPERIENCES AND CLASS

	Percentage Characterized by Preventive Dental Behavior		
	Class		
	Lowest	*Middle*	*Highest*
Preventive dental behavior during childhood (Questions 64, 65 and 66)			
Good	5 (560)	18 (236)	29 (115)
Poor	18 (266)	25 (332)	41 (268)
Percentage "good"	32 (826)	58 (568)	70 (383)
Quality of recalled feeling during childhood visit to dentist (Question 65)			
Positive	16 (118)	28 (131)	41 (89)
Negative	15 (211)	24 (207)	40 (157)
Percentage "positive"	36 (329)	39 (338)	36 (246)

actually carry out their belief on a behavioral level. In the lower-class subgroup, which is cognitively aware of the correct behavior, only 14 per cent report that they carry it out. The structure of the relation observed is therefore similar to that described by Freidson except that preventive dental behavior is less frequent in Israel in all subgroups of the population.

Childhood Experiences

Early patterns of socialization may play a role in conditioning adult behavior for achieving dental health. Such a role might occur because

of positively predisposing values that encourage preventive behavior or because of patterns of learning that promote certain aspects of preventive behavior, such as toothbrushing, dental checkups or imitation of the practices of adults.

Childhood experience was analyzed in terms of three questions that asked at what age the respondent first went to the dentist, whether he brushed his teeth as a child and whether he was taken for regular checkups (Questions 62, 64, 66). These items defined a Guttman scale so that it was possible to rank-order the population in terms of the extent of their childhood experience with preventive dental practices. Table 26 shows the relation of this variable to present reported preventive dental behavior.

Upper-class respondents experienced considerably more preventive dental behavior as children than did lower-class respondents. The difference between 70 per cent of the former and 32 per cent of the latter who are characterized by "good" childhood experience with preventive dental experience is associated with greater preventive behavior in adult life. In fact the lower-class subgroup that is characterized by "good" childhood practices shows the highest frequency of preventive dental behavior in the lower segment of the population.

Kriesberg and Treiman report similar findings in the United States. They found that upper-class people were more likely to have gone to the dentist when they were young and that persons in all classes who went at an earlier age were more likely to go to the dentist preventively as adults.[31]

It might be hypothesized that early childhood experience would play a positive conditioning role on later adult behavior if the former was generally pleasant and rewarding. On the other hand, if it was painful and fear-arousing, one might expect it to be associated with less preventive behavior in adult life. The difficulty in investigating this hypothesis lies in the necessary retrospective quality of the questions that need to be posed. It is reasonable to query the accuracy and possible distortions of memory among people with different current experiences and practices with respect to dental health.

It is therefore of some interest to find no relation between respondents' reported feelings during their earliest visits to the dentist and their present preventive behavior (see Question 65). Table 26 also indicates no differences between class groups in the quality of remembered childhood experience. Blum reports similar findings.[32]

Image of the Dental Profession

To what extent does the public's image of the dentist condition the likelihood of preventive behavior? It is feasible that a critical attitude or an unfavorable image make people wary of the dentist or less likely to place themselves in his hands. In an attempt to explore this problem a number of dimensions were studied of the image of the dental profession in Israel.

Two complaints frequently heard about dentists involve their lack of concern at the pain they cause and the poor quality of the fillings they make, which fall out within a short time. Two questions focused on these issues and a roughly scaled typology was defined.

Table 27 indicates that upper-class respondents are characterized by a more positive general opinion of dentists. In all class groups people with a positive image of the dental profession are more likely to engage in preventive behavior. Kegeles as well as Kriesberg and Treiman found a suggestion of such a relationship but in both cases it was extremely weak.[33]

Another way of looking at this problem is to ask people in a more general way what sorts of things they like or dislike about their dentist. Of necessity this approach limits the population that replies to those who have had some experience with dentists and eliminates those who have never gone (seven to eight per cent in Israel).[34] Kriesberg and Treiman report that 72 per cent said that they disliked nothing about their dentist.[35] Such a question also puts people under some indirect pressure to criticize their own dentist, which some respondents are reluctant to do.

As seen in Table 27, no relation could be demonstrated between class and negative criticism or between negative criticism and preventive dental behavior. The percentage characterized by "no criticism" is similar to that reported by Kriesberg and Treiman.

Two additional questions referred to the public's perception of the dental profession in terms of its scientific qualities. One dimension of this concerned the reliability of dental diagnosis; the other focused on the extent of confidence in the future scientific possibilities of dentistry (see Questions 16b and 17b). Table 27 shows no relation between these items and preventive dental behavior. Though the data suggest that upper-class groups have somewhat more confidence in the reliability of dental diagnosis, no class differences could be seen with respect to confidence in the future scientific possibilities of dentistry.

TABLE 27. PREVENTIVE DENTAL BEHAVIOR BY PERCEIVED IMAGE OF DENTAL PROFESSION AND CLASS

	Percentage Characterized by Preventive Dental Behavior		
	Class		
	Lowest	*Middle*	*Highest*
General opinions of dentists (Questions 54 and 55)			
Positive	13 (326)	29 (290)	40 (225)
Negative	8 (308)	17 (187)	32 (107)
Percentage "positive"	51 (634)	61 (477)	68 (332)
Criticism: Is there anything you don't like about your dentist? (Question 53)			
No	11 (499)	27 (366)	39 (258)
Yes	13 (159)	17 (135)	40 (100)
Percentage "no"	76 (658)	73 (501)	72 (358)
Perceived reliability of dental diagnosis (Question 16b)			
Reliable	5 (104)	25 (128)	41 (97)
Unreliable	11 (583)	22 (397)	37 (251)
Percentage perceiving dentists as "reliable"	15 (687)	24 (525)	28 (348)
Belief in scientific future of dentistry: Do you believe that cavitities will be preventable in the future? (Question 17b)			
Yes	8 (318)	22 (212)	35 (151)
No	13 (365)	24 (298)	43 (192)
Percentage "yes"	47 (683)	42 (510)	44 (343)

TABLE 28. PREVENTIVE DENTAL BEHAVIOR BY BARRIERS AND CLASS

	Percentage Characterized by Preventive Dental Behavior		
	Class		
	Lowest	*Middle*	*Highest*
Economic: Did you ever refrain from going to a dentist because you didn't want to spend money unless it was absolutely necessary? (Question 23b)			
Yes	6 (134)	14 (65)	26 (34)
No	12 (489)	25 (427)	41 (321)
Percentage "yes"	22 (623)	13 (492)	9 (355)
Pain: Do you expect much pain when you visit the dentist? (Question 25)			
Yes	8 (341)	13 (210)	28 (139)
No	13 (351)	29 (311)	45 (227)
Percentage "yes"	49 (692)	40 (521)	38 (366)
Pain: Have you ever postponed a visit to the dentist because you feared the pain? (Question 29)			
Yes	7 (215)	12 (117)	30 (67)
No	12 (545)	27 (421)	41 (308)
Percentage "yes"	28 (760)	22 (538)	18 (375)

Barriers: Economic and Fear of Pain

One barrier to visiting the dentist could be economic. Tash found that people who perceive dental care as costly are less likely to seek preventive care.[36] The Israeli data confirm this finding. Table 28 also shows that economic barriers are more prevalent in lower-class groups.

Kriesberg and Treiman considered the role of fear as a barrier to preventive dental behavior. They found that people who report "great fear" are less likely to go for checkups than are people who report "no fear." However, they found no differences between class groups in the amount of fear acknowledged.[37] Kegeles, in both of his studies, found a relation between fear of pain and preventive dental behavior.[38] He does not report on the relation of fear of pain to socioeconomic class. Tash found a weak but significant relation between fear of pain and preventive behavior.[39]

Two questions in the Israeli study focused on this problem. One concerns the respondent's expectations of pain when he thinks about visiting the dentist (Question 25). The other asked whether the respondent had ever put off a visit to the dentist because he feared pain (Question 29). Table 28 shows the same picture for both items: fear of pain reduces the likelihood of preventive dental behavior. The relation is stronger in the upper- and middle-class groups. Furthermore, in contrast to Kriesberg and Treiman, the Israeli data show that fear of pain is associated with class: the higher the respondent's class standing the less he expresses a fear of pain.

