

PARADOXICAL PATTERNS WITHIN A SINGLE AMERICAN CULTURE OF ORAL
HEALTH CARE REFLECT DIFFERENT QUALITY OF LIFE STANDARDS

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Objective: This study describes the culture of oral health access and delivery in Connecticut.

Methods: We conducted a mixed method ethnography that integrated narratives from one set of diverse research participants (n=39) with structured interviews from a different set of diverse participants (n=288). Principal components analysis tested the construct validity of culture, and correspondence analysis clarified significant forms of intracultural variation.

Results: The population studied shares a single cultural understanding organized around the assumption that oral health constitutes a cosmetic not a disease category. Intracultural variation in quality of life standards corresponds with a history of poor oral health.

Conclusions: Oral health prevention behaviors reflect cultural norms that bear on appearance and quality of life. Intracultural variation in quality of life standards, however, produces an apparent paradox, that the use of oral health services increases with access but may decrease with objective need. Improved oral health may require social marketing that targets people disenfranchised within the global market economy and their employers, and which stresses the socially enhancing objective of healthy teeth and gums.

KEY WORDS: Culture, oral health, access to care, use of care, quality of life

INTRODUCTION

This study describes the culture of oral health access and delivery in Connecticut. The influence of culture on oral health has been recognized for more than a quarter century (1,2). The American Medical Association and the U.S. Department of Health and Human Services have begun to employ an inclusive definition of culture, equivalent to that long used in anthropology (3-6), which recognizes that each person participates in many different cultures, including cultures specific to biomedicine, women, and the end of life. But there remain clinically important ambiguities. For example the new culturally and linguistically appropriate service (CLAS) standards embody stereotypical thinking by linking cultural differences with race and ethnicity (7). This study uses ethnographic analysis of narratives and numerical data collected from two sets of highly diverse research participants in Connecticut to document an American culture of oral health that transcends ethnicity, gender, and other potential sources of cultural difference.

In this culture of oral health access and delivery, oral health norms rest on the assumptions that (1) individuals exist as independent, self-contained entities, and (2) oral health constitutes a cosmetic not a disease category. The culture thus explains an individual's oral health problems as that individual's failure to take care of his or her teeth. But individuals act to achieve and maintain good oral health based on cultural norms that reflect the importance of appearance for their quality of life. Variation within this culture produces the paradox Gilbert identified (8), that the use of oral health services increases with access but may decrease with objective need. This intracultural variation, we suggest, reflects the extent to which individuals find themselves enfranchised or disenfranchised within the global market economy, and thus subject to job-based incentives for good oral health.

METHODS

This study used a mixed method ethnography that integrated narratives collected from one set of diverse research participants (n=39) with structured interviews collected from a different set of diverse participants (n=288) (6, 9). This project was reviewed by the institutional review board of the Department of Public Health, State of Connecticut, and was determined to be exempt from the approval process.

Sample Design & Size. Because cultures consist of shared things, ethnographic analysis answers the question of who shares what with whom and to what degree. To achieve reliable and valid findings about the content and boundaries of cultures, ethnographic studies employ a sample design that actively searches for cultural variation and the antecedent life experiences that may produce it (10, 11). The present study used a sampling frame stratified by age, gender, ethnicity, insurance coverage, status as dental provider (dentist or dental hygienist) or patient, self-defined status as having been raised in poverty or not, and history of significant oral health problems. We recruited some participants at dental offices and clinics. We recruited most participants in residential areas in diverse locales that tapped different social networks – in rural Eastern Connecticut, the Bridgeport-Stamford urbanized area (which includes the poorest and least educated as well as the wealthiest and most educated populations in the state), the Hartford urbanized area (which exhibits comparable diversity), and from the mid-state cities of Manchester and Willimantic.

Ethnographic sample size depends on the degree of similarity among cases and may range from as few as 4 to more than 30 cases (12-14). Protocol (semi-structured) interviews with a diverse sample of providers and patients elicited a common pattern of responses that led us to cease protocol interviews at n=39. Similarities among research participants' responses to the structured interviews ranged from 52% to 100% and averaged 73.4% (sd=5.9%). For this degree of similarity, a sample of only 10 people yields validity and reliability coefficients over 0.99 (12-14). We ceased sampling at n=288 after having sampled the socioeconomic extremes in Connecticut.

