

Latino oral health

A research agenda toward eliminating oral health disparities

FRANCISCO RAMOS-GOMEZ, D.D.S., M.S., M.P.H.; GUSTAVO D. CRUZ, D.M.D., M.P.H.; MARIA ROSA WATSON, D.D.S., M.S., Dr.Ph.; MARIA TERESA CANTO, D.D.S., M.P.H.; AUGUSTO ELIAS BONETA, D.M.D., M.S.D.

A 2000 report by the U.S. surgeon general found that minority populations bear a disproportionate burden of oral disease in the United States. That same year, the U.S. Census Bureau reported that Hispanics had become the nation's largest minority group. In the context of this landmark demographic shift, the Hispanic Dental Association (HDA) and the University of Puerto Rico School of Dentistry, San Juan, convened a workshop in October 2004 to develop an agenda to guide future research on Latino oral health issues and to promote collaboration in this area.

The timely dissemination of research findings will assist dental practitioners in their efforts to meet the oral health care needs of Hispanic patients.

A group of 58 health care providers, educators, academicians, researchers and policy experts examined the current state of Hispanic oral health research and identified gaps in existing data and research methods. The participants suggested three urgent priorities in each of the following research areas:

- population-based studies;
- social and behavioral sciences;
- health promotion and communications;
- gene-environment interactions;
- research training and workforce development.

Participants emphasized the importance of considering variations among subgroups within the Hispanic population in the development of study designs, data collection instruments and culturally appropriate service-delivery models. Finally, the group

Background. The Hispanic population has become the largest minority group in the United States, resulting in an increase in oral health care demands. Developing a research agenda and promoting collaboration on Latino oral health issues are crucial.

Methods. The Hispanic Dental Association and the University of Puerto Rico, School of Dentistry, San Juan, convened a workshop of health care providers and other experts to examine the current state of Hispanic oral health research and identify gaps in existing data and research methods. Participants were asked to break out into small groups to discuss research priorities.

Results. The participants discussed the following research areas: population-based studies, social and behavioral sciences, health promotion and communications, gene-environment interactions, and research training and workforce development. Participants emphasized the importance of understanding variations among subgroups within the Hispanic population in the development of future studies.

Conclusions. Participants recommended collaborative research studies to advance existing oral disease prevention and oral health promotion efforts, with a stronger focus on the development of a multidisciplinary pipeline of researchers participating in Latino oral health research to address the growing needs of this population.

Practice Implications. Building an infrastructure for research training and workforce development would supply researchers with the necessary tools to develop new studies that could affect the overall oral health of the Latino population. The translation and dissemination of these research findings will benefit clinicians by leading to a better understanding of new trends and specific population needs, as well as appropriate targeted interventions.

Key Words. Hispanics; Latinos; oral health; access to care; workforce diversity.

recommended collaborative and multidisciplinary research studies to advance existing health promotion efforts, as well as a stronger focus on the development of a multidisciplinary pipeline of researchers interested in Latino oral health research.

BACKGROUND

Hispanics are not only the nation's fastest-growing minority group, but also its largest.¹ According to the 2005 U.S. Census, Hispanics of all races represent 14 percent of the U.S. population (about 41 million people).² Undocumented immigrants are estimated to add an additional 11 million to that figure.³ There are now more Hispanics living in the United States than in Central America. For the purpose of this report, the terms "Hispanic" and "Latino" will be used interchangeably.⁴

Recently updated data from the U.S. Census Bureau reveal disturbing trends. One-half of the Hispanic population in the United States is younger than 27 years, and 20 percent of all children younger than 5 years are Hispanic.² Young Hispanics are significantly less likely to finish high school than are their white, Asian or African-American cohorts. As adults, they also are more likely to be poor, unemployed and uninsured. Poverty rates for Hispanics are two to three times the rates for whites.⁵ Poverty rates in communities on the border between the United States and Mexico are even higher.