It is of interest to recall that no differences exist between the class groups in the quality of reported recollections of childhood experiences with the dentist: about a third of each class group stated that such early experiences were "favorable" (see Table 26). Why, then, should upper-class groups express less fear of pain? If early childhood experiences are not playing a role, it is possible that lower-class groups have had more negative recent experiences with dentists, which could account for their more frequent expectation of pain. This study did not undertake to examine the differential nature of equipment used by dentists who treat lower-class patients nor did it consider possible differences in orientation and attitude by dentists toward different classes of patients. However, research findings are available that show differential attitudes and orientations of physicians toward patients of varying class and ethnic origins.[40] Furthermore, it has been shown that lower-class people are more likely to believe that dentists do not care about the pain they cause patients and to feel that the quality of

dental work tends to be poor. The image of the dental profession held by lower class respondents is comparatively negative (see Table 27). It is, therefore, certainly possible that lower-class respondents have had or have heard about less favorable recent experiences with dentists.

Esthetic Aspects of Dental Care

Dental care involves not only medical and health considerations but esthetic implications as well. Concern with how one looks could of itself motivate people to undertake dental care. Furthermore, how a person feels he looks could well be related to his physical wellbeing.

These considerations have been shown to be relevant in the social context of the United States.[41] This is not surprising in a culture that emphasizes such values as youth, external good looks and success through appearance. Kegeles has shown in two empirical studies that concern with the esthetic aspects of teeth is associated with more frequent preventive dental behavior.[42]

In light of the different culture context it is of considerable interest to explore this problem in Israel. Three questions were posed in which respondents were asked how important is the external appearance of one's teeth in making new friends, in getting a job and in dating (Questions 67, 68, and 69).[43] These items defined a Guttman scale and the population was ranked from those who believe most in the esthetic relevance of one's teeth to those who perceive this as least relevant. Table 29 shows the absence of any relation between this variable and preventive dental behavior. The three class groups do not differ from each other either. In contrast to the United States findings, this variable does not appear to play a role in conditioning preventive behavior.

General Values and Behavior

Thus far this paper has been concerned with independent variables that bear some substantive relation to dentists or dental health. Other, more general, values and behavior patterns could also play a role in predisposing the individual to preventive dental behavior. Kriesberg and Treiman have considered this problem in an attempt to explain class differences in preventive dental behavior. They hypothesized that the different class groups might be characterized by different value orientations, which in turn could help explain the differential class predisposition to preventive dental behavior. In fact, their data fail to support this contention.[44] On the other hand, Kegeles in two

empirical studies shows that people who believe in "natural" rather than "fatalistic" causation of disease were more likely to engage in preventive dental behavior.[45]

TABLE 29. PREVENTIVE DENTAL BEHAVIOR BY IMPORTANCE OF ESTHETICS OF TEETH (QUESTIONS 67, 68 AND 69) AND CLASS

	Percentage Characterized by Preventive Dental Behavior		
		Class	
	Lowest	*Middle*	*Highest*
Level of importance attributed to esthetics of teeth			
High	8 (299)	27 (169)	38 (98)
Medium	12 (181)	21 (143)	40 (135)
Low	9 (323)	20 (252)	35 (152)
Percentage "low"	40 (803)	45 (564)	39 (385)