Data Collection. Protocol interviews were carried out face-to-face and in the preferred language of the respondent by the PI and a team of second- and third-year students in the University of Connecticut's graduate program in applied medical anthropology. These interviews, which took 30 minutes to 1.5 hours to complete, began by asking individuals their views about important community health issues. Thereafter, we asked people to tell us about the symptoms of unhealthy teeth and gums, their personal experiences with each symptom, its origins, implications, distribution, prevention and cure. The protocol incorporated freelists on issues like the different kinds of symptoms, treatments, and means of prevention that a research participant knew about. We used this information to create a structured interview with which to assess an individual's knowledge about (1) oral health symptoms, (2) effective means of prevention, (3) implementation of those means, (4) childhood training and modeling of effective oral health practices, (5) the relative importance of a good appearance and having good teeth, (6) a history of serious oral health problems, (7) the relative importance of the components of visits to a dental provider, and (8) life history variables (e.g., age, gender, ethnicity) that might influence the answers. The structured interviews also included a set of triads to elicit similarity judgments about a range of disease categories (e.g., cancer, depression, flu).

Data Analysis. We analyzed narrative data with schema analysis, which systematically searches for (a) the definitional content of labeled cognitive categories, (b) the value and emotional valence people assign to these categories, (c) the norms (and norms for breaking norms) that apply to the domains studied, (d) the institutional assumptions people use to rationalize specific norms and respond to specific forms of environmental variation, (e) their emotional responses to such forms of environmental variation, and (f) specific episodes of all of the above, which allow us to describe how shared cultural models apply to and correspond with specific acts, events, and pertinent coordinated activity systems (15).

We used principal components analysis of a matrix of coefficients that measure similarity among beliefs and behavior of participants to test for the construct validity of culture (6, 9). We used correspondence analysis (16) to analyze intracultural variation. Because measurements of cultural phenomena violate the independence assumption of classical statistical tests, Ordinary Least Squares regression tests for the effects of life history variables used permutation methods to generate probabilities.

RESULTS

Sample Characteristics. Table 1 summarizes characteristics of our research participants. Our search for cultural diversity led us to under-sample Whites (79% of the Connecticut population in the 2000 census) and over-sample minority populations. Our participants include Whites (63%), Latinos (17%), Blacks (13%), Asians (5%), and Native Americans (2%). Sixty-three % of our sample were dental patients and 38% dental providers. Seventy-four % of the providers worked in

private practices; 26% worked as public providers in community health center dental clinics. Fifty-seven % of the dental patients had private dental insurance, 12% had State Medicaid dental insurance, and 31% had no dental insurance. Thirty-one % reported having poor oral health (significant tooth pain or multiple large cavities or both, i.e. “bad teeth”) some time in the past; 9% reported having poor oral health at the time of interview. Our participants overwhelmingly assigned importance to a good appearance and good teeth; 2-3% reported that neither was important.

INSERT TABLE 1 ABOUT HERE

An American Culture of Oral Health. Principal components analysis confirmed the construct validity of a single shared cultural understanding that encompassed the symptoms of oral health problems, means of prevention, implementation of those means, and the good and bad aspects of a dental office visit: 76% percent of the variance among research participants was accounted for by factor 1 (the eigenvalue of factor 1 was 20 times greater than the eigenvalue of factor 2) and an inconsequential amount of variance was explained by factor 2. The cultural model of and for oral health behavior employed by our participants consisted of the following:

- Symptoms of oral health problems include sensitive teeth, tooth pain, receding gums, bleeding gums, and cavities.
- Means of prevention include brushing teeth, flossing teeth, use of an antibiotic mouthwash, and regular dental visits.
- Of these acknowledged means of prevention, people brushed regularly and made regular dental visits but few flossed or used an antibiotic mouthwash.
- Bad aspects of a dental office visit, which function as barriers to care,^{17–20} included encountering an unfriendly staff, long waits, discomfort, cost, pain, anxiety, and fear.
- Good aspects of a dental office visit included encountering a friendly staff, knowing the staff, short waits, receiving an explanation of the procedures, and clean teeth.

