Coping with Toothache Pain: A Qualitative Study of Low-Income Persons and Minorities

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Abstract

Objectives: *This study examined the behavioral impact of toothache pain as well as self-care strategies for pain relief among minority and low-income individuals.* ***Methods:*** *Eight focus group sessions were conducted with 66 participants drawn from low-income non-Hispanic White, non-Hispanic Black, and Hispanic adults over the age of 20 who had experienced a toothache during the previous 12-month period and who had utilized self-care or care from a nondentist.* ***Results****: Toothache pain was described as intense, throbbing, miserable, or unbearable. Focus group participants indicated that toothache pain affected their ability to perform normal activities, such as their job, housework, social activities, sleeping, talking, and eating, as well as making them depressed and affecting their social interactions. Numerous prescription and nonprescription medications as well as home remedies and self-care strategies were used for pain relief, although these were generally of limited and uncertain benefit. While receiving care at a dental office was the most preferable option for care, most participants reported multiple barriers, including the cost of dental care that resulted in long delays in seeking dental care. The main reason for eventually seeking dental care was the severity of the pain.* ***Conclusions:*** *Although removing financial barriers alone may not lead to preventive dental visits, it would facilitate more timely visits to dentists to treat toothache pain.*

Key Words: toothache pain, self-care, home remedies, minority oral health

Introduction

Low-income and minority adults have a higher prevalence of oral disease (1, 2) and often experience financial as well as other barriers to private dental practice (2–4). As a result, these groups often are either forced or chose to use nontraditional providers (5), forgo treatment, and/or use alternative strategies or self-remedies for relief of toothache pain (6–9). Given the large number of patients who may seek relief by means other than visiting a dentist, it is important to understand the behavioral impact of toothache pain on these groups as well as the "alternative" treatment methods they utilize for pain relief, both of which are likely to be strongly impacted by a patient's sociocultural background.

Cultural differences between groups may be seen in their differing values, lifestyles, and behaviors. These cultural differences are partly responsible for group differences in oral health status, oral health behavioral impact, and dental services utilization (10, 11). In general, the negative consequences of poor oral health, such as the inability to perform normal social roles, may be tolerated when individuals are faced with more pressing needs (12). Thus, underutilization of dental services may be a rational assessment of the benefits to be gained from formal care based on previous experience and group or family norms (12).

Patient self-care strategies can work in concert with or replace conventional dental services (13). Therefore, any study of pain relief-seeking behaviors, including self-care, must be sensitive to and take into consideration the racial/cultural differences in habitual self-care behaviors for coping with orofacial pain. Furthermore, prior racism may impact the attitudes toward providers and the use of services (14), as well as directly influence oral health via biopsychosocial mechanisms (15), providing further support for the importance of specifically studying oral health behaviors in ethnic minority groups.

At present, not enough is known about how the poor and minorities perceive dental pain, how the pain affects their daily lives, or the pathways through which patients seek relief. Qualitative research approaches are well suited to study these issues. Several qualitative approaches for studying this problem have been reported in the dental literature (7, 16–20). Focus group interviews, a qualitative tech-

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nique, are particularly useful in gaining a better understanding of the language used by a group around a particular issue and identifying/clarifying the most important elements of a particular experience (21). Additionally, focus group methodologies offer the ability to flexibly and rapidly generate information on various aspects of an issue in a single application (22). In the context of exploring toothache pain among racial minorities and the poor, the advantage of the focus group is that it allows the investigator to probe responses, explore relationships between symptoms and self-care and traditional care strategies, and explore the culturally related vocabulary, symptom recognition, and decision-making patterns of the target population.

This report presents the findings from the qualitative phase of a study that is examining the behavioral impact of toothache pain as well as self-care strategies for pain relief among minority and low-income populations. A particular emphasis was placed on the inclusion of Hispanic participants, as it appears that few studies have been directed toward this minority ethnic group.

Methods

For the purpose of this study, "toothache pain" was self-defined by the respondents by means of a positive response to the question, "Have you had a toothache at any time during the past 12 months?" Focus groups were used to gather qualitative data pertaining to toothache pain, pain-related behavioral impact, and care/relief-seeking behaviors, including self-care strategies. Participants were drawn from low-income non-Hispanic White, non-Hispanic Black, and Hispanic adults over the age of 20 who had experienced a toothache during the previous 12-month period, and who had utilized self-care or care from a nondentist for pain relief at least once.