These economic and educational disparities are acutely evident in the realm of oral health. Twice as many Hispanic children are likely to have untreated dental caries as are non-Hispanic white children.⁶ According to 1988-1991 data from the Third National Health and Nutrition Examination Survey (NHANES III), 10 percent of Hispanic children aged 8 years received sealants, compared with 29 percent of non-Hispanic white children.⁷ Oral health differences are present in the adult population as well⁸; the percentage of untreated oral disease for Hispanics (40 percent) and non-Hispanic blacks (48 percent) was nearly double that for non-Hispanic whites (24 percent) during the same period.

Aggregate data offer a compelling macro-level perspective on health and demographic trends for

the growing Hispanic population in the United States. However, these data, and the conclusions drawn from them, fail to account for the heterogeneous nature of Hispanics and their varied geographic, cultural, socioeconomic and political backgrounds. According to the 2000 Census, Mexican-Americans represented 58.5 percent of the total U.S. Hispanic population, followed by Puerto Ricans (9.6 percent), Central and South Americans (8.6 percent), Cubans (3.5 percent) and other Hispanics (19.8 percent).⁵ These percentages vary by geographic area; most health research, however, ignores the substantial differences in knowledge and behaviors between these distinct subgroups.

One recent study that produced estimates of health care access for subgroups of Hispanics by combining years of data to increase the number of subjects resulted in sample sizes that, for some subgroups of Hispanics, still were small and unreliable.⁹ That study showed that Latinos were more likely to lack access to dental care than

were non-Hispanic whites, and it revealed disparity in access among the five subgroups of Hispanics living in the United States.⁹

For example, the authors reported that the percentage of children who had never visited a dentist was highest among Mexican children (17.7 percent).⁹ A previous study also reported that Mexican-Americans have had the lowest levels of dental visits in the United States.¹⁰ Cultural differ-

ences among Hispanic subgroups, as well as different expectations regarding their dental care needs, might result in a differential in access to dental care.⁹ It is obvious that a need exists to elucidate the most important determinants of oral health status and access to care among Hispanic subgroups.

The development and implementation of an innovative and much-needed oral health research agenda for Hispanics is hindered by an academic pipeline nearly devoid of Hispanic students training to enter the science and oral/dental health fields. Although research on Hispanic issues may be of interest to non-Hispanic researchers, the downward trend in the number of Hispanics at each successive educational level

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limits the opportunities to engage Hispanic researchers in studies of oral health issues.

METHODS

The HDA and the University of Puerto Rico, School of Dentistry, convened a workshop of health care providers, educators, academicians, researchers and policy experts in San Juan, Puerto Rico, on Oct. 14, 2004.¹¹ Their primary charge was to develop a research agenda that identifies priorities and gaps in existing Latino oral health data, promotes interdisciplinary collaborations and identifies advocacy opportunities at the local, state and national levels.

In preparation for the workshop, two students conducted a literature search using MEDLINE to identify the existing body of published literature regarding the oral health of Hispanics in the United States. They restricted the search to articles that had been written in English and that included human subjects. This literature review was not designed to locate all reports that have been published regarding the oral health of Hispanics, which would be costly and resource-intensive. Instead, we attempted to depict a reasonably comprehensive image of the current state of research regarding Hispanics. We made the results available to all attendees to review before the workshop.

Before the workshop, organizers selected five areas for review in the plenary session and in small-group discussions during the workshop:

- population-based studies;
- social and behavioral sciences;
- health promotion and communications;
- gene-environment interactions;
- research training and workforce development.

The workshop began with a plenary session summarizing the Latino population and related health trends for the first four areas. The last area did not involve a formal presentation in the plenary session. Workshop participants were asked to join one of four small groups (with groups 2 and 3 combined into one larger group) for discussion of research needs and priorities.

The small groups used a nominal group process¹² to identify research gaps, priorities and strategies that should be part of the research agenda. Three main questions were posed to each group to help elicit themes:

- What other studies or resources are you aware of that describe the current reality of research on this topic? What would you add in terms of other

applicable studies, resources or strategies?

