

# Job Satisfaction and Relocation Desire among Pediatric Dentists in Puerto Rico

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**Objective:** To determine the levels of satisfaction, license status, and desire to relocate of pediatric dentists in Puerto Rico.

**Methods:** Pediatric dentists in Puerto Rico were surveyed via telephone interviews. Data were collected through a 34-item questionnaire that explored satisfaction as related to income, continuing education, professional goals, and participation in the *Mi Salud* program. Frequencies, chi-square analysis, and Fisher's exact 2-tailed t-test were utilized to determine the relationships between satisfaction and the demographics of the pediatric dentists.

**Results:** Sixty pediatric dentists participated in our survey—77% of the total number of pediatric dentists practicing in Puerto Rico. Overall, 65% of the participating pediatric dentists expressed dissatisfaction. Male pediatric dentists were more dissatisfied than their female colleagues were. Most pediatric dentists participating in *Mi Salud* expressed dissatisfaction. When asked about whether or not they had considered migrating to the mainland, those who were dissatisfied were more likely to have considered that idea than were those who were satisfied. Overall, 57% of the pediatric dentists comprising our sample had considered relocating to the continental United States.

**Conclusion:** In general, the pediatric dentists who participated in our study expressed dissatisfaction in most areas except when asked about their ability to reach professional goals. Determining the levels of satisfaction of health care providers is important in the maintaining of an adequate workforce. As current levels of dissatisfaction are high, it is important to determine what variables are related to satisfaction so that corrective measures can be taken to ensure that retention rates improve, thereby maintaining an adequate pediatric dental workforce. [*PR Health Sci J* 2015;34:201-207]

*Key words:* Pediatric dentistry, Manpower, Supply and distribution, Satisfaction, Puerto Rico

In the 1990s, multinational corporations ventured into Latin American countries, diffusing the concept of managed care (1). Puerto Rico (PR), a self-governing commonwealth that is associated with the United States (US), sought to modernize its health care system with the implementation of this model. Prior to this rearrangement, the medically indigent members of the Puerto Rican population relied exclusively on the government for their health care needs, accessing that care through a network of community health centers, hospitals, and emergency rooms. Dental services were provided free of charge at community health centers regardless of the patient's ability to pay. Under managed care, insurance companies became responsible for arranging the provision of health services for their enrolled members, either through their own providers or contracted ones. The program, called *Mi Salud* (originally, *La Reforma*), transformed PR's government from a health care provider to a health care regulator of insurance companies

contracted to deliver services to eligible beneficiaries in exchange for a monthly capitation payment (2).

From the pediatric dentists' (PDs) perspective, the new delivery model resulted in additional children with access to their services. Though as the number of insurance companies consolidated, the companies that remained exercised their market power and maintained reimbursement levels for dental services very close to 1994 levels. Once the financial viability of dental offices was jeopardized by fees that did not reflect

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operational costs as well as inflation, many dissatisfied dentists ceased their participation in the *Mi Salud* program. Therefore, improved access to dental care services, once considered one of the successes of the new health care delivery system, slowly vanished. Today the disadvantaged face multiple barriers accessing dental services, one of which includes difficulty finding a dental provider (personal communication, Dr. Noel Aymat. Former president, College of Dental Surgeons of Puerto Rico). Dissatisfaction with the *Mi Salud* plan among dentists is evident. Dentists have protested before Puerto Rico's Senate, requesting increases in the reimbursement levels, which have not been adjusted since 1994 (3).

Satisfaction among dental practitioners has been assessed by different authors. Chambers summarized the results from studies conducted in the 70s, 80s, and 90s, assessing satisfaction and dissatisfaction with dental practice (4). In the past decade, different authors have studied this issue at national and regional levels. Most studies found levels of satisfaction ranging from good to very good (5–9). Variables identified as predictors of satisfaction included income, professional time, and personal time, while variables related to dissatisfaction encompassed lack of autonomy, level of stress and time pressure, lack of appreciation, amount of personal time, delivery of care, and business operations. Satisfaction with third-party payers has been assessed by multiple authors—in particular, the role of managed care and provider participation and satisfaction (10–13). Levels of dissatisfaction among providers participating in government-subsidized programs are lower than such levels are for non-participating providers (14–16).

In the US, government-subsidized dental coverage represents an important source of patients for dental practitioners. In 2004, approximately 12% of US adults and 26% of US children had public dental coverage (17). Unfortunately for many children, the availability of dental insurance does not translate into actual care. For instance, in 2009, out of 29 million children, only 44% received any dental service (18). Lack of access for the Medicaid population is partially explained by the deficiency of participating dental providers. Studies have shown that the low level of participation and high rates of dissatisfaction are explained by low reimbursement levels, the lack of compliance of patients, the need for pre-authorization, the denial of payment, etc. (19–21). In Puerto Rico, *Mi Salud* is the largest payer of medical and dental services. As of July 1, 2010, *Mi Salud* provided health care coverage to over 1.5 million Puerto Ricans, or 37.5% of the island population (22). Because of their dissatisfaction with the program, many pediatric dental providers have opted out of the program. Our previous publication revealed that in 2011, while 100% of PDs participated in private insurance programs, only 65% did in the *Mi Salud* plan (23).

A dentist's practice location is determined by different variables, including geographic preference, employment opportunities, the location(s) of training programs, lifestyle, and family-related issue. (24, 25). Particularly important predictors of location include population density and per capita income

(25–27). Therefore, areas that are sparsely populated or that have a declining economy experience difficulties attracting and retaining dentists (28, 29). Our previous publication determined that beginning in the early 1990s, the influx of PDs stalled, while the migration of these professionals to the US mainland increased, allegedly due to the implementation of its managed-care competition model (30).

This paper is the last of a series of 3; all of which seek to present a comprehensive view of the pediatric dentistry workforce in Puerto Rico (23, 30). As part of the study, 3 objectives were planned: 1. develop a demographic and practice profile of the PD in PR; 2. assess PDs' geographic distribution as it relates to demographic and socioeconomic variables; and 3. determine those individuals' levels of satisfaction, license status, and desire to relocate. Our previous publications presented the findings related to the first and second objectives (23, 30). The current manuscript focuses exclusively on the third objective.

## Materials and Methods

This study was approved by the University of Puerto Rico (UPR) Institutional Review Board (IRB). Data were collected through a 34-item questionnaire specifically designed for this study. Information on survey sample design, questionnaire development, and data collection was presented in one of our previous publications (23). The questionnaire captured information on 3 subjects: first, socio-demographic characteristics; second, practice profile; and third, satisfaction, license status, and desire to relocate. Information relevant to the third subject was captured through 11 questions. The questionnaire was pretested for comprehensibility, reliability ( $\alpha = 0.92$ ), and content validity. The collected data were entered and tabulated in a spreadsheet using Excel 2010® (Microsoft Office 2010) and exported for descriptive and inferential analysis using SPSS V 19® (IBM). Satisfaction as related to income, continuing education opportunities, ability to reach professional goals, participation in the *Mi Salud* program as well as overall satisfaction were measured utilizing a 5-item Likert scale ranging from 1 (very satisfied) to 5 (totally dissatisfied). Given the small sample size ( $n = 60$ ), the scale was reduced to 3 items by merging very satisfied with satisfied, and dissatisfied with totally dissatisfied. Non-participation in *Mi Salud* was assessed by using variables reported in the literature as predictors of non-participation in government-subsidized programs (21–23). Utilizing overall satisfaction as our dependent variable, we attempted to identify variables associated with satisfaction and dissatisfaction, including gender, years in practice, training program (UPR vs. mainland), hours worked per week, participation in *Mi Salud*, licenses held on the mainland, and the desire to become licensed on the mainland. We utilized frequencies and chi-square analysis to determine whether significant differences existed between satisfied and dissatisfied PDs, by multiple variables. Fisher's exact 2-tailed t-test was performed to test whether significant differences in

terms of migration and gender existed between satisfaction levels. The level of significance was set at  $P < 0.05$ . The desire to migrate, current license status, and the desire to become licensed in a different state were captured through questions with dichotomous answers. Variables exploring why migration was being considered—when such was the case—were also considered. The states where PDs were currently licensed or would consider becoming licensed were captured through open-ended questions.

### Results

A total of 60 PDs participated in our survey. This figure represents 77% of the total number of PDs practicing in PR. Most of the participating PDs seemed to be dissatisfied; e.g., 62% indicated they were dissatisfied with their income, 66% were dissatisfied with the *Mi Salud* program, and 65% expressed overall dissatisfaction. About half of those participating in our survey were dissatisfied with continuing education opportunities, but 32% were neither satisfied nor dissatisfied. On the other hand, when asked about their ability to reach their professional goals, 73% expressed satisfaction (Table 1).

**Table 1.** Satisfaction and income, continuing education, goals, and *Mi Salud*

		Satisfied	Neutral	Dissatisfied
Overall Satisfaction	n	9	12	39
	%	15%	20%	65%
Income	n	14	9	37
	%	23%	15%	62%
Continuing Education	n	12	19	29
	%	20%	32%	48%
Ability to Reach Goals	n	44	8	8
	%	73%	13%	13%
<i>Mi Salud</i>	n	3	10	25
	%	8%	26%	66%

Male PDs were more dissatisfied than female PDs were, 72% and 62%, respectively, while those PDs completing their residency program on the mainland were more dissatisfied than those trained at UPR, 82% vs. 55%, respectively. Regardless of the number of years practicing pediatric dentistry, all respondents tended to be more dissatisfied than satisfied. However, those who had practiced from 1 to 10 years and from 31 to 40 years were more dissatisfied than those in the other groups. Concerning the number of hours worked per week, all participants were more dissatisfied than satisfied. However, those working the longest hours, 31 to 40 hours per week, were more dissatisfied than those working 20 hours or fewer (Table 2).

Dissatisfaction with reimbursement mechanisms was similar regardless of whether or not a given PD participated in *Mi Salud*. Only 38 out of the 60 sampled PDs participated in the *Mi Salud* program. More male PDs were dissatisfied with the *Mi Salud*

**Table 2.** Satisfaction, by gender, training program, years in practice, hours worked, reimbursement mechanisms, current license status, and US mainland–licensing consideration

	n	Satisfied	Neutral	Dissatisfied
<b>Gender</b>				
Male	18	3 17%	2 11%	13 72%
Female	42	6 14%	10 24%	26 62%
<b>Training Program</b>				
UPR Trained	38	6 16%	11 29%	21 55%
Mainland Trained	22	3 14%	1 5%	18 82%
<b>Years in Practice</b>				
1 to 10	13	1 8%	3 23%	9 69%
11 to 20	22	4 18%	5 23%	13 59%
21 to 30	14	3 21%	2 14%	9 64%
31 to 40	11	1 9%	2 18%	8 73%
<b>Hrs. Worked/Week</b>				
<20	12	2 17%	3 25%	7 58%
21 to 30	16	4 25%	2 13%	10 63%
31 to 40	32	3 9%	7 22%	22 69%
<b>Reimbursement Mechanisms</b>				
All Mechanisms	38	6 16%	7 18%	25 66%
No <i>Mi Salud</i>	22	3 14%	4 18%	15 68%
<i>Mi Salud*</i>				
Male	12	1 8%	1 8%	10 83%
Female	26	2 8%	9 35%	15 58%
<b>Licensed on the Mainland</b>				
No	42	8 19%	10 24%	24 57%
Yes	18	1 6%	2 11%	15 83%
<b>Considered Licensure on the Mainland US**</b>				
No	19	5 24%	2 14%	12 62%
Yes	23	0 0%	7 30%	16 70%

\*Only 38 out of the 60 sampled pediatric dentists participated in *Mi Salud*. All reimbursement = private insurance, self-payer, and *Mi Salud*. No *Mi Salud* = private insurance and self-payer. \*\*Considered licensure; satisfied vs. dissatisfied, significant at  $p = 0.044$

program than were female PDs, 83% vs. 58%, respectively. Regarding reimbursement mechanisms accepted in their offices, PDs were equally dissatisfied regardless of their participation, or lack thereof, in *Mi Salud*. Of those PDs participating in *Mi Salud*, most expressed dissatisfaction. Those who did not hold a

license in the mainland but had considered obtaining one were more dissatisfied than were their counterparts who had not so considered (70% vs. 62%, respectively;  $p = 0.044$ ) (Table 2).

When PDs were asked about the reasons for not participating in the *Mi Salud* program, 100% indicated low compensation, 68% indicated delays in payment, 55% responded feeling mistreated by insurance companies, 32% claimed lack of patient compliance, and other reasons were stated by 50% (Table 3). Concerning reasons for considering migration, most PDs claimed personal safety concerns (88%), followed by financial reasons (85%), quality of life (85%), and professional opportunities (76%) to be the primary rationales for so considering (Table 4). (The total number of PDs exceeds 60 because they were asked to mention all the reasons that they had for considering migrating.)

**Table 3.** Reason(s) for not participating in *Mi Salud* (n = 22)

Low Fees	Delayed Payment	Poor DDS Treatment	Patient Compliance	Other
22	15	12	7	11
100%	68%	55%	32%	50%

**Table 4.** Reasons for considering migrating to the continental US

Financial	Family	Safety	Quality of Life	Prof. Opportunities	Other
29	12	30	29	26	2
85%	35%	88%	85%	76%	6%

**Table 5.** Satisfaction, by migration consideration

Considered migration*	n	Satisfied	Neutral	Dissatisfied	
No	26	8	3	15	
		43%	31%	12%	58%
Yes	34	1	9	24	
		57%	3%	26%	71%
<b>Male</b>					
No	8	2	1	5	
		50%	25%	13%	63%
Yes	8	1	1	6	
		50%	13%	13%	75%
<b>Female**</b>					
No	18	6	2	10	
		43%	33%	11%	56%
Yes	24	0	8	16	
		57%	0%	33%	67%

\*Fisher's exact 2-tailed t-test,  $p = 0.009$ ; \*\*Fisher's exact 2-tailed t-test,  $p = 0.018$

When asked whether or not they had considered migrating to the mainland, those who were dissatisfied were more likely to have considered that idea than were those who were satisfied (71% vs. 3%, respectively;  $p = 0.009$ ). Although, there were no statistical differences among males, females who were dissatisfied were more likely to have considered migration than satisfied females (67% vs. 0%, respectively;  $p = 0.018$ ) (Table 5). Concerning licensing on the mainland, for those

PDs already holding licenses in mainland states, the largest number of them were licensed in New York, followed by Texas, Pennsylvania, Florida, and Massachusetts. Among PDs considering mainland licensure, most contemplated Florida, followed by Texas, California, Pennsylvania, and New York as potential destinations. (Table 6).

**Table 6.** States where licenses are held or that have been considered as possible destinations

State	License held	License considered
NY	5	3
TX	4	9
PA	3	3
FL	2	10
MA	2	2
VA	1	2
NC	1	1
OH	1	
CT	1	
OK	1	
CA		4
GA		2
WI		1
MN		1
KY		1
SC		1
WA		1

## Discussion

In general terms, the PDs participating in our study expressed dissatisfaction in most areas except when asked about their ability to reach professional goals. As levels of dissatisfaction are high, it is important to determine what variables are related to satisfaction so that corrective measures can be taken to ensure improved retention rates and the maintenance of an adequate pediatric dental workforce.

Similar to previous studies, we found that the number of hours worked and income were both associated with dissatisfaction among PDs (6, 7, 14). Of those PDs participating in *Mi Salud*, 65% indicated dissatisfaction with the government-subsidized program. While we did not ask for additional comments, we believe the reasons indicated for non-participation (e.g., low reimbursement rates coupled with delays in reimbursements as well as the generally poor treatment of the providers) may explain their dissatisfaction. Patients' lack of compliance was also reported, though it was the reason least frequently mentioned by PDs for non-participation. These issues have been previously documented in the literature (31-33).

Different to previous publications (7, 34), we found that the number of years that any given PD had in practice negatively influenced self-reported job satisfaction. This finding was quite interesting, as we assumed that individuals who had been in practice the longest would be relieved of the financial burdens



associated with starting a practice as well as student loans. In addition, we found that levels of dissatisfaction were second to the highest among those individuals who had been in practice for the least number of years. It has been previously documented that younger dentists face increased levels of stress, which may explain our findings (35).

More male than female PDs were dissatisfied with *Mi Salud*. As reported in our previous publication (23), male PDs were on average 12 years older than their female counterparts. Therefore, they may have profited when managed care was implemented in the early 90s and reimbursement fees were high. Since then, reimbursement levels have barely been adjusted and do not reflect inflation, higher living expenses, or increased operational costs. While earnings for older PDs may have declined over the years, younger female PDs may have joined the workforce at a point when financial expectations and rewards were different. It is also possible that more male than female PDs are heads of families, which would tend to make the financial responsibilities and other related pressures of the former greater than they are for the latter.

Dissatisfaction among PDs trained on the mainland was higher than it was for those trained at UPR (82% vs. 55%, respectively). We hypothesize that the former may have a better knowledge of the marketplace and higher wages on the mainland. According to the American Dental Association, PDs' incomes have increased steadily as demand for their services continues to increase; in 2009 the average net income of a PD on the mainland was above \$300,000 (36). In 2011, the Bureau of Labor and Services reported that PR dental specialists earned on average 23% less than their continental United States counterparts did, or \$136,000 vs. \$168,000, respectively (37). While this figure presents PR specialists in the aggregate, we believe that a similar earnings gap exists for PDs in Puerto Rico vs. their counterparts on the US mainland.

Results from our survey indicated that 57% of PDs had considered relocation to the continental US (30). Safety and quality of life along with income were the reasons most commonly mentioned for considering migration to the US mainland. As this manuscript is being developed, PR faces an economic recession and fiscal deficit (38). The accompanying unemployment has led to a wave of social issues and migration levels that were prevalent 10 years ago (39). While the US population increased by 9.7% between 2000 and 2010, in PR there was a decline of 2.7% during the same time period (40). Recent reports seem to confirm this trend. According to Hispanic Market Info, between 2000 and 2010, more than 300,000 Puerto Rican residents, mostly young professionals, migrated to the US, mainly because of social concerns and financial opportunities (41). A decline in the fertile population would yield lower birth rates, which would, in turn, cause declines in the pediatric population. From the PDs' perspective, this would result in diminished demand for their services and decreased revenues. Given the demographic and economic trends on the mainland, an exodus of PDs could occur. The

prevalence of dental disease in PR is much higher than it is in the continental US (42-44). Therefore, a mass departure of these professionals could lead to an oral health crisis.

Some benefits have come along with the implementation of a managed-care model in PR. For instance, as of December 31, 2005, the government-subsidized health plan provided health care coverage to over 1.5 million disadvantaged Puerto Ricans (22). However, we argue that artificially low fees hinder compliance with federally mandated standards to ensure access to care for children. Income is a strong predictor of satisfaction (4-6, 9). Dissatisfaction translates into limited access to providers and, as a result, poor oral health outcomes (45).

Lee's (1966) theory of migration divides factors resulting in migration into 2 groups: push and pull factors. Push factors are those that are unfavorable about the area where one resides, while pull factors are those that attract one to another area (46). Push and pull forces that drive health care-worker migration include economic, demographic, political, and professional factors. Economic and demographic projections for PR indicate that the pull and push forces that drive migration of PDs to the mainland will remain, and may possibly increase. Market forces are driving pediatric dentists to the mainland, i.e., increased reimbursement levels and income, implementation of the Affordable Care Act, and a growing need for bilingual providers (25, 30). The latter is particularly important, as the demographic growth of the Latino population exceeds that of non-Hispanic whites, who now account for a minority of births in the US (47). PDs mentioned New York, Texas, and Florida as states where they were licensed or may seek licensure. The Latino population represents an important demographic group in these states. In fact, in a white paper on workforce, the American Academy of Pediatric Dentistry stated that the demand for pediatric dental services in California, Texas, and Florida would dramatically increase given the growth of the Latino population (48).

Push factors are not limited to economic considerations; i.e., health care workers may leave their countries for professional reasons, too. However, in our study, 73% of PDs expressed satisfaction with their ability to reach goals. We believe that in general terms, PDs in PR are highly committed to improving the oral health of Puerto Rican children. Despite low levels of compensation, the participation of local PDs in the publicly subsidized dental benefit program *Mi Salud* compares to that of their counterparts on the mainland, or 65% vs. 70%, respectively (23, 36). The high level of participation in *Mi Salud* may be a reflection of either the need to be a participating provider given the levels of penetration of this program or a high level of commitment to addressing the needs of disadvantaged children. Altruism is often mentioned as a reason that drives health care providers to select a particular discipline and geographic location. Altruistic goals can help in the matching of caring health care professionals to underserved communities, but this alone will not counter strong market forces. Strengthening the ability of PR to counter a potential migration of PDs will require

the addressing of both push and pull factors. The initial step is to create an environment that is an attractive place to live and work. Financially rewarding opportunities must be available in PR to offset the pull factor of opportunities on the mainland, providing viable alternatives to migration and making it a matter of genuine choice. Any workforce enhancement initiative must overcome this economic reality if it is to be successful.

## Conclusion

Ensuring that the levels of satisfaction of health care providers are high is important if an adequate workforce is to be maintained. The pediatric dentists participating in our study expressed their dissatisfaction in most areas. If career satisfaction can be enhanced, then retention rates will improve. The Puerto Rican government has an important role in ensuring that PDs considering migrating to the mainland be made to feel that remaining at home is a desirable option.

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## Resumen

**Objetivo:** Determinar los niveles de satisfacción, licenciatura y deseo de reubicación entre los dentistas pediátricos de Puerto Rico. **Métodos:** Los dentistas pediátricos en Puerto Rico fueron entrevistados vía telefónica. Información fue recolectada por medio de un cuestionario que incluía 34 preguntas relacionadas con satisfacción con ingresos económicos, educación continuada, metas profesionales, satisfacción en general y participación en el programa de *Mi Salud*. Frecuencias, análisis de chi-square y prueba t de Fisher fueron utilizados para determinar la relación entre satisfacción y características demográficas de los dentistas pediátricos. **Resultados:** Sesenta dentistas pediátricos quienes representan el 77% del número total de estos especialistas practicando en Puerto Rico participaron en nuestra encuesta. En general, 65% de los dentistas pediátricos expresaron insatisfacción. Los hombres dentistas pediátricos estaban más insatisfechos que las mujeres. La mayoría de los dentistas pediátricos participando en el programa de *Mi Salud* expresaron insatisfacción. Cuando se les pregunto si ellos habían considerado migrar a los Estados Unidos continental, aquellos que estaban insatisfechos estaban más inclinados a considerar

migrar comparado con aquellos que estaban satisfechos. En total, 57% de los dentistas pediátricos consideraron reubicarse en los Estados Unidos continental. **Conclusiones:** En general, los dentistas pediátricos que participaron en nuestro estudio expresaron insatisfacción en la mayoría de las áreas excepto cuando se les preguntó sobre su capacidad de alcanzar sus metas profesionales. Determinar los niveles de satisfacción de los profesionales de la salud es importante para mantener una fuerza laboral adecuada. Como los niveles de insatisfacción fueron altos, es importante determinar que variables están relacionadas con satisfacción para así tomar medidas correctivas que aseguren retención de los profesionales y una fuerza laboral adecuada de dentistas pediátricos.

## References

1. Stocker K, Waitzkin H, Iriart C. The exportation of managed care to Latin America. *N Engl J Med* 1999;340:1131-1136.
2. Mulligan J. *Managed Lives: Privatizing Public Health in Puerto Rico*. 1st ed; Boston, MA: Harvard University Press; 2007.
3. Rodríguez Sánchez I. Dentistas protestan en el senado. *El Nuevo Día*. November 15, 2011. Available at: <http://www.elnuevodia.com/dentistasprotestanenelsenado-1121481.html>. Accessed November 17, 2011
4. Chambers DW. The role of dentists in dentistry. *J Dent Educ* 2001;65:1430-1440.
5. Ayers KM, Thomson WM, Rich AM, Newton JT. Gender differences in dentists' working practices and job satisfaction. *J Dent* 2008;36:343-350.
6. Gilmour J, Stewardson DA, Shugars DA, Burke FJ. An assessment of career satisfaction among a group of general dental practitioners in Staffordshire. *Br Dent J* 2005;198:701-704.
7. Goetz K, Campbell SM, Broge B, Dörfer CE, Brodowski M, Szecsenyi J. The impact of intrinsic and extrinsic factors on the job satisfaction of dentists. *Community Dent Oral Epidemiol*. 2012;40:474-480.
8. Naidu R, Newton JT, Ayers K. A comparison of career satisfaction amongst dental healthcare professionals across three health care systems: comparison of data from the United Kingdom, New Zealand and Trinidad & Tobago. *BMC Health Serv Res* 2006;6:32.
9. Bates LF, Buehler AM, Boynton JR, Majewski RF, Inglehart MR. Pediatric Dentists' Job Satisfaction: Results of a National Survey. *Pediatr Dent* 2013;34:343-350.
10. Bramson JB, Noskin DE, Ruesch JD. Demographics and practice characteristics of dentists participating and not participating in managed care plans. *J Am Dent Assoc* 1997;128:1708-1714.
11. Bramson J, Noskin DE, Ruesch JD. Dentists' views about managed care: Summary of a national survey. *J Am Dent Assoc* 1998;129:107-110.
12. Brown LJ, Ruesch JD. Dentists' participation in capitation and preferred provider organization dental plans. *J Am Dent Assoc* 2000;131:1485-1489.
13. Aseltine RH Jr, Reisine S, Schilling EA, Kennedy J. Dental practice satisfaction with preferred provider organizations. *BMC Health Serv Res* 2007;15:184.
14. Luzzi L, Spencer AJ, Jones K, Teusner D. Job satisfaction of registered dental practitioners. *Aust Dent J* 2005;50:179-185.
15. Shugerman R, Linzer M, Nelson K, Douglas J, Williams R, Konrad R; Career Satisfaction Study Group. Pediatric generalists and subspecialists: Determinants of career satisfaction. *Pediatrics* 2001;108:E40.
16. Harris R, Burnside G, Ashcroft A, Grieveson B. Job satisfaction of dental practitioners before and after a change in incentives and governance: A longitudinal study. *Br Dent J* 2009;207:E4.
17. Manski RJ. Public programs, insurance, and dental access. *Dent Clin North Am* 2009;53:485-503.
18. US Department of Health and Human Services, Centers for Medicare and Medicaid Services. *Medicaid Early & Periodic Screening & Diagnostic*

- Treatment Benefit – State Agency Responsibilities (CMS-416). Available at: [http://www.cms.gov/MedicaidEarlyPeriodicScr/03\\_StateAgencyResponsibilities.asp](http://www.cms.gov/MedicaidEarlyPeriodicScr/03_StateAgencyResponsibilities.asp). Accessed November 11, 2012.
19. Venezia RD, Vann WF Jr. Pediatric dentists' participation in the North Carolina Medicaid Program. *Pediatr Dent* 1993;15:175-181.
  20. Morris PJ, Freed JR, Nguyen A, Duperon DE, Freed BA, Dickmeyer J. Pediatric dentists' participation in the California Medicaid program. *Pediatr Dent* 2004;1:79-86.
  21. Al Agili DE, Pass MA, Bronstein JM, Lockwood SA. Medicaid participation by private dentists in Alabama. *Pediatr Dent* 2007;4:293-302.
  22. United States Securities and Exchange Commission. Triple-S Management Corporation Annual Report (Form 10-K). Available at: <http://www.sec.gov/Archives/edgar/data/1171662/000095014406002885/g00487e10vk.htm>. Accessed February 26, 2013.
  23. Arevalo O, Saman D, Tabares M, Sotomayor L, Hernandez A. Pediatric Dentistry Workforce in Puerto Rico: Results of a 2011 Survey. *P R Health Sci J* 2013;32:18-24.
  24. Altieri JP, Bruce SM, Crall JJ, et al. Future of dentistry: access to care—today's vision, tomorrow's reality. *J Am Dent Assoc* 2002;133:1408-1424.
  25. Beazoglou TJ, Crakes GM, Doherty NJ, Heffley DR. Determinants of dentists' geographic distribution. *J Dent Educ* 1992;56:735-740.
  26. Bailit HL, Beazoglou TJ. State financing of dental education: impact on supply of dentists. *J Dent Educ* 2003;67:1278-1285.
  27. Brown LJ, Meskin LH, eds. *The Economics of Dental Education*. Chicago, IL: American Dental Association, Health Policy Resources Center; 2004.
  28. Saman DM, Arevalo O, Johnson AO. The dental workforce in Kentucky: current status and future needs. *J Public Health Dent* 2010;70:188-196.
  29. Osborne PB, Haubenreich JE. Underserved region recruitment and return to practice: a thirty-year analysis. *J Dent Educ* 2003;67:505-508.
  30. Arevalo O, Saman D, Tabares M, Sotomayor L, Hernandez A. Availability and Distribution of Pediatric Dentists in Puerto Rico. *J Theory Pract Dent Public Health* 2013;1:5-15.
  31. Damiano PC, Brown ER, Johnson JD, Scheetz JP. Factors affecting dentist participation in a state Medicaid program. *J Dent Educ* 1990;54:638-643.
  32. Nainar SM, Tinanoff N. Effect of Medicaid reimbursement rates on children's access to dental care. *Pediatr Dent* 1997;19:315-316.
  33. Borchgrevink A, Snyder A, Gehshan S. The Effects of Medicaid Reimbursement Rates on Access to Dental Care. National Academy for State Health Policy. 2008. Available at: [http://nashp.org/sites/default/files/CHCF\\_dental\\_rates.pdf?q=Files/CHCF\\_dental\\_rates.pdf](http://nashp.org/sites/default/files/CHCF_dental_rates.pdf?q=Files/CHCF_dental_rates.pdf). Accessed February 15, 2013.
  34. Wells A, Winter PA. Influence of practice and personal characteristics on dental job satisfaction. *J Dent Educ* 1999;63:805-812.
  35. Te Brake H, Bouman A-M, Gorter R, Hoogstraten J, Eijkman M. Professional burnout and work engagement among dentists. *Eur J Oral Sci* 2007;115:180-185.
  36. American Dental Association. 2010 Survey of Dental Practice: Pediatric Dentists in Private Practice. Chicago, IL: American Dental Association Survey Center; 2011.
  37. US Department of Labor. Bureau of Labor Statistics. May 2011 State Occupational Employment and Wage Estimates – Puerto Rico. Available at: [http://www.bls.gov/oes/2011/may/oes\\_pr.htm](http://www.bls.gov/oes/2011/may/oes_pr.htm). Accessed May 2, 2012.
  38. Public Debt on the Rise in Puerto Rico. *New York Times*. November 26, 2012. Available at: <http://www.nytimes.com/interactive/2012/11/26/business/Public-Debt-on-the-Rise-in-Puerto-Rico.html>. Accessed February 6, 2013.
  39. Alvarez L. Murder Rate and Fear Rise in Puerto Rico. *New York Times*. June 20, 2011. Available at: [http://www.nytimes.com/2011/06/21/us/21crime.html?pagewanted=all&\\_r=0](http://www.nytimes.com/2011/06/21/us/21crime.html?pagewanted=all&_r=0). Accessed February 6, 2013.
  40. US Census Bureau. Population and Housing Unit Estimates. Available at <http://www.census.gov/popest/index.html>. Accessed May 3, 2012.
  41. Census 2010 Puerto Rico: The island's population ages and loses members. Hispanic Market Info. Found at: <http://www.hispanicmarket-info.com/2011/12/23/census-2010-puerto-rico-the-islands-population-ages-and-loses-members>. Accessed May 1, 2012.
  42. Elías-Boneta AR, Psoter W, Elías-Viera AE, Jiménez P, Toro C. Relationship between dental caries experience (DMFS) and dental fluorosis in 12-year-old Puerto Ricans. *Community Dent Health* 2006;23:244-250.
  43. Elías-Boneta AR, Crespo Kebler K, Gierbolini CC, Toro Vizcarrondo CE, Psoter WJ. Dental caries prevalence of twelve year olds in Puerto Rico. *Community Dent Health* 2003;20:171-176.
  44. Puerto Rico Department of Public Health. Assessment of Oral Health Among 3rd graders in Puerto Rico, 2005 [in Spanish]. Available at: <http://www.salud.gov.pr/Programas/ProgramaMadresNinosAdolescentes/Documents/Seccion%20de%20Monitoreo/Narrativo%20de%20Sellantes%202006.pdf>. Accessed February 23, 2012.
  45. Edelstein BL. Disparities in oral health and access to care: findings of national surveys. *Ambul Pediatr* 2002;2:141-147.
  46. Lee ES. A Theory of Migration. *Demography* 1966;3:47-57.
  47. US Census Bureau. Most Children Younger Than Age 1 are Minorities, Census Bureau Reports. Available at: <http://www.census.gov/newsroom/releases/archives/population/cb12-90.html>. Accessed November 12, 2012.
  48. Davis MJ. Pediatric dentistry workforce issues: a task force white paper. American Academy of Pediatric Dentistry Task Force on Work Force Issues. *Pediatr Dent* 2000;22:331-335.