Eight focus group sessions were held in three locations around Maryland. Three groups were convened in the Baltimore area, four in the rural Western Region, and one in the rural Eastern Region of the state. Two focus group sessions were conducted with Hispanics, two with non-Hispanic Whites, and four with non-Hispanic Blacks. A total of 81 individuals agreed to participate in the focus group sessions while 66 actually did so. The investigators used a combination of strategies to recruit participants for the focus group project. In addition to seeking recruits through one of its community partners (St. Michael Outreach Center) the investigators also used secondary recruitment strategies via message boards and screening at health advocacy organizations, local community organizations, places of worship, and local health departments through the network of partners associated with the University of Maryland Statewide Health Network. The project staff developed a screener to guide the recruitment process and conducted telephone conference calls with organizations that agreed to assist with recruitment. Several organizations chose to screen participants into the focus groups themselves, while other community groups referred them to an 800 number where they could call the study coordinator in order to be screened. Participants received a nominal $40 to help cover expenses associated with their participation.

An experienced moderator and a co-moderator who took notes conducted the focus groups. In addition, each focus group session was audiotaped to aid in the subsequent analysis and ensure that the actual language and word choice of the participants was captured. The moderator and co-moderator debriefed after each group. Multiracial/ethnic focus group staff was matched to the race/ethnicity of the group participants to reduce initial barriers to communication and contribute to building rapport. Hispanic focus group sessions were conducted in Spanish. Moderators used a focus group guide developed in collaboration with study staff to guide the discussion. Individual focus groups included both men and women of varying ages (all over age 20), but were homogeneous in terms of race. The discussions lasted on average 2 hours. At the beginning of each group, each participant was asked to sign a consent form. The participants also were asked to complete a short questionnaire covering sociodemographics, general health status, and service utilization-related variables.

After each group, the moderator and co-moderator prepared a five- to six-page summary of the focus group discussion using the broad categories from the interview protocol as structure. Information from the co-moderators notes as well as the audio recordings of the focus groups were used in preparing the summaries. After the eight focus groups, the summaries were coded and analyzed using the QSR NVivo (QSR International Pty Ltd., Melbourne, Australia) (23), a qualitative data analysis software program, in order to sort the text data into the broad categories from the interview protocol. We then conducted additional analyses to identify recurring themes within each coding category and to summarize the findings.

Results

Sociodemographic Background of the Participants. As shown in Table 1, the participants in this project were predominantly female (n = 44), about half were African-American (n = 32), while Whites and Hispanics were equally represented (n = 17 for each respective group). Hispanic participants had been in the United States between 1 month and 9 years and primarily originated from Peru, Mexico, and Guatemala. The majority of all participants was never married, 25 to 44 years of age, and had completed some college or technical school. The median income of the majority of participants was between $10,001 to $15,000 per year.

General Health Status and Dental Service Utilization Background of the Participants. The general health status and dental service utilization background of the focus group participants appear

Table 1
Sociodemographic Background of Focus Group Participants (n = 66)

	Number of participants
Age	
Under 25	2
25 to 34	15
35 to 44	16
45 to 54	21
55 to 64	8
65 and over	4
Gender	
Male	22
Female	44
Race/Ethnicity	
White	17
Black	32
Hispanic	17
Highest grade	
6 to 8	3
9 to 11	5
12	4
Some college or technical school	17
College graduate	14
Marital status	
Married	17
Separated	4
Divorced	17
Widowed	1
Never married	25
Income	
5,000 or less	12
5,001 to 10,000	10
10,001 to 15,000	16
15,001 to 20,000	7
20,001 to 30,000	6
30,001 or more	5
Don't know	7

* Numbers not totaling 66 indicate nonresponse.