- Based on the research summary presented, what are the gaps, data issues and resource needs that must be addressed? What do we still need to know?

- What research priorities, resources or strategies should be part of a Latino research agenda?

Each small discussion group had a moderator, a co-moderator and a note taker. At the end of the discussion period, the moderator of each group presented a summary of topics generated in the groups. A general discussion followed the group presentations. An overview of the workshop proceedings is available on the HDA Web site (a comprehensive description of the workshop proceedings is scheduled to be available online in the near future).¹¹

POPULATION-BASED STUDIES

The main sources of national data about Hispanics are NHANES, the National Health Interview Survey (conducted by the National Center for Health Statistics [NCHS] and the Centers for Disease Control and Prevention [CDC]) and the Medical Expenditure Panel Survey (MEPS), also collected by NCHS/CDC.

National health surveys and national census data shed light on important macro health issues affecting Hispanics. However, these data rarely take into account the significant diversity that characterizes America's Hispanic population. Only one published national survey focused on the specific health issues of the Latino population: the Hispanic Health and Nutrition Examination Survey (HHANES). This study, conducted from 1982 to 1984, included representative samples of the three main subgroups of Latinos aged 6 months to 74 years in the United States, Mexico, Cuba and Puerto Rico. It is worth pointing out that this survey was completed when the Hispanic population in the United States was roughly 10 percent of its current size.¹³

In general, existing national surveys have been of limited scope, preventing the examination of epidemiologic relationships. For example, utilization of oral health care cannot be fully explored in studies that examine only a few determinants (such as Hispanics of low socioeconomic status). Also, most measures of utilization of oral health care use "dental visit" as a surrogate, which would include all types of dental visits (for example, routine examinations, restorative procedures, emergency care and preventive services).

Thus, a higher visit estimate does not necessarily mean better oral health; instead, it may indicate the need for more dental care to improve oral health status.⁹

Other available Hispanic oral health data pertain to investigator-initiated research that uses convenience samples, and the research is of limited scope. Use of convenience samples results in a lack of incidence data, and these studies are not multidisciplinary and do not evaluate oral health in the context of general health or as a comorbidity for other major health conditions. Because measurement methods, outcome definitions and choice of risk factors or variables differ from study to study, the opportunities to draw useful comparisons are limited. Currently, research into Hispanic oral health lacks adequate validation and follow-up of previously published research that could strengthen research results and facilitate drawing valid conclusions.

Given the marked differences among U.S. Hispanics according to specific characteristics such as country of origin, geographic location, length of residence, immigration status, race, cultural background and language ability, the issue of lumping versus splitting data is relevant.¹⁴ “Splitting” refers to separating subpopulations of Latinos into smaller, specific groups according to the above characteristics. Although lumping people from different countries of origin into an overall Latino category makes it easier to reach sample sizes that are representative of the entire population, increases the power for statistical comparisons with other population groups (such as whites and blacks not of Hispanic origin) and is less costly than seeking out subpopulations, it does not reveal differences between subpopulations.

SOCIAL AND BEHAVIORAL SCIENCES

Behavioral science research includes an array of collective behavioral determinants that can affect oral health and practices that lead to good oral health. Behavioral and social characteristics, such as acculturation, language ability, place of birth and immigration status, are important because they often are used to characterize Latino subpopulations. Other behavioral variables are equally relevant, such as cultural

values, cultural attitudes, health beliefs, health knowledge, health literacy, perceived need for care, self-rated health, fear, social support, generational information, community characteristics, geographic location, migrant-worker status and source of regular health care.