TABLE 30. PREVENTIVE DENTAL BEHAVIOR BY GENERAL VALUES AND CLASS

	Percentage Characterized by Preventive Dental Behavior		
		Class	
	Lowest	*Middle*	*Highest*
Belief in fate or self (Question 71)			
Fate or luck	7 (386)	15 (146)	29 (48)
Self	12 (429)	25 (419)	39 (335)
Percentage believing in fate or luck	47 (815)	26 (565)	13 (383)
Belief in efficacy of control (Question 72)			
Passive orientation	7 (264)	17 (109)	40 (47)
Mixed orientation	11 (223)	27 (167)	40 (109)
Active orientation	10 (329)	22 (288)	37 (227)
Percentage "active"	40 (816)	51 (564)	59 (383)
Time orientation: Predominant emphasis on: (Question 74)			
Present	9 (132)	21 (77)	33 (62)
Present and future	12 (343)	27 (283)	42 (191)
Future	7 (346)	16 (202)	33 (130)
Percentage with "future" orientation	42 (821)	36 (562)	34 (383)
Level of belief in traditional practitioners (Questions 13b, 14b, 15b)			
Low	11 (482)	23 (404)	38 (302)
Medium	9 (147)	22 (116)	45 (51)
High	7 (205)	20 (51)	26 (32)
Percentage "low"	58 (834)	71 (571)	78 (385)
Level of tendency to define oneself as ill (Questions 75, 5b)			
Low	10 (385)	18 (309)	30 (232)
High	9 (429)	27 (255)	45 (148)
Percentage "low"	47 (814)	55 (564)	61 (380)

The Israeli data are of considerable interest in this regard; first, because of the possibility to reexamine the general role of values in predisposing people to preventive dental behavior, and second, because of the heterogeneous cultural context and the comparatively high frequency in the population of traditionally orientated people.

Question 71 attempted to assess the individual's feeling of control or his fatalistic belief in luck in determining his fate. This notion roughly parallels Kegeles' variable mentioned above.[46] Table 30 confirms Kegeles' finding. People who believe that they control their fate are more likely to report preventive dental behavior than are people characterized by a fatalistic orientation. Furthermore, this table shows that fatalism is more prevalent in the lower-class groups.

On the other hand when the relation is studied between preventive dental behavior and a question that asked whether people believe they should take matters into their own hands or let life run its own course without interference (Question 72), no clear connection is found. Upper-class respondents are more likely to feel that they should take matters into their own hands; but stating this does not predispose people to greater preventive dental care.

In an attempt to replicate Kriesberg and Treiman's investigation of the role of time orientation to preventive dental behavior,[47] respondents were asked whether the present or the future was more important to them[48] (Question 74). The findings indicate that the Israeli data also fail to reveal a relation between these variables.

Finally, the Israeli population was asked about current beliefs in the efficacy of traditional medical practitioners. A scale was defined by traditional medical practitioners and whether the respondent believed that a talisman could be effective in preventing disease (Questions 13b, 14b, 15b). Although only small numbers of respondents in the upper- and middle-class groups reveal such traditional beliefs, these are more prevalent in the lower-class. What is important to this analysis is the fact that Table 30 shows no relation in the lower-class subgroup between beliefs in the efficacy of traditional medical practitioners and preventive dental behavior.

The evidence on the role of differential value orientations in conditioning preventive dental behavior is mostly inconclusive. Three or four values tapped do not show any relation. Belief in control or in luck does seem to show a meaningful pattern, but this finding alone is too thin to permit any general conclusions to be drawn.

The last general variable to be included in the present analysis is

termed the "Tendency to Define Oneself as Ill." It is based on a typology defined by two questions that asked respondents whether they would consider themselves ill and seek medical care if they found themselves with ambiguous symptoms, such as a bad cold without temperature or borderline temperature. This variable attempts to assess the subjective element in illness, which Mechanic has shown to be relevant to a variety of behavior patterns. It estimates the individual's readiness to enter the sick role.[49]

It is certainly of some interest to note in Table 30 that this variable is related to preventive dental behavior, but only in the upper- and middle-class groups. People in the upper strata of the social system who have a relatively high tendency to define themselves as ill are also more likely to engage in preventive dental behavior.