in Table 2. Overall, approximately one quarter (25.8 percent) of the focus group participants considered themselves to be in excellent/very good overall health with African-American respondents expressing the highest levels (33.3 percent) and Whites the lowest (17.6 percent). In contrast, the participants' assessments of their dental health were much more negative with only 7.9 percent of all respondents considering it to be excellent/very good. Hispanics were most likely to report their dental health as excellent/very good (21.4 percent). As we expected, overall, the majority of participants (62.9 percent) indicated that they never visited the dentist or only visited when they had a dental problem. Hispanic respondents, however, were more likely to report that they made nonsymptomatic dental visits (64.3 percent). Approximately three quarters (77.4 percent) of all participants reported that they had visited a dentist within the past year. This figure was highest for White respondents (94.1 percent). Overall, the participants had a history of multiple toothaches, with 35.5 percent of the participants reporting experiencing 4 to 9 and 27.4 percent reporting 10 or more. Variation across groups in the number of toothaches experienced was not dramatic. The participants also were asked to rate the level of pain they experienced from their most recent toothache on a scale of 0 to 10, where 0 represented practically no pain and 10 represented extreme pain. In general, the participants rated their toothaches as being very painful, with 37.7 percent rating them on the pain scale as 6 to 8 and 32.8 percent rating them as 9 or 10. African-American respondents reported the highest level of toothache pain (43.3 percent reported levels of 9 or 10), while Hispanics reported the lowest pain levels (50.0 percent reported levels of 5 or less).

Toothache Pain Experience. Participants in each group were asked to describe their most recent toothache experience. Most felt that although the pain sometimes lessened, it almost always got worse if left untreated. Participants across all groups used similar language to describe their pain experiences. Toothache pain was described as intense, throbbing, piercing, miserable, and unbearable. Many described it as the worst pain they ever experienced. "*It feels like you want to die sometimes. You just want to cover your head up and say this is it*." Several female participants stated that the pain from a toothache was "worse than childbirth" and a few participants compared the pain to that of a migraine headache. "*Pain you wouldn't want your worst enemy to have. One second is like five minutes*." Another participant commented, "*It controls your whole life . . . my day depended on how bad my tooth was hurting*."

Behavioral Impact. The behavioral impact of toothache pain did not appear to vary across groups. Participants generally agreed that toothache pain affected their mood and their ability to perform normal activities such as their job, housework, social activities, sleeping, talking, and eating. One participant commented that a bad toothache resulted in her losing her job. Many participants stated that toothache pain affected their mood by making them "*mean and irritable*," "*cranky*," caused them anxiety, and made them feel desperate and want to isolate

Table 2
General Health Status and Dental Service Utilization Background of Participants

Question	Response	African-American (n = 32)	Hispanic (n = 17)	White (n = 17)	Total participants (n = 66)
		No. (%)	No. (%)	No. (%)	No. (%)
How would you rate your overall health?	Excellent/Very good	10 (33.3)	3 (20.0)	3 (17.6)	16 (25.8)
	Good	10 (33.3)	7 (46.7)	9 (52.9)	26 (41.9)
	Fair/Poor	10 (33.3)	5 (33.3)	5 (29.4)	20 (32.3)
How would you rate your dental health?	Excellent/Very good	1 (3.1)	3 (21.4)	1 (5.9)	5 (7.9)
	Good	8 (25.0)	1 (7.1)	3 (17.6)	12 (19.0)
	Fair/Poor	23 (71.9)	10 (71.4)	13 (76.5)	46 (73.0)
Which statement describes the way you made visits to a dentist?	I never go/only go when I have a dental problem.	21 (67.7)	5 (35.7)	13 (76.5)	39 (62.9)
	I go occasionally (even if there is no problem)/regularly (to have my teeth checked).	10 (32.3)	9 (64.3)	4 (23.5)	23 (37.1)
How long ago was your last visit to a dentist?	1 year ago or less	22 (68.8)	10 (76.9)	16 (94.1)	48 (77.4)
	More than 1 year ago	10 (31.3)	3 (23.1)	1 (5.9)	14 (22.6)
How many toothaches have you had in a lifetime?	3 or fewer	13 (40.6)	4 (28.6)	6 (37.5)	23 (37.1)
	4 to 9	11 (34.4)	6 (42.9)	5 (31.3)	22 (35.5)
	10 or more	8 (25.0)	4 (28.6)	5 (31.3)	17 (27.4)
How would you rate the pain from your most recent toothache? (0 = mild to 10 = worst)	0 to 5	6 (20.0)	7 (50.0)	5 (29.4)	18 (29.5)
	6 to 8	11 (36.7)	6 (42.9)	6 (35.3)	23 (37.7)
	9 or 10	13 (43.3)	1 (7.1)	6 (35.3)	20 (32.8)

Cell counts not totaling 32 for African-Americans, 17 for Hispanics, 17 for Whites, or 66 for the total are because of item nonrespondents in the group. Percentages are based on the actual number responding to each question.

themselves from others. "*You become withdrawn, don't want to communicate, don't want to cause more pain for yourself*." As another participant stated, "*At work I just lock myself in my office to get away from everybody*." Participants also described toothache pain as making them depressed and affecting their social interactions in general. "*Can't do anything, you can't go to work, you can't do housework, can't do anything*." Other participants explained that toothache pain often resulted in conflicts between family members by causing them to lose patience and tolerance when interacting with children and spouses. "*I have grandkids and I can normally tolerate them. When I have a toothache, I'm ready to give them a sedative. I can't stand them calling me. I'm just concentrating on this constant pain. People that have small kids could actually harm the kids because they become more short tempered*." Others stated that toothache pain caused them to act in ways that they would not normally act. This point was summed up by one group member's statement. "*Toothache pain affects your interactions with people, your family, and on your job because you just can't take it. Usually you can be the most patient, caring, and loving person in the world and you get a toothache that changes your whole disposition. You're gone. You don't want to be bothered; you don't want to hear nothing . . . you don't care if somebody else is in pain. You just don't care*."

Informal Pain Relief-Seeking Behaviors/Self-Care Strategies. Participants discussed numerous prescription and nonprescription medications, as well as home remedies and self-care strategies that they used to get relief from toothache pain. Many participants reported that their preferred choice for pain relief was pain medications received from friends or family members who were prescribed medications for previous toothaches. They also described different individuals who pain sufferers may turn to for pain relief and advice. Participants across all groups mentioned using a wide range of home remedies to alleviate toothache pain (Figure 1). Participants sometimes mentioned drastic measures used to alleviate toothache pain, such as rinsing with toxic substances, getting arrested to receive needed dental care, and self-extractions. One participant commented that older people tie strings around the affected tooth and "*snatch it out*." Others reported having older relatives who pull affected teeth out with pliers.

In addition to the home remedies mentioned earlier, Hispanic focus group participants provided examples of a number of home remedies adopted from their native countries (Figure 2). Many Hispanic respondents stated that they used home remedies first even to the extent that they write home for them, obtain them from local "tiendos" or Latino stores, or obtain them themselves or

Figure 1
Home remedies/self-care common to all focus groups

- Over-the-counter medicine (Tylenol, Advil, aspirin, Motrin, ibuprofen, Nyquil, and Tylenol PM).
- Over-the-counter dental products (Oragel, Ambesol, Listerine, peroxide, toothpaste, and dental wax)
- Prescription medicine (antibiotics, morphine, penicillin, ampicillin, and oxycodene)
- Rinsing the mouth in salt and warm water
- Placing teabags on the tooth
- Placing ice on the affected area
- Placing aspirin on the affected area
- Massaging the gums
- Drinking liquor or applying it to the tooth with a cotton ball
- Placing warm compresses/heating pads on the jaw
- Prayer
- Putting spices such as cloves, ginger, and garlic on the tooth
- Paregoric
- Putting items such as popcorn or chewing gum in the hole in the tooth
- Rinsing the mouth out with toxic substances such as gasoline, kerosene, and rubbing alcohol
- Wrapping something tightly around their head
- Pulling the tooth themselves or having someone else pull it

Figure 2
Home remedies/self-care strategies specific to Hispanic focus groups

- Place an Alumbre (a special stone that is just a bit bigger than a grain of sand) on the tooth or cavity
- Squeeze green tobacco onto a cotton ball and put it in the tooth or cavity
- Chew coca leaves and cinnamon sticks
- Burn epazote leaves and put a wad of it on the tooth or cavity
- Put a piece of limon (type of citrus native to South America) or drink juice of limon
- Alcanfor (numbs the gum area)
- Cleozote (a liquid that numbs the area)
- Prick body with needles to "divert" the pain or insert a needle into the tooth
- Cordranac (pain killer from Peru)
- Apronal (swelling reducer from Peru)
- Use a drop of Creso on a cotton ball and place on cavity (strong disinfectant chemical from Peru) ("It kills the worm that starts the pain. It can take the cavity away and heals the person.")

from relatives and friends on trips to their native countries. Hispanic participants in particular commented that they only visited a dentist as a last resort in response to intense pain. Several Hispanic participants mentioned going home to their native countries to receive dental care.

Only African-American participants mentioned spiritual aspects of dealing with toothache pain, with one actually mentioning visiting a spiritual healer. This participant explained that, "*They will touch wherever the pains are and I've had that done and the pain went away, but it was on a constant basis that you had to get it done.*" Other participants stated that they often prayed for sleep and pain relief when experiencing toothaches. Several participants mentioned that applying anointing oil to their jaw where the pain occurred was effective in alleviating the pain. In one African-American group, participants stated that "*a lot of people believe in the Lord to take care of it.*" One participant described an occurrence when toothache pain during a church service came unexpectedly and was relieved after reciting a prayer, believing that God could relieve the pain and that the church pastor could heal her by the "*laying on of hands*" to the affected area.

We asked participants if there were people that they used as sources for advice when they had toothaches. Sources identified by all groups included older people, neighbors, friends, parents/grandparents, other relatives, and spouses. Black participants also mentioned spiritual advisers and The Lord. These sources were often preferred over dental professionals because they were known to have acquired extensive knowledge and experience with alleviating toothache pain. Stated reasons for seeking advice from others included to learn what dental procedures are like from someone who had the experience, to obtain comfort, and as a distraction from their own pain. Participants also mentioned seeking advice for what remedies to use, recommendations on the best or least expensive dentist to see, coping strategies, and suggestions on alternative medicines to use.

Reasons for Not Seeking or Delaying Seeking Care from a Dentist or Other Formal Care Source. In general, the reasons given for not seeking or delaying seeking professional care were similar across groups. Overwhelmingly, participants in all groups identified financial reasons for using home remedies and self-care strategies to treat toothache pain rather than going to the dentist. Nevertheless, participants generally stated that receiving care at a dental office was the preferred option for care. However, most felt that the cost of dental care was prohibitive and as a result, they delayed seeking care as long as possible until the severity or duration of the pain drove them to seek care from a dentist. As one participant stated, "*You'd be surprised how much pain you can endure, but once you reach that threshold, you need to get it taken care of. Either you take it out or it takes you out.*" Across all groups, participants stated that dental care is more expensive than medical care and without good

dental insurance they are not able to afford dental care. As one participant noted, "*Dental care is expensive and it's hard to find a dentist who accepts Medical Assistance*." One respondent in a Hispanic group who had a job that offered dental insurance found that the cost of the insurance ($90/month) was more than she could afford to pay. Another respondent was covered but still could not afford the co-pay costs. In one Hispanic group, participants stated, "*. . . that some clinics don't serve you because you're Hispanic and you're poor*." Several Black participants also cited racism as a barrier to care. One expressed the belief that lower-income Whites as compared to Blacks were more likely to receive treatment without having to pay for the care.

Time availability was a factor across groups in not receiving dental care. Several participants felt that they did not have the ability to take time off from work. Some participants stated that in relation to the other concerns they had, dental concerns were not a high priority. Several Hispanic respondents mentioned the fact that they would miss one day's pay plus they have to spend money for the treatment, leaving less money for housing, food, and transportation.

Fear of dentists also was a commonly cited reason for not seeking dental care. Other participants mentioned a fear of needles and pain, and the realization that the dentist may find other problems. Dentists' attitudes also were mentioned as barriers to care. Several participants felt that dentists were rough, had no patience, and never explained what they were doing or explained it in too much detail. Other respondents indicated that they did not trust dentists, especially those dentists that they considered to be less expensive. As would be expected, Hispanic participants also frequently described language barriers as reasons for not seeking treatment. Several participants stated that they hesitated to get dental care because they were not aware of places that had providers who spoke Spanish. Problems with transportation also contributed to a lack of access. Hispanic participants in particular commented that it was difficult to travel outside of their known neighborhood. One African-American participant stated that there might be cultural reasons why some people never go to a dentist to receive care. "*We are people that tend to fix it when I deal with it. We are big prayer people. Even people that could afford it don't go. Maybe cultural*."

Discussion

Overwhelmingly, participants described pain from toothaches as being among the most intense of all pain experiences. Therefore, not surprisingly, toothaches often interfered with their sleeping, eating, and talking, as well as their ability to perform normal activities related to their job, housework, or other regular social functions. These results have further implications for the quality of life of low-income populations that are unable to access dental care. These effects are consistent with previous studies (7, 8, 17, 24). Additional reported effects of toothache pain that were not previously well documented included anxiety, mood changes, and depression. It is not possible to quantify, but the comments of many participants suggest that the intense and debilitating nature of dental pain may sometimes contribute to parental neglect or interpersonal conflicts in families who may already be under stress because of their physical and social environment. This aspect of the dynamics of toothache pain deserves further study.

Focus group participants used numerous prescription and nonprescription medications, over-the-counter products, as well as home remedies and other self-care strategies in their quest for pain relief. These findings are consistent with prior reports (7–9, 13, 19, 20). A number of participants mentioned taking drastic actions to obtain pain relief, including rinsing with caustic substances such as gasoline, kerosene, and rubbing alcohol, as well as self-extractions and extractions performed by nondentists. Self-extractions have been documented elsewhere (6) and may be more prevalent than previously realized. Needless to say, these actions represent significant health risks and highlight the continuing need for appropriate consumer education. Hispanic participants identified numerous home remedies adopted from their native countries. We are not aware that the degree to which Hispanics may depend on native remedies, write home for them, obtain them when out of the country, or travel to their home country for care has been previously documented. These issues deserve further study if the oral health disparities experienced by Hispanics are to be reduced.

The focus group participants identified a number of reasons for using home remedies and self-care strategies rather than visiting the dentist when suffering toothache pain. Financial considerations were predominant, but also included such factors as attitudes toward dentists and dental practice, problems obtaining transportation, long waiting times for appointments, and a lack of sick leave. Prayer and faith appeared to play an important role in dealing with toothache pain among many Black focus group participants. Spiritual aspects of dealing with toothache pain were not mentioned in any of the Hispanic or White focus groups. Other reports have found religious coping strategies to be particularly salient for Black patients. For example, in several studies of coping with chronic pain, African-Americans reported significantly greater use of praying and hoping relative to Whites (25, 26). In addition to turning to prayer for assistance, many participants sought help from and communicated with other individuals in their communities, including spiritual advisers, family members, neighbors, and friends. This lay communication model has

been described previously (9, 27) and often took preference over advice from dentists. It has been suggested that discussing toothache pain-related symptoms with non-dentists may represent an adaptive coping strategy (27).

Although focus group participants utilized numerous self-care strategies to deal with toothache pain, they overwhelmingly identified receiving care from a dentist as the preferable option for pain relief. This finding is consistent with prior reports (13) and presumably with the opinion of dental professionals as well. Nevertheless, the participants generally delayed seeking care from a dentist for as long as possible. Although this was particularly true of Hispanic focus group participants, it was not reflected in the written questionnaires completed prior to conducting the focus groups. The reason for this contradiction was not apparent. Thus, it appears that in general participants used self-care strategies out of their self-defined necessity, not in preference to professional dental care services. This finding is consistent with other reports that found treatment delays were not caused by misperceptions regarding the progression of toothache pain, but resulted from competing demands for scarce resources (7), or unfounded beliefs and attitudes.

Participants generally felt that toothache pain intensity was the most important determinant of whether care would be sought from a dentist. As in other recent reports, pain appeared to be considered unbearable when self-care attempts failed and/or the pain made minimal functioning impossible (20). The relationship between pain and dental services utilization is well documented (5, 18, 19). However, as reported elsewhere, seeking care was found to be a complex phenomenon, one that also included influences from past experiences with similar symptoms, family and friends, and prior contact with the dental care delivery system (17). It appears that although removing financial barriers alone may not lead to preventive dental visits, it would facilitate more prompt visits to dentists to treat toothache pain.

A word of caution is in order in interpreting these findings. The results are based on the comments of a relatively small number of low-income individuals and therefore cannot be generalized to higher-income groups or the population at large. They do, however, reflect the views of low-income Hispanic, Black, and White populations in Maryland. Culturally appropriate methods such as focus groups, focused or episodic interviews, observations, and group discussions (28) are needed to identify relevant group-specific behavioral impact and pain management strategies. This is particularly important when dealing with minority populations. Without attention to these unique factors, interventions that are developed as a "one-size-fits-all" remedy to the problem are likely to further the perpetuation of disparities in toothache pain prevalence and management, as well as their underlying causes. In addition, it is critical that practicing dentists in the public and private sector have a comprehensive understanding of the complex factors governing low-income and minority patients' use of emergency dental services. A greater appreciation of these barriers and challenges would facilitate constructive interpersonal interactions between dentists and their disadvantaged patients.

The results of this report add support to a public health research agenda which emphasizes cultural competency among practitioners, dissemination of scientific findings, increases in workforce diversity and capacity, as well as changes in perceptions about oral health and health care-seeking behaviors. Additional quantitative studies are needed to gain a more complete understanding of the extent and determinants of self-care behaviors, and to generalize these findings to other geographic regions and different minority populations.

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