Scientific Article

Personality Types of Pediatric Dentists: Comparative Analysis and Associated Factors

Howard L. Needleman, DMD[1] • Sungyon Bang, DMD[2] • Jing Zhou, MS[3] • Jamelyn R. Johnson[4] • Bob McPeek, PhD[5] • Dionne Graham, PhD[6]

Abstract: ***Purpose:*** *The purpose of this study was to determine the personality types of pediatric dentists and associated variables.* ***Methods:*** *A survey containing the Myers-Briggs Type Indicator and demographic and practice questions was mailed to 500 pediatric dentists.* ***Results:*** *The responding 214 pediatric dentists preferred sensing over intuition, feeling over thinking and judging over perceiving. The distribution of the pediatric dentists' 16 personality types differed significantly from other dental specialists, general dentists, and pediatricians as well as the general population. Pediatric dentists were significantly more likely to prefer: sensing when compared to pediatricians; feeling when compared to dental specialists, general dentists, and pediatricians; and judging when compared to pediatricians and the general population. Pediatric dentists who preferred sensing were more likely to spend a greater portion of their time in clinical care than those who preferred intuition. Ninety-seven percent of those responding were very satisfied or satisfied with their profession. Those who were very satisfied were more likely to prefer extraversion, be over 46-years-old, and practice in a non-solo setting.* ***Conclusions:*** *The personalities of pediatric dentists differ from other dentists and pediatricians as well as the general population and are associated with some demographic and practice factors. (Pediatr Dent 2011;33:37-45) Received August 27, 2009 / Last Revision February 26, 2010 / Accepted February 26, 2010*

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Pediatric dentistry is a unique specialty of dentistry, since it is the only one whose definition is age-based.[1] Treating children exclusively in a dental practice requires an individual who obviously must enjoy working with children. Pediatric dentists should ideally possess qualities that optimize their interaction with not only their pediatric patients, but also with the child's parents—a factor that adds considerable complexity to rendering pediatric dental care. In addition, pediatric dental practices differ from other types of dental practices in a number of attributes. According to surveys conducted by the American Dental Association (ADA), pediatric dentists see almost twice as many patient visits per week (93)[2] than general practitioners (49),[3] excluding hygiene visits in the tabulation. In addition, the percentage of preventive dental procedures provided in an average year by pediatric dentists (34%) is almost twice that provided by general practitioners (18%).[4] It should be possible and potentially beneficial to define in objective terms what personality type or types may be drawn to this profession; however, there is little information available that specifically defines the personality characteristics of pediatric dentists.

One of the most widely used personality tests is the Myers-Briggs Type Indicator (**MBTI**, or MBTI instrument),[5] which has been used worldwide for over 60 years with extensive application to the field of career counseling.[6] Numerous studies have used the MBTI assessment to investigate the personality types of dentists,[6-11] predoctoral dental students and applicants,[9,12-19] postdoctoral dental students,[20,21] and dental hygienists.[22,23] None of the dentist studies describes in detail, with a significant sample size, the personality types of pediatric dentists.

The purposes of this study were to: determine the personality types of pediatric dentists using the Myers-Briggs type indicator; compare them to the US general population, general dentists, other dental specialists, and pediatricians; and investigate possible associated factors such as demographics, practice variables, and career satisfaction.

Methods

This study was approved by the Children's Hospital Boston Committee on Clinical Investigation. A list of pediatric dentists was obtained from the American Academy of Pediatric Dentistry (AAPD) in 2007. Power calculations determined that a sample size of 200 would provide a 95% confidence

[1]Dr. Needleman is senior associate in pediatric dentistry, Children's Hospital Boston, Boston, Mass, and clinical professor in developmental biology, Harvard School of Dental Medicine, Boston; [2]Dr. Bang is former resident in dentistry, Children's Hospital Boston, and former fellow in developmental biology, Harvard School of Dental Medicine; [3]Dr. Zhou is biostatistician, Children's Hospital Boston; [4]Mr. Johnson is coordinator of research services, and [5]Dr. McPeek is director of research, Center for Applications of Psychological Type, Gainesville, Fla; and [6]Dr. Graham is senior biostatistician, Children's Hospital Boston, and instructor in pediatrics, Harvard School of Medicine, Boston. Correspond with Dr. Needleman at hneedleman@post.harvard.edu

interval no wider than ±7% to estimate the distribution of MBTI types in the population of pediatric dentists. Questionnaires were sent out to 500 randomly selected pediatric dentists, with the expectation of a 40% response rate.