SUMMARY AND DISCUSSION

The marginal comparison of Israeli and United States findings in the area of dental health shows Israelis to be less preventively oriented than Americans. On the average they visit a dentist for purposes of a checkup less frequently than do Americans and fewer of them report brushing their teeth twice a day. Furthermore, Israelis first visited a dentist at a later age and appear to be less aware of the relevance of children's dietary habits to dental health. In addition Israelis are confronted with more apparent barriers to preventive dental behavior. They report more fear of pain than do Americans and they state more frequently that they do not know a good dentist or are too busy to visit one. Also, on the average they appear to know less about the importance of filling baby teeth.

At the same time it is of interest to note that Israelis tend to perceive the consequences of dental disease as somewhat more serious than Americans; furthermore Israelis' own evaluation of the condition of their teeth is less favorable than are Americans'. These attitudinal patterns suggest that, given the appropriate conditions, Israelis might find it easier to accept preventive dental practices.

The data also show similarity in certain areas that are relevant to dental health. A similar proportion report having a regular dentist; the frequency of replacement of lost teeth also appears to be quite similar. A similar proportion of Israelis and Americans report watching their own diet for foods that might be bad for their teeth. What is most striking is the similar image of the profession that seems to prevail

in the two societies. An approximately equal distribution of replies was found in the Israeli and American populations on questions relating to the competence of dentists in making fillings and to the concern of dentists with pain caused to the patient.

Finally, the data show that concern with the esthetic aspects of dental health is similar in the two populations insofar as it relates to making friends and dating, but Americans attribute a good deal more significance to a person's dental appearance in getting a job. Probably a widespread belief in Israel is that getting a job depends essentially on one's qualifications or possibly on who one knows, but not too often on how one looks. The "glamour" model is not yet widespread in Israel. It may possibly conflict with what currently remains of a traditional norm of simplicity in style of life that has its roots in the pioneering ethic that was so important in determining the fundamental value orientation of the society in its formative years. Furthermore, it is worth noting that the economy, which for many years was quite limited in its scope and markets, has only recently developed an awareness of the importance of "packaging" and of the external appearance of goods or people in commercial operations and this new approach has hardly had time to filter into the population. One would expect this pattern to change over time.

An examination of certain correlates of preventive dental behavior shows a remarkable similarity in the structure of the relations within the two social systems. Although in some cases the marginal frequencies differ between the two societies, the relations of several of the predictor variables to preventive dental behavior appear to be the same.

The most striking replication of American findings is the strong relation of social class to preventive dental behavior. This relation persists clearly and consistently in whatever combination of other variables have been examined. Like the American findings, the Israeli data also show that having a regular dentist increases preventive behavior. Childhood experiences of preventive behavior are likely to lead to such patterns during adulthood both in Israel and in the United States. And in neither society is a relation found between the quality of early childhood experience with dentists—in terms of its pleasantness or arousal of fear—and adult behavior in this area. A positive image of the dental profession correlates with preventive behavior in Israel as well as in the United States. Among the subjective feelings and beliefs examined, it was shown that perception of dental problems as

potentially serious predicts preventive dental behavior both in Israel and in the United States, although in the latter society the findings are not always completely consistent. So does a positive image of the dental profession. People in both societies who report financial barriers to visiting their dentist are less likely to engage in preventive dental behavior.

Insofar as more general values are concerned the evidence is mixed and not too strong. Like the United States findings, the Israeli data show that people characterized by a nonfatalistic orientation are more likely to engage in preventive dental behavior. On the other hand, another item that attempted to tap the same dimension failed to reveal this relation. Differential time orientations do not predict preventive dental behavior; this also confirms the American findings.

One of the more interesting and suggestive of the Israeli conclusions concerns a replication of certain American findings differentially in various social class groups. In a number of cases the correlation in the American studies appears in the upper-class groups and attenuates in the lower classes, or, in some cases, disappears altogether in the latter subgroups of the population.

Several American studies show, for example, that sex is related to preventive dental behavior, with women showing such patterns more frequently. The Israeli data reveal this pattern only in the upper-class groups. Another example of this pattern is seen in the relation of respondents' fear of pain to preventive dental behavior. This variable predicts fairly strongly in the upper- and middle-class groups and all but disappears in the lowest class group observed. The same empirical picture may be seen in the apparent role of respondents' knowledge of correct dental care. The connection observed is considerably weaker or entirely absent in the lower-class group, whereas the middle- and upper-class groups show the same positive relation found in American studies. A final example of this pattern appears in the relation of the salience of dental health to preventive behavior. The American evidence on this is unclear from the literature.

One can only speculate as to the explanation for this phenomenon; little systematic information is available concerning the subculture of the Israeli lower classes. Some aspect of this subculture apparently attenuates or eliminates the relations found in the other class groups. If the norm for preventive dental behavior in the lower-class group is extremely weak, as is in fact clear from the marginal descriptions, even

subgroups of the sort that in other classes show more positive preventive behavior apparently are drawn along by this norm and behave no differently than any other segment of the population.

The Israeli material fails to replicate a number of the American findings. No correlation was found in Israel, for example, between respondents' age and preventive dental behavior. Neither was it found that Israelis who feel themselves susceptible to dental disease are more likely to report preventive behavior. In the latter case different operational definitions of the variables could be responsible for the different findings. Finally, the Israeli data show no correlation between concern with the esthetic aspects of dental health and preventive behavior. It will be recalled that about the same proportion of Israelis and Americans show an awareness of the importance of the esthetics of dental health (except insofar as it is concerned with getting a job), but such awareness does not seen to be related to preventive behavior in Israel as it is in the United States.

REFERENCES

[1] National Opinion Research Center, Marginal Results and Basic Cross-Tabulations: Public Attitudes and Practices in the Field of Dental Care, University of Chicago, June, 1960, mimeographed.

[2] Hay, D. G., Larson, O. F. and Jotton, D., Utilization of Dental Services by Rural People in Selected New York Counties, *Journal of the American Dental Association,* 47, 428, October, 1953; and Rosenstock, I. M., Haefner, D. P., Kegeles, S. S. and Kirscht, J. P., A National Study of Health Attitudes and Behavior, School of Public Health, University of Michigan, 1964, mimeographed.

[3] National Opinion Research Center Survey #868, University of Chicago, 1965, unpublished.

[4] In fact, dental service is available to members, but, in contrast to other medical treatment, a charge is rendered.

[5] Though the two questions are not identically worded the differences between the percentages would nevertheless seem to provide an adequate empirical basis to conclude that Israelis feel that they have worse teeth than do Americans.

[6] Rosenzweig, K. A., Dental Caries and Fluorisis in Israel: A Sample Survey on Health of School Children, *Archives of Oral Biology,* 2, 293–307, October, 1960; ———, Equations and Curves of Dental Caries Prevalent, *Archives of Oral Biology,* 7, 401–406, May, 1962; Rosenzweig, K. A., *et al.,* The Oral Epidemiology of Various Ethnic Groups in Selected Rural Communities of Israel, *Journal of Public Health Dentistry,* 26, 353–365, Fall, 1966.

[7] Cantril, H., THE PATTERN OF HUMAN CONCERNS, New Brunswick, New Jersey, Rutgers University Press, 1965, pp. 36, 99–100.

[8] Shuval, J. T., *et al.,* DOCTOR-PATIENT RELATIONSHIPS IN ISRAEL (tentative title), San Francisco, Jossey-Bass, Inc., Publishers, 1968, in press.

[9] See also, Linn, E., Social Meaning of Dental Appearance, *Journal of Health and Human Behavior,* 7, 289–295, 1966.

[10] Kriesberg, L. and Treiman, B. R., Dentists and the Practice of Dentistry, *Journal of the American Dental Association,* 64, 58/806, 73/821, June, 1962; See also, McKeithen, E. J., The Patient's Image of the Dentist, *Journal of the American College of Dentists,* 33, 87–107, April, 1966.