Participants’ background did not predict the degree to which they shared this cultural pattern. The average size of the shared intersection (factor loading) among our research participants was 88%. We looked for potential effects of the following antecedent conditions (see Table 1): childhood training and modeling variables, the importance of appearance and good teeth, kind and presence of dental insurance, ethnicity, age, gender, educational level, current income, and whether or not the individual reported having been raised in poverty. The combined effect of all potential predictors (adjusted R-squared) was only .069 ($F=2.870$, $p=.094$).

The norms that guide oral health behavior rest partially on the assumption that individuals exist as independent, self-contained entities. The prevailing cultural model thus holds that oral health problems reflect an individual failure to take care of one’s teeth. The prevailing cultural understanding holds that maintaining good oral hygiene means brushing teeth twice daily, flossing, using an antibiotic mouthwash, and visiting a dentist twice a year. Good supplements to these activities include a diet low in sugar, high in calcium, and rich in vitamins and minerals. Although a pattern of regular brushing in adulthood was assumed to come out of good parental training that produced responsible individuals who took care of themselves, a pattern of regular dental office visits was assumed to reflect a balance of specific constraints and opportunities that focused on the pain and stresses of dental work, and its cost in time and money.

A dental office visit constitutes a choice based on criteria that reflect important forms of intracultural variation. The prevailing cultural understanding of problems with teeth and gums is that, untreated they might mean increasing pain, tooth deterioration and loss, infection, gum disease, and the need for a root canal operation. But the model holds that oral health problems do not kill, and many go away on their own or respond well to self-treatment. Moreover, they progress so slowly that they rarely require immediate attention and an eventual dental visit (maybe several follow-up visits) eliminate the problem. Because dental problems rarely affect daily social functioning (at least in ways visible to most people; see the Conclusions), they remain (in the words of some respondents) “non-obvious” and “hidden.” Consequently, according to the prevailing cultural model, ordinary symptoms call only for self-diagnosis and self-treatment (21).

The prevailing cultural understanding also holds that the poor may suffer from greater dental problems because of the lack of insurance coverage and the costs of dental care. Without question, some people with little income or uncertain income streams delay dental office visits. But many clients with low incomes do not make this claim. For them, terror lies at the heart of the issue. For example, a young man replied to the question of why he did not visit the dentist regularly by saying:

Because. . . Well, I would say money. But I had Medicaid for years and never went to the dentist. I hate the dentist. It sucks. I was scared to go.

A young woman thought out loud:

It hurts and I had a root canal when I was 7 and it hurt and was horrible. I had braces when I was young but that wasn't too bad. They didn't have to drill. I don't think I could deal with the drilling. I think it's the irrational fear of going, but it's not really that bad. Definitely money, too. I had just gotten my fat check from the lawsuit, so I could afford it when I went over Christmas. I guess I could have borrowed money from my mom if I really wanted to go before. I had Medicaid for 7 years and still didn't go. When my Medicaid got cut I was like, “Well, now I can't go.”

Eventually, each visited a dentist, one driven by pain, the other driven by both embarrassment and pain.

Bad Teeth Is a Cosmetic, Not a Disease Category. Excepting a few oral health providers, study participants consistently failed to list problems with teeth or gums as either a common or a serious health problem. One respondent, confused by our initial question, pointed out that oral health does not comprise a “disease” category. He was right. Principal components analysis confirmed the construct validity of a single shared cultural model of similarities among a set of health and cosmetic categories and revealed that both dental clients and dental providers classify bad teeth as a cosmetic, not as a disease category: 84% percent of the variance in similarity judgments made by research participants was accounted for by factor 1 (the eigenvalue of factor 1 was 10 times greater than the eigenvalue of factor 2) and an inconsequential amount of variance was explained by factor 2. Like the cultural model of symptoms, preventative measures, and dental office visits, participants' background did not predict the degree to which they shared this cultural pattern. The average size of the shared intersection (factor loading) among our research participants was 71%. The combined effect of all potential predictors (adjusted R-squared) was only .013 ($F=1.393$, $p=.338$).