A cover letter explaining the purpose of the study was mailed, along with the questionnaire and request for consent. The questionnaire consisted of the MBTI (form M, CPP, Inc, Mountain View, Calif) and questions about the responder's demographics, practice characteristics, and career satisfaction. Demographic questions included gender, year of birth, and marital status. Practice factors included primary area of practice, socioeconomic status of their patient population, type of practice, and years in practice. Pediatric dentists also were asked to rate their satisfaction with their career in pediatric dentistry on a 5-point scale (very satisfied, satisfied, ambivalent, dissatisfied, and very dissatisfied). Each returned questionnaire was coded and entered into an SPSS database.

The MBTI is designed to determine personality preferences among different styles of attending and processing information. It identifies personality type, a theory of personality developed by the Swiss psychiatrist Carl Jung (1875-1961).[24] Jung's theories were further developed by Isabel Briggs Myers, who, in collaboration with her mother Katherine Cook Briggs, developed the MBTI to identify different personality types. Their ideas help explain why different kinds of people are interested in different things, prefer different kinds of work, and sometimes find it hard to understand each other—all due to basic differences in how people take in information and make decisions about it. The MBTI consists of 93 questions, each with 2 forced choice responses. Answers correspond with personality preferences on 4 personality dichotomies, each consisting of 2 opposite poles (Table 1)[7,8,25,26]: (1) extraversion (E) vs. introversion (I) –where you focus your attention; (2) sensing (S) vs. intuition (N)– the way you take in information; (3) thinking (T) vs. feeling (F)—the way you make decisions; and (4) judging (J) vs. perception (P)—how you deal with the outside world. Combinations of these 4 dichotomies yield 16 possible personality types, which are fully described in Table 2.[27]

Positive evidence for the reliability and validity of the MBTI's 4 scales has been summarized at several points in its development.[28-30] The current revision of the instrument, form M, which was used in this study, has coefficient alpha values of either .91 or .92 for the 4 scales and test-retest correlations of .83 or higher.[5]

A unique database of MBTI personality preferences and types of dentists was created by combining data available from a number of published studies[7,8,10,11] and available

Table 1. PERSONALITY PREFERENCES ON THE 4 MYERS-BRIGGS TYPE INDICATOR DICHOTOMIES[7,8,25,26]

Where you focus your attention	**Extroversion** • Focuses attention on the outer world of people and things. • Enjoys meeting people, communicating freely, can tolerate interruptions, and seeks action-oriented tasks. • Dislikes complicated procedures, may be impatient with tedious jobs, and needs frequent changes in the workplace.	**Introversion** • Focuses attention on the inner world of ideas and impressions. • Prefers to work alone and think before acting, needs quiet to concentrate, attends to details, and may enjoy working uninterrupted on tedious projects. • Prefers one-on-one communications, disregards outside events, and is commonly reticent.
The way you take in information	**Sensing** • Takes in information through 5 senses and focuses on the here and now. • Prefers established procedures, enjoys acquired skills, appreciates standard methods for resolutions, is patient with routines, and likes precise, practical tasks. • Dislikes solving new problems, is impatient with complications, and often ignores inspirations.	**Intuition** • Takes in information from patterns and the big picture and focuses on future possibilities. • Enjoys solving problems and learning new skills, perseveres with complicated situations, follows hunches, and works with bursts of enthusiasm. • Dislikes routine tasks, is subject to factual errors, and prefers innovative rather than practical tasks.
The way you make decisions	**Thinking** • Makes decisions based primarily on logic and on an objective analysis of cause and effect. • Prefer logical analysis, needs fair treatment, is fair-minded, appears task-oriented, and may withhold emotional reactions. • Lacks empathy, is hypercritical, and prefers harmony, but can survive without it.	**Feeling** • Makes decisions based primarily on values and on subjective evaluation of person-centered concerns. • Needs harmony, enjoys pleasing people, is influenced by personal likes and dislikes, needs frequent praise from others, and is compassionate. • Dislikes relating unpleasant information, uses a consensus leadership, and is often disturbed by disharmony.
How you deal with the outer world	**Judging** • Likes a planned and organized approach to life and prefers having things settled. • Prefers to develop, schedule, and implement plans. Enjoys decision-making, seeks closure, and after deciding on a plan of action tends to be satisfied. • Dislikes interruptions, makes hasty decisions, and tends to postpone new projects.	**Perceiving** • Likes a flexible and spontaneous approach to life and prefers to keep options open. • Adapts well to change, enjoys learning new tasks, prefers to leave decisions open, and welcomes new information. • Frequently postpones decisions, dislikes the mundane, and ignores current tasks.