[11] One problem that arises in comparing the United States and Israeli data lies in the fact that the former is frequently dichotomized, whereas the Israelis answered in four categories of response. The feelings reported above are based on a collapse of the two positive and the two negative categories such as to make them comparable to a two-category distribution.

[12] Kriesberg and Treiman, *op. cit.,* and Question 53 of the Israeli study. Note: Question 53 and all subsequent references to numbered questions in the text or in the tables refer to the original questionnaire, which is available to interested readers who request it from the author. It is not reproduced here because of limitations of space.

[13] This procedure was followed for simplicity in presentation of the tables. However, in all cases the entire continuum of reported behavior was observed before conclusions were drawn.

[14] Anderson, O. W., Collette, P. and Feldman, J., CHANGES IN FAMILY MEDICAL CARE EXPENDITURES AND VOLUNTARY HEALTH INSURANCE, Cambridge, Harvard University Press for the Health Information Foundation and National Opinion Research Center, 1963, p. 71; Freidson, E. and Feldman, J. J., The Public Looks at Dental Care, *Journal of the American Dental Association,* 57, 329, September, 1958; Kegeles, S. S., Why People Seek Dental Care: A Review of Present Knowledge, *American Journal of Public Health,* 51, 1311, September, 1961; Tash, R. H., A Study to Test the Preventive-Symptomatic Theory of Health Behavior, M. A. dissertation, Catholic University, Washington, D. C., 1957, p. 57; and Tash, R. H., O'Shea, R. M. and Cohen, L. K., Testing a Preventive-Symptomatic Theory of Dental Behavior, paper presented at the annual meeting of the American Public Health Association, 1967.

[15] Anderson, Collette and Feldman, *op. cit.*; Freidson, and Feldman, *op. cit.,* pp. 329–330; Kegeles, S. S., Some Motives for Seeking Preventive Dental Care, *Journal of the American Dental Association,* 67, 116/96–117/97, July, 1963; ———, Why People Seek Dental Care: A Test of a Conceptual Formulation, *Journal of Health and Human Behavior,* 4, 3, Fall, 1963; Kriesberg, L. and Treiman, B. R., Socio-Economic Status and the Utilization of Dentists' Services, *Journal of the American College of Dentists,* 150, September, 1960; Kriesberg, L., The Relationship Between Socio-Economic Class and Behavior, *Social Problems,* 10, 349, Spring, 1963; Tash, *op. cit.,* pp. 62–68; Tash, O'Shea and Cohen, *op. cit.*

[16] We are unable to further divide the Israel-born by the country of birth of their parents. It could be hypothesized that such a division would show each of the two subgroups of the Israel-born to be similar to the appropriate foreign-born group.

[17] Freidson, *op. cit.,* p. 329; Kegeles, Why People Seek Dental Care; Tash, *op. cit.,* p. 58; Tash, O'Shea and Cohen, *op. cit.*

[18] National Opinion Research Center, Marginal Results and Basic Cross-Tabulation: Public Attitudes and Practices in the Field of Dental Health, University of Chicago, June, 1960, mimeographed.

[19] Hochbaum, G. M., *Public Participation in Medical Screening Programs,* Washington, United States Public Health Service, no. 572, 1958; Rosenstock, I. M., *et al., The Impact of Asian Influenza on Community Life: A Study in Five Cities,* United States Public Health Service, no. 766, 1960; Heinzelmann, F., Factors Influencing Prophylaxis Behavior with Respect to Rheumatic Fever: An Exploratory Study, *The Journal of Health and Human Behavior,* 3, 73–81, 1962; Kegeles, Some Motives for Seeking Preventive Dental Care; ——, Why People Seek Dental Care.

[20] Heinzelmann and Kegeles' definitions of "susceptibility" were found after pretesting and several attempts at rewording proved too unworkable in the Israeli context. Kegeles' question defining susceptibility was formulated as follows: "How likely do you think it will be that (the worst dental problem mentioned that the respondent had experienced) will happen to you again?" Kegeles, Some Motives for Seeking Preventive Dental Care, 112/92; and Heinzelmann, *op. cit.*

[21] Tash, O'Shea and Cohen, *op. cit.,* pp. 4–5.

[22] Kegeles, Some Motives for Seeking Preventive Dental Care; Tash, O'Shea and Cohen, *op. cit.,* pp. 4–5.

[23] Kegeles, Why People Seek Dental Care, 1308–1309.

[24] It also assumes that people have other people available with whom to speak and that they are sufficiently extroverted to express the salience that an idea has to them by relating it to others. Both of these assumptions point up the roughness of this measure.

[25] Kegeles, Some Motives for Seeking Preventive Dental Care, 112/92.

[26] ———, Why People Seek Dental Care, 4.

[27] Tash's definition of "seriousness" focuses on the respondent's comparative preference for natural or false teeth. It is somewhat difficult to see how such a definition approximates the idea of perceived "seriousness" of dental disease. Tash, *op. cit.,* pp. 27–35.

[28] National Opinion Research Center, Marginal Results and Basic Cross-Tabulations, Question 22.

[29] Tash, *op. cit.,* p. 55.

[30] Freidson and Feldman, *op. cit.,* pp. 329–330.

[31] Kriesberg and Treiman, Socio-Economic Status and Utilization of Dentists' Services, pp. 152–153.

[32] Blum, L. H., Some Psychological Aspects of Dental Practice: A Study of the Individual Response to the Care of His Teeth, *Mental Health,* 47, 573, October, 1963.

[33] Kegeles, Some Motives for Seeking Preventive Dental Care, 115/95; Kriesberg and Treiman, Socio-Economic Status and the Utilization of Dentists' Services, 160.

[34] *See* Table 1.

[35] Kriesberg, L. and Treiman, B. R., Dentists and the Practice of Dentistry as Viewed by the Public, *Journal of the American Dental Association,* 64, 60/808, June, 1962; *see also,* McKeithen, *op. cit.*

[36] Tash, *op. cit.,* 41–44.

[37] Kriesberg and Treiman, Socio-Economic Status and the Utilization of Dentists' Services, 161.

[38] Kegeles, Some Motives for Seeking Preventive Dental Care, 115/95; ———, Why People Seek Dental Care, 5.

[39] Tash, *op. cit.*, 44–47.

[40] Zola, I. K., Illness Behavior of the Working Class: Implications and Recommendations, *in* Shostak, A. B. and Gomberg, W., BLUE COLLAR WORLD, Englewood Cliffs, New Jersey, Prentice-Hall, Inc., 1964, pp. 357–358.

[41] Linn, Social Meaning of Dental Appearance, *op. cit.*

[42] Kegeles, Some Motives for Seeking Preventive Dental Care, 114/94; ———, Why People Seek Dental Care, 5. In both studies Kegeles found a relation between esthetic concern for teeth and preventive dental behavior, but the relation was significant only between esthetic concern for children's teeth and preventive behavior.

[43] These three items were selected after extensive pretesting showed that several other items dealing with other contexts were meaningless to the Israelis.

[44] Kriesberg and Treiman, Socio-Economic Status and Utilization of Dentists' Services, 151–152.

[45] Kegeles, Some Motives in Seeking Preventive Dental Care, 114/94; ———, Why People Seek Dental Care, 5.

[46] *Ibid.*

[47] Kriesberg and Treiman, Socio-Economic Status and Utilization of Dentists' Services, 151–152.

[48] Pretesting showed that it was impractical to ask about orientations to the past inasmuch as responses were so few as to make this category unusable.

[49] Mechanic, D. and Volkart, E. H., Stress, Illness Behavior and the Sick Role, *American Sociological Review*, 26, 51–58; ———, Illness Behavior and Medical Diagnosis, *Journal of Health and Human Behavior*, 1, 86–94; Shuval, *op. cit.*

ACKNOWLEDGMENT

This investigation was supported by Grant No. BSS-DPR-IS-2 of the United States Public Health Service.