INSERT FIGURE 1 ABOUT HERE

Figure 1 shows a cluster analysis of our study participants' consensus. Cancer and heart disease, the major killers in our society, fit most closely together, but HIV/AIDS runs a close third. Measles and flu are potentially serious but rarely fatal physical ailments. Headaches are also potentially serious physical ailments. Depression, our culture holds, is a serious illness but people classify it as a mental not a physical disease. Together, cancer, heart disease, HIV/AIDS, measles, flu, headaches, and depression comprise a major cluster of disease categories. By contrast, study participants – including the dental providers who listed problems with teeth as an important health problem – place bad teeth, along with pimples and bad hair, in a major cluster of cosmetic deficiency categories.

Protocol interviews yielded pointed comments about the importance of social cosmetics. For example, a 25 year old woman who had had dental problems since childhood, including caps on her teeth at age 6 and veneers at age 14, commented that the process was not too painful and it was totally worth whatever the pain to have “nice teeth.” She said that having brown teeth makes people think “you don’t take care of yourself.” There is no cause for embarrassment without an audience attuned to cosmetics. Without exception, people who reported having had bad teeth earlier in life but good teeth now explained their change in oral health status by reference to a change in life circumstances. Earlier in their lives, appearance did not matter. Because of the jobs they held and their unconcern with social and economic mobility, even grossly unaesthetic decayed and missing teeth produced no effect worthy of notice. Later, it did, but only because they anticipated that a pleasing personal appearance would be necessary to achieve their new social and economic mobility goals.

A person’s embarrassment at having bad teeth not only provides an incentive to override one’s fear of a dental visit, embarrassment at not regularly visiting the dentist or not flossing regularly makes clients defensive. Although pain, lost time, and financial expenditure were the most commonly named items when we asked respondents about the worst thing about visiting a dentist, induced embarrassment occurs often. As one young woman noted, “I always know they’ll give me a hard time about flossing and I have no excuse so I feel stupid.” Another felt her recent dental office visit went well, and explained: “I wasn’t yelled at for supposedly not flossing.”

Intracultural Variation in Oral Health Practices and Outcomes. Figure 2 explores graphically some implications of this finding for intracultural variation. A correspondence analysis plot shows each individual’s relationship to a set of variables. As the degree of correspondence grows, spatial proximity grows. Symbols for individuals reflect whether (large symbols) or not (tiny symbols) the person reported currently having significant oral health problems.

In Figure 2, research participants fall into three groups that correspond with insurance coverage categories. Individuals within each group exhibit varying distances from a set of highly interdependent proximate and distal predictors of good oral health: regular visits to a dentist, regular teeth brushing, whether or not the person brushed regularly as a teenager, and the importance of a good appearance and good teeth. Individuals closest to the predictors brushed and made dental visits frequently, reported that a good appearance and good teeth were very important, and brushed regularly as a teen. Individuals farthest from the predictors brushed and made dental visits infrequently if at all, reported that a good appearance and good teeth were not important, and did not brush regularly as a teen. Individuals who lie between these extremes reported mid level frequencies of brushing and dental visits, reported that a good appearance and good teeth were

important, and mostly brushed regularly as a teen. The likelihood that a participant reported bad teeth at the time of interview rises as distance from the predictors grows.

INSERT FIGURE 2 ABOUT HERE

CONCLUSIONS

The prevailing cultural understanding holds that oral health constitutes a cosmetic not a disease category. Individuals act to achieve and maintain good oral health, consequently, based on cultural norms that reflect the importance of appearance for their quality of life. Going to a dentist costs money and may entail even more costly expenditures of time. Even basic procedures, patients say, require confinement, impair their ability to communicate, invade their private spaces, and hurt. Going to a dentist thus frightens us and strongly evokes our body's stress response..

Tooth pain gives us one incentive. But our research participants told us that tooth pain, like other physical ailments, can be self-diagnosed, self-treated, and usually goes away by itself. If it doesn't, they continued, intensifying pain will eventually drive a person to the dentist or the emergency room, contingent on the person's relative tolerance for pain, lost time and money, and stress.

Cultural norms give us a second incentive. Cultures exert effects owing to the sensory inputs they generate, which constitute an environment to which people must respond. People must respond to the extent to which ecological contingencies influence the *consequences* of behavior in significantly positive or negative ways. The relative importance of appearance and having good teeth is a function of the cultural norms imposed on people who aspire to career tracks and increasingly responsible work or social positions in the global market economy (22, 23). The commercial advertising of popular culture and print and broadcast media have it right that looking good improves a person's ability to both enhance their material well-being and attract a mate. We not only know how to prevent dental disease, we regularly brush our teeth and visit a dental provider, and make sure our children do, too. If we get a poor start, we catch up. Thus, whereas 83% of our respondents reported that their parents enforced regular brushing as children, 88% reported regular brushing as a teen and, at the time of interview, 96% reported that they brushed their teeth at least once daily.

But looking good by standards set in the global, competitive market economy, on which we now base measurements of quality of life (24-26), does not hold for everyone. A small number of people define quality of life in ways that do not ascribe importance to appearance and having good teeth, despite sharing the cultural model of oral health outlined earlier. These people are those who do not recognize the truth in popular culture. In the disenfranchised world in which they live and work, the absence of prospective career tracks means that looking good does not affect their material well-being. These are the clients who show up at hospital ERs for emergency care, and whose oral health practices dental providers find troublesome. They brush irregularly if at all and avoid making a dental visit until the pain gets too great. In the process, they may make dental appointments, but cancel them if the pain abates or something more pressing comes up. The delay in addressing the problem makes their pain and the complexity of the health issue that much worse. The cost of the dental procedures goes up in both time and money. An initial visit typically aims to reduce or eliminate the pain. Because these clients value no pain but do not value good teeth, the dental providers who do and who schedule follow-up procedures find themselves with further cancellations.

Findings from an ethnographic sample with high reliability and validity coefficients such as the one reported here may be generalized to people in a particular region, at a particular time with the demographic characteristics of the sample studied (10). The findings reported here apply specifically to people who currently live in Connecticut and who fall within the range of variation of the demographic characteristics reported in Table 1. Cultures change, however, and in only a few years our findings may not apply to Connecticut's population. Furthermore, ethnographic studies in the American South, Midwest, Southwest, or Pacific Northwest may reveal significant cultural differences. Nonetheless, in the absence of barriers to communication and social interaction, cultures exhibit continuity over space and time. This suggests that our finding of a single cultural understanding organized around the assumption that oral health constitutes a cosmetic not a disease category may apply broadly across the United States.

Much evidence suggests that oral health problems reflect population vulnerabilities (27, 28). If the findings reported here apply generally, however, prior research focused narrowly on health care access may have missed an important source of vulnerability, the absence of job-based incentives for good oral health. Intracultural variation in the importance of appearance for quality of life explains the paradox that Gilbert identified (8): the use of oral health services may increase with access but decrease with objective need. Improved oral health thus may require social marketing that targets people disenfranchised within the global market economy, and their employers, which stresses the socially enhancing objective of healthy teeth and gums. Quality of life instruments may need adjustment for intracultural variation.

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TABLE 1. Sample Characteristics (N=288)

Variable	Statistics	
Age	Mean	34 years
	SD	12
	Min-Max	18-77
Gender	Men	24.2%
	Women	75.8%
Ethnicity	White	63.4%
	Latino	16.7%
	Black,	13.0%
	Asian	4.9%
	Native American	2.0%
Service Status	Patient	63.2%
	Provider (dentist or dental hygienist)	36.8%
Provider Status	Private Practice	73.6%
	Public Practice	26.4%
Completed Education	Some secondary school	3.9%
	Secondary school	17.3%
	Some college	37.0%
	College	24.6%
	Post-graduate schooling	17.2%
Grew up in Poverty	Yes	38.8%
Current Income	Low	27.9%
	Middle	65.7%
	High	6.4%
Dental Insurance	None	30.9%
	Public	11.8%
	Private	57.3%
Poor Oral Health	History of poor oral health	30.9%
	Current poor oral health	8.7%
Importance of Good Appearance	Not important	1.7%
	Important	36.8%
	Very Important	61.5%
Importance of Good Teeth	Not important	2.8%
	Important	35.8%
	Very Important	61.4%
Childhood Training and Parental Modeling	Parents Emphasized Importance of Good Teeth	81.9%
	Parents Enforced Regular Brushing as Children	83.0%
	Individual Brushed Regularly as a Teen	87.5%

FIGURE 1. Cluster Analysis of Similarities