Table 2. DESCRIPTION OF THE 16 MYERS-BRIGGS TYPE INDICATOR PERSONALITY TYPES[27]

ISTJ • Is practical, logical, realistic, thorough and dependable • Is organized, makes plans, and follows them • Prefers to work on own and be accountable for the results	**ISFJ** • Is conscientious, dedicated, dependable, and painstaking • Is loyal, friendly, considerate, and wants to serve others who are deemed important • Works quietly and devotedly to fulfill expectations	**INFJ** • Is visionary, especially about people issues • Focuses on the common good • Is creative in developing long-range plans to contribute to the welfare of others • Has a quiet, firm voice for values	**INTJ** • Has a long-range perspective and vision for organizations • Is independent, determined, and forceful in opinions • Has high standards of competence and performance
ISTP • Observes and analyzes everything around with detached curiosity • Is interested in cause and effect and how things work • Organizes facts using logical principals	**ISFP** • Is quiet, friendly, sensitive, and kind • Respects others' views and avoids disagreements • Is loyal and devoted to important people or goals • Enjoys the present moment	**INFP** • Is idealistic, loyal, and committed • Internal value system guides decisions and actions • Focuses on creative plans to help people fulfill their potential	**INTP** • Focuses on logical analysis of ideas and systems • Is a detached and objective problem solver • Has high standards of competence for self and others • Is a creative theoreticians
ESTP • Enjoys troubleshooting and solving practical problems • Likes action and interactions and lives in the present moment • Is adaptable, tolerant, and pragmatic • Focuses on results	**ESFP** • Is outgoing, accepting, warm, and friendly • Enjoys working with others and making things happen for people • Uses common sense and practical approaches	**ENFP** • Is warm and enthusiastic and involves others in projects • Is imaginative and creative • Creates plans and programs to support people's growth • Is flexible, adaptable, tolerant, and changeable	**ENTP** • Is a quick and ingenious problem solver • Enjoys figuring out what motivates others and using that to achieve goals • Is likable, adaptable, and flexible
ESTJ • Focuses on achieving practical, realistic goals • Organizes and directs plans • Is decisive and moves quickly to implementation • Values efficiency and a no-nonsense approach	**ESFJ** • Is outgoing, talkative, cooperative, and friendly • Strives to create and maintain harmony for everyone • Wants to give support, encouragement, and praise • Organizes people to complete tasks efficiently	**ENFJ** • Is empathetic, sociable, and interested in others • Focuses on helping others fulfill their potential • Is an enthusiastic leader and colleague • Is insightful about people	**ENTJ** • Is a frank and decisive organizer and leader • Focuses on comprehensive systems to achieve organizational goals

databases.[31,32] This dentist composite database (DCD) contained 2,141 dentists and is the largest sample of dentists available to date with data regarding dentists' MBTI personalities. Only Grandy et al.[8] presented data separating general dentists from dental specialists; therefore, the 91 dental specialists from their study were not included in the DCD, but used as a separate comparative sample. It should be noted that data by Westerman et al.[7] were extracted from the more comprehensive data from Grandy et al. Hence, the Westerman et al. data were not included in the DCD. Since the other studies did not allow identification or separation of the dental specialists from their dentist's samples, the DCD was considered to predominately consist of general dentists.

This assumption is supported by the ADA's 2006 Survey of Dental Practