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ABSTRACT

The purpose of the study was to develop cultural models that describe dental care practices among the primary ethnic cultures of the Southwest. The pilot study sample, of Mexican Americans and Anglo Americans, was obtained through the Las Cruces Schools. Sampling was stratified random sampling using elementary school (grades 1-6) records. Initial analysis of data on the various technical and nontechnical factors indicated significant differences between the 2 groups in periodontal, decayed teeth, filled teeth, and frequency of visits to the dentist of both mother and child. Family size, education, income, and job skill of head of household were social/demographic factors in which significant differences were also found between the 2 groups. It was concluded that the best delivery of health services occurs only when the cultural barriers to such delivery are understood. This understanding cannot be reached merely in describing cultural differences but rather in the ordering and structuring of known variables into predictive models of dental care practices. (HBC)

Assessment of Dental Needs in a Multicultural Population

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I. Introduction

The study described here was sponsored by the Educational Research Center at New Mexico State University as the pilot for a larger study which is now underway under sponsorship of the National Institute of Health. The purpose of the study is to develop cultural models that describe dental care practices among the primary ethnic cultures of the Southwest. The pilot study, about which this report is concerned, considers Anglo and Chicano cultures. The larger study also includes Native Americans.

Dental care practices among two primary cultures of the Southwest, Mexican American or Spanish American and Anglo, are believed to be greatly dissimilar. However, the paucity of cross cultural studies precludes any positive statements regarding the determinants of such differences, or if they, indeed, exist. Thus, little knowledge exists relative to improving dental practices of populations of the American Southwest.

The purpose of our model building endeavours is to provide an understanding of the interrelationships of sets of variables and their effect, individually and jointly, on dental health status and dental hygiene practices of these two groups.

II. Background

This section reviews previous research in relation to two areas. First, the numerous factors associated with dental health care are discussed. Second, studies regarding cross cultural aspects of health practices are noted.

A. Factors Related to Dental Health Practices

Recent research has identified a multiplicity of factors related to dental health practices. However, no single factor has been found satisfactory in predicting behavior. Kegeles (1963) has suggested that an individual's health action is predicated upon:

(1) the belief that he is susceptible to the disease in question; (2) the belief that the disease, if contracted, would have deleterious effects for him; (3) his perception of the efficacy of actions available to him for prevention of the disease; and (4) his belief that the steps to prevention are not more damaging than the disease itself. However, Kegeles' results lend only nominal support to the conceptual model. Kegeles (1970) has since stated that, "there are some questions in our minds as to whether we have merely described the phenomenon in our conceptualization rather than formulated any kind of predictable conceptual scheme."

Socioeconomic status is the factor that has most consistently been demonstrated as influencing dental health care. Suchman and Rothman (1969) found that high socioeconomic rank is attended by a high degree of utilization of dentists' services. Furthermore, income, education, and occupation, the component measures of socioeconomic status, were discovered to perform both together and independently in influencing dental care behavior. Similar results have been reported in earlier studies (Kriesberg and Treiman, 1960; Lambert and Freeman, 1967; Collins, 1966; Jong, 1968).

Kriesberg and Treiman (1960) attempted to identify variables that account for the differences in dental care among socioeconomic groups. Although childhood training, relationship between patient and dentist, opinions and knowledge about teeth and their care, and fear of pain, were all shown to influence dental care practice in varying degrees, none of these variables were sufficient in explaining socioeconomic group differences. Lack of adequate financial resources appears to be the most important single factor considered in the study. Kriesberg (1963) has since concluded that dental care utilization is affected primarily by cultural factors, that is, those related to childhood experience and the socialization process.

According to Kriesberg, there are situational factors that influence dental care behavior. Most important among these variables is income. A second important situational factor is the interaction with the dentist. Thus, dentists who practice preventive dentistry are more likely to affect preventive dental care by their patients.

It is important to emphasize that these factors do not account for the manifest relationship between rank and dental care. According to Kriesberg (1963 p. 348), "when situational factors are relatively equal, we still find a high relationship between socioeconomic rank and utilization of dentists' services." Therefore, it appears that to remove income barriers, for example, will not substantially improve dental care behavior.

Tash et. al. (1969), noted previously, identified a number of variables, in addition to socioeconomic status and cost factors, related to a preventive orientation toward dental care. Included are fear of pain, dental knowledge, sex, age, ethnicity, and rural versus urban background. Most of the factors appear to work independently in influencing behavior.

Dental appearance or aesthetic considerations also appears to be a variable affecting the practices of dental care (Linn, 1966). There are differential effects depending upon the specific social situation and to some extent the social status of the person. Actual dental appearance and resulting self-conscious behavior were also found to be culturally or social status related.

B. Cross Cultural Studies

Model development according to ethnic affiliation would seem to be most useful for understanding and overcoming cultural differences in dental care.

Suchman and Rothman (1969) concluded that, in addition to variation among ethnic groups, there exists within group differences based on group identification. That is, the degree to which an individual identifies with his ethnic group bears a positive relation to the number of visits to the dentist by the individual. Thus, parochial individuals, those who adhered closely to their ethnic groups, were found to be less likely to avail themselves of dental services than cosmopolitans, those who were not closely affiliated with their groups.

Of the studies of cultural differences that have been reported, most are limited to social and ethnic groups that typically live in the metropolitan areas of the eastern United States. There is a paucity of information of differences and similarities existent

among Chicanos, American Indians, and Anglos, the three primary cultures of the Southwest.

C. Restatement of Objectives

It is apparent from the studies cited above that dental health practice is not a simple behavior. Rather, it is a product of numerous factors. Thus, according to Rayner (1970), the present need is not the identification of more influencing variables, but the ordering of known variables into models describing dental care practices. Furthermore, the models developed by Rayner indicate that the ordering of variables may vary for different cultural and ethnic groups.

Specifically, then, the research effort seeks: (1) to determine if the cultural groups differ in dental health hygiene indices, demographic characteristics, psychological factors, or social factors; (2) to develop explanatory models of dental health practices for each of the cultural groups relating dental indices to the cultural factors; and (3) cross validate the models using new data and appropriately revise.

General experimental hypotheses to be tested are:

1. Differences will exist between the cultural groups studied in regard to: (a) dental health/hygiene indices, (b) demographic characteristics, (c) psychological factors, and (d) social factors.

2. Based on these differences explanatory models can be developed for each of the cultures analyzed which will account for significant proportions of the variance of dental health practices.

III. Procedures

A. Sample

The pilot study sample of two groups, Mexican American and Anglo American, was obtained through Las Cruces Schools. Sampling was stratified random sampling using elementary school records. Each family in the population had at least one child in the elementary school (grades 1-6).

The on going larger study includes families from Las Cruces and from the Bloomfield, New Mexico area. The latter will provide an urban-rural dimension to the study.

B. Variables of the Study

The following represents what is considered a very complete list of variates.

a. Utilization of means of dental disease control as determined by frequency and type of visits to dentist or dental clinic, and modes of personal dental hygiene.
b. Technical/Dental variables regarding a subject's:
   (1) incidence of dental disease (DMF count).
   (2) index of carious tooth salvage (DMF/DM).
   (3) malocclusion status.
   (4) diet (self report via interview).
   (5) prior dental care (self report).
c. Sociological/Demographic factors regarding:
   (1) indicators of socioeconomic status (income, employment, formal education).
   (2) cultural factors (identification with ethnic group, i.e., parochialism versus cosmopolitanism, belief in fatalistic versus naturalistic causation of disease, aesthetic consideration [concern regarding dental appearance], and perceived criteria of good health).
   (3) mother's age.
   (4) size of family (to be differentiated from non-family members living in the home).
   (5) structure of the family (father or mother absent, grandmother head of household and so on).
   (6) barriers to utilization of dental services (relative cost of dental care [relative to family income], proximity of dentists or dental clinics, anxiety regarding dental visits including fear of pain).
   (7) subject's perception and knowledge of his (her) personal susceptibility to dental disease, the severity of dental disease, and the efficacy of dental care in deterring diseases.
   (8) subject's attitude toward dentists and the dental profession.

C. Data Collection

a. Interview Data

Data related to demographic characteristics and socio-psychological factors were collected by several teams of interviewers. These interviewers were selected from among female residents of the areas involved. Training was given to insure reliable data collection. Video-taped interview simulation techniques were used as part of this training. Initial contacts were made through the schools and mothers of all families selected were interviewed in their homes.

b. Technical/Dental Data.
Technical/dental data was collected at scheduled examination clinics by Qualified personnel. Data included DMF counts, measures of occlusion, peridontal and oral hygiene status.

IV. Findings

Initial analysis of data on the various technical and non-technical factors indicates significant differences between the two groups in certain characteristics:

Dental Health Status Indices

Index	Mexican American	Anglo American
Periodontal (Mother)	*	
Decayed teeth (Mother)	*	
Filled teeth (Mother)		*
Periodontal (Child)	*	
Decayed Teeth (Child)	*	
Filled teeth (Child)	no difference	
Frequency of visits to Dentist:		
Mother		*
Child		*

*significantly higher

Social/Demographic Factors

Factor	Mexican American	Anglo American
Family size	*	
Education		*
Job skill of head of household		*
Income		*

*significantly higher

Psychological Factors

Factor	Mexican American	Anglo American
Unfavorable perceptions about dentists	*	
Perceived need for professional dental care		*
Perceived financial barriers against dental care	*	
Fatalistic view towards health	*	
Parochialism index	*	

*significantly higher

Areas in which no significant differences between the groups were detected were:

(a) time since last visit to dentist (although larger for the Mexican American group)
(b) pain related anxiety
(c) transportation problems
(d) doubt about competency of dentists
(e) social anxiety
(f) dental appearance or aesthetic consideration

Diet is a factor which is still being investigated and will not be considered in this report. A difference appears in reasons for

seeking dental care. Twenty-six percent of the Mexican Americans who have visited a dentist did so for regular check-ups. Forty-five percent went for emergency purposes. This is contrasted with the Anglo group in which fifty percent went for regular checkups and ten percent for emergency treatment. The rest did so for continuation of dental work.

V. Conclusions

The pilot study has shown that for the groups sampled, there are differences in certain factors which might influence dental health care status and practices.

As was mentioned in the background section, Rayner (1970, p. 1250) has pointed out that: "What is needed now, however, is not more replication, [replication in showing relationships of variables to dental care] . . . but a causal ordering . . ." In other words, a great deal of research has been conducted relating variables to dental care. What there has been little of is a structuring of these variables into explanatory models. The next step in the study is such a causal ordering of the variables detected into descriptive models of dental care practices using path analysis.

Path analysis is a technique which takes the factors and links previously derived and establishes measures of relationship between the variables. In this way not only is the strength of relationship determined, but the direction of relationship as well.

Foster (1958) attributes the failure of many medical and public health programs to the inadequate attention given to the nature of the cultures involved. He lists a number of cultural barriers to medical care.

It would appear that the best delivery of health services will occur only when we understand the cultural barriers to such delivery. This understanding cannot be reached merely in describing cultural differences but rather in the ordering and structuring of known variables into predictive models of dental care practices.

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