Acculturation typically is defined as the process by which an individual or a group adapts to a new culture. It is customarily measured as the changes produced in language¹⁵ and is especially important in research on Hispanic populations. Studies of the effects of acculturation on oral health among Hispanic populations consistently show that acculturation is a predictor of better oral health, increased utilization of oral health services and a more positive self-rated oral health.¹⁶⁻¹⁸ Levels of oral disease, such as periodontal disease levels¹⁶ and percentage of decayed teeth,¹⁸ have been found to be higher in Hispanics

with low acculturation. Acculturation and language ability have been shown to affect not only whether a group has access to health care—including oral health care—but also whether its members seek treatment.^{19,20}

Most studies of behavioral determinants of utilization of health care services or determinants of oral health status among Hispanics have been small, local studies based on convenience samples of specific

targeted subgroups, such as elderly Hispanics in New York City,²¹ children in California^{22,23} or Washington, D.C.²⁴ or migrant workers in southern Illinois,²⁵ although some variables have been examined in larger national surveys like HHANES. Without consensus on standardized controls or measurement methods, it is difficult to compare these studies or quantify disparities. Also challenging is the issue of oral health surveillance, particularly as it pertains to the selection of characteristics to be targeted and followed up, with the ultimate goal to improve health outcomes among Hispanics.

However narrow in scope they may be, these studies shed light on a complex array of utilization-determinant variables that demand attention, including the availability of health insurance, parental beliefs and attitudes, folk medicine practices, immigration status, acculturation, education, lack of perceived need for health

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care, access to a stable source of care, household structure, age at immigration and cultural values. These studies serve to highlight the unique characteristics of Latino subpopulations that have not been examined adequately in national surveys.

An important issue relevant to behavioral science research among Latino populations is the development and validation of culturally appropriate instruments to produce valid and reliable studies. This is particularly important when studying different racial/ethnic, age and geographic groups at different points in time. In the area of Hispanic oral health research, few efforts have been reported^{16,17,26} regarding validation of oral health-related instruments.

HEALTH PROMOTION AND COMMUNICATIONS

It is important to understand the pathway to care experienced by Latinos to determine key barriers to care and preventive services. Because a major obstacle to treatment is lack of awareness of available oral health services and lack of oral health knowledge,²⁷ communication processes with Latinos—that is, processes designed for Latinos with assistance from Latinos²⁷—are of utmost importance for implementing outreach, educational and preventive measures and treatments that will actually reach them.

Language barriers have been identified as negatively affecting Latinos' pathway to health care.^{28,29} Health information in Spanish is needed to reach the one-third of Hispanic Americans who are most likely to use Spanish as their primary language.²⁷ Because Latinos tend to seek less information both before and after being diagnosed with a particular health condition,²⁷ increased efforts are needed in the areas of culturally and language-appropriate health promotion, communication and outreach,³⁰ including an emphasis on oral communication instead of relying on distribution of written health information.³⁰

Research shows that Hispanics want more information about health and are interested in the health care issues relevant to Latinos,^{26,27} which offers a good opportunity to involve them in their health care.²⁷ The provision of language-appropriate information is likely to ensure follow-up and compliance among Hispanic patients. Because of perceived unequal status between Hispanic patients and physicians, Hispanics report more difficulty with communication and

greater levels of intimidation with their physicians than do non-Hispanic whites.³¹

Strategies to improve Latino health outcomes include community-based participatory research approaches^{32,33} such as community mobilization, health programs that involve the community^{34,35} and development of culturally appropriate approaches and materials through the use of focus groups.^{26,36,37} Effective interventions with Hispanic populations have included the use of peer promoters or “promotores de salud,”³⁸⁻⁴⁰ use of case managers,^{41,42} use of support groups that promote healthy lifestyles⁴³ and the incorporation of cultural values such as familism in the intervention activities.^{27,44}

GENE-ENVIRONMENT INTERACTIONS

The dramatic increase in the amount of genomic information in this so-called “post-genomic era” will have a tremendous impact on biomedical research and on the way medicine is practiced.⁴⁵ Thus, an array of research opportunities exists to understand gene-environment interactions in oral diseases and defects. These opportunities are relevant to Hispanic health because although Hispanics share many aspects of a common heritage, Hispanic cultures vary significantly between countries and within a country of origin. In addition, the health profiles of various Hispanic cultures are unique. For example, Puerto Ricans suffer disproportionately from asthma, HIV/AIDS and infant mortality,⁴⁶ while Mexican-Americans suffer disproportionately from diabetes.⁴⁷ Cruz and colleagues²¹ have shown that, after adjusting for income, dental caries experience in adults differs among Hispanic subgroups living in the same city.

Genes and environment do not act independently of each other; rather, the appearance or magnitude of heritability may differ with various environments.⁴⁸ Despite the tremendous variability between individual people in their response to environmental factors, certain people develop disease or are affected at different speeds or degrees of severity when challenged with environmental agents, while others remain healthy. For example, a study of 120 Hispanic families showed that many children who slept with a bottle or who had poor oral hygiene habits were affected by early childhood caries (ECC), while some remained unaffected by ECC, suggesting that other factors may affect the expression of this disease.⁴⁹ Twin studies have shown that

genotype is equally as important as the environmental component in the manifestation of dental caries.⁵⁰⁻⁵²

In terms of dental caries, hereditary factors include pit-and-fissure morphology, enamel structure and composition, tooth eruption time and sequence, salivary flow rate and composition, arch form, dental spacing, immunological function and dietary preferences.^{53,54} We can conclude from this list that a large number of genes are involved in the development and expression of dental caries, as well as possibly in patients' response to treatment.

Heredity is believed to play an important role in susceptibility to a variety of types of periodontitis,⁵⁴ although most adults exhibit signs of periodontal or gingival diseases, with people of lower socioeconomic status having more severe periodontal disease, regardless of age. Gingivitis, as measured by gingival bleeding, is more evident among Mexican-Americans than among non-Hispanic blacks or non-Hispanic whites, whereas early-onset periodontitis occurs twice as often in blacks as it does in Hispanics, and 10 times more frequently than in whites.⁵⁵

LATINO ORAL HEALTH RESEARCH AGENDA

In small-group discussions, the HDA workshop participants made specific recommendations for a Latino oral health research agenda (Table). Workshop participants also identified research gaps and made recommendations for advocacy and policy, such as the following:

- standardize variables related to measurement of acculturation, cultural values and language preference;
- initiate collaborations that undertake multi-disciplinary research;
- initiate studies of health status and behavioral characteristics in Hispanic countries of origin to characterize changes resulting from immigration and acculturation;
- develop longitudinal studies of subpopulations as they transition to a new culture and environment;
- develop longitudinal research on a disease prevention management model that begins at the point of nondisease rather than when disease has

already occurred, linking risk assessment to oral health promotion and appropriate data surveillance systems;

- collect quantitative data using anthropological and ethnographic approaches;
- collect data on congenital traits differentiated by race/ethnicity;
- include racial/ethnic information, as well as oral health variables, in medical and dental studies of twins;
- initiate studies to understand differences between Hispanic subgroups using appropriate comparisons of biological risk factors (as opposed to using whites as the conventional standard of comparison);
- initiate research to further understand workforce issues, such as the number of minority college graduates who become researchers, to identify successful strategies to encourage and

facilitate training of dental students to become researchers, to ascertain tactics to capitalize on the diversity and health disparities content of dental curricula to elicit interest in Hispanic oral health research, and to determine approaches that attract established university researchers to examine oral health disparities and Hispanic oral

Workshop participants recommended that the Hispanic oral health agenda be integrated with the overall oral health research agenda at the national, state and local levels.

health issues.

To address the aforementioned gaps, workshop participants made the following advocacy recommendations:

- secure additional federal funding for Hispanic research, including support for a national study of Hispanic health that includes oral health (rather than relying on NHANES data);
- integrate the Hispanic oral health agenda with the overall oral health research agenda at the national, state and local levels;
- promote the collection of data pertaining to biological and environmental factors affecting oral health by studies already in place;
- conceptualize and use appropriate models for the integration of oral health into primary care;
- seek funding to support leadership in workforce and training issues;
- propose tenure guideline revisions to promote incentives for student mentoring;
- propose specific research regarding the dissem-

TABLE

LATINO ORAL HEALTH RESEARCH AGENDA.	
RESEARCH AREA	DESCRIPTION OF RECOMMENDED RESEARCH
Population-Based Studies	
Multidisciplinary integration	Design integrative oral health studies that involve collaboration with existing medical studies on comorbidities, such as obesity, diabetes, HIV, cardiovascular disease and oral cancer
Preventive model	Collect quality core data to support a disease prevention management model that focuses on risk assessment, behavioral variables and effective interventions
Infrastructure development	Develop an infrastructure to coordinate research related to health issues involving Hispanics, promote mentorship of Hispanics and non-Hispanics, and provide incentives to educators/researchers to invest time in mentoring
Social and Behavioral Sciences	
Behavioral and cultural factors	Define “culturally influenced risk factors” and formulate research that will facilitate the characterization of those risk factors; promote research into behavioral factors that are relevant to Hispanic populations, such as acculturation, place of birth, language ability, immigration status, employment status and generational information
Standardized, validated instruments	Validate and standardize instruments for Latino populations, including the measurement of oral health knowledge, opinions and practices, as well as other behavioral characteristics
Multidisciplinary integration	Design integrative oral health studies that involve collaboration with existing medical studies on comorbidities such as obesity, diabetes, HIV, cardiovascular disease and oral cancer
Health Promotion and Communications	
Model development	Study the best methods for development and dissemination of oral health information for patients, communities and health professionals
Community-based participatory research	Promote community-based participatory research
Language effects	Investigate language barriers and their effect on communication and utilization of health services by Hispanic populations and subgroups
Gene-Environment Interactions	
Biological risk factors	Identify and characterize biological risk factors and biomarkers that indicate the progression of dental diseases in Hispanic populations and subgroups
Host and environmental pathogenicity	Elucidate host and environmental factors that affect the transmission and pathogenicity of microbial flora in Hispanics
Treatment consequences	Study host and environmental interactions that affect treatment responses in Hispanics
Research Training and Workforce Development	
Strengthen educational pipeline	Examine and define the academic pipeline of multidisciplinary oral health researchers who have an interest in advancing the health of Hispanics
Nurture academic interests	Promote research careers focused on the health of Hispanics through student and faculty mentorships
Deploy task force	Form a task force to address research training and workforce deficits, including the development of a multidisciplinary pipeline of oral health researchers interested in mentorship and advancing the health of Hispanics; the Hispanic Dental Association should lead the effort to pursue federal funding to support the work of this task force

ination and translation of research findings in a culturally and linguistically appropriate manner; — translate research findings specifically for policy development and advocacy recommendations.

DISCUSSION

In this report, we described the development of a Hispanic oral health research agenda that is consistent with the goals of Healthy People 2010⁵⁶ and with the NIDCR's plan to eliminate oral health disparities.⁵⁷ As both of these documents emphasize, the Latino oral health research agenda is based on collaborative, multidisciplinary research that allows researchers to advance oral health knowledge about relationships between common risk factors and comorbidities among different populations. For example, it would be useful to enhance our understanding of how race/ethnicity accounts for differences in the connection between oral health and systemic conditions, such as stroke, atherosclerosis, lung disease, diabetes, preterm labor, low birth weight and inner-ear infections.

We should point out that some of the recommendations made by workshop participants regarding oral health research are not unique to Hispanics. Thus, Latino health research needs to go hand in hand with efforts from the dental research community at large.

Future Hispanic oral health research. All of the workshop discussion groups concurred that future Hispanic oral health research should examine generational, migrational and cultural influences on oral health. Studies should examine risk and protective factors (that is, behavioral practices) determined by culture and ethnic origin, as well as factors inherently associated with socioeconomic status. Workshop participants also spoke of the need to disentangle the effects of race/ethnicity and socioeconomic status on the oral health status of Hispanics to elucidate factors that have not been investigated traditionally. These include health literacy, health perceptions and expectations, cultural differences, knowledge of health services and risk behaviors, financial stress, pensions or other benefits that may affect utilization of health care services, working conditions, migration, discrimination, and family and social support.

Research tool kit. To advance Hispanic oral health research, workshop participants also recommended the development of a tool kit that

would guide investigator-initiated research and increase the comparability of studies of U.S. Hispanics. Such a tool kit would describe core outcome measures, define social and behavioral variables and their potential breakdown categories for analyses, and propose population sampling frames and the use of valid, standardized instruments. It also would provide practical guidance for making consistent decisions when designing studies (such as lumping or splitting sample populations based on geography or region, cultural background and other characteristics). Generating valid and useful health data about Latinos in the United States requires conceptual and methodical attention to particular features of this population, which is characterized as being diverse, ever changing and on the rise.⁵⁸

Genetic research opportunities. The workshop groups discussed several genetic research opportunities. A core recommendation was that genetic research should go hand in hand with epidemiologic studies of oral diseases in racial/ethnic groups, and that studies should consider the different socioeconomic statuses of the relevant subgroups. Future research should consider the development and assessment of diagnostic tests for use with groups exhibiting health disparities, the identification of disease surrogate end points for clinical trials, utilization of smaller sample sizes and shorter trials⁵⁹ and the applicability of field testing of emerging technologies (such as microarrays) to evaluate gene response to environmental stressors⁶⁰ in different Hispanic subgroups.

Each discussion group at the workshop expressed concern about the lack of dentists serving the Hispanic population, as well as the limited number of researchers focused on Latino oral health. At the heart of this concern is the missing infrastructure for research training and workforce development, as well as the lack of support for Hispanic faculty mentorship.

We must reach a consensus about important health determinants relevant to culturally influenced risk factors and characteristics of Hispanic subpopulations. The lack of standardization of research methods to measure, collect, compare and analyze data regarding oral health determinants and outcomes results in missed opportunities for appropriate health surveillance. Lack of consensus regarding a conceptual model hinders the health community's ability to design, implement and disseminate policy recommendations

that foster appropriate outreach and preventive treatment interventions to improve access to care and the oral health of Hispanics in the United States.

CONCLUSIONS

We expect the release of the first Hispanic oral research agenda and the identification of current gaps in knowledge and in the use of evidence-based approaches to stimulate needed new research, as well as to forge collaborations to improve methodology. The elucidation of the effects of race/ethnicity and socioeconomic status on the oral health of Hispanics and the use of standardized research methods are needed to address the oral health needs of this population in a substantial manner. Generating data for making decisions and setting policies, as well as for developing culturally appropriate outreach, preventive and treatment interventions are key steps to improving Latinos' access to oral health care. The timely dissemination of Hispanic research findings into practice will assist dental practitioners in their efforts to meet the oral health care needs of Hispanic patients. ■

Dr. Ramos-Gomez is an associate professor, Department of Orofacial Sciences, Division of Pediatric Dentistry, University of California, San Francisco, Center to Address Disparities in Children's Oral Health, 707 Parnassus Ave., Box 0753, Room D1021, San Francisco, Calif. 94143-0753, e-mail "ramos@itsa.ucsf.edu". Address reprint requests to Dr. Ramos-Gomez.

Dr. Cruz is an assistant professor, Director of Public Health and Health Promotion, Department of Epidemiology and Health Promotion, New York University College of Dentistry, New York City.

Dr. Watson is the research director, Health Clinics, Spanish Catholic Center, Washington.

Dr. Canto is the director, Epidemiology Research Program, Clinical Research Branch, Division of Clinical Research and Health Promotion, National Institute of Dental and Craniofacial Research, National Institutes of Health, U.S. Department of Health and Human Services, Bethesda, Md.

Dr. Boneta is a professor and dean of research, University of Puerto Rico, School of Dentistry, San Juan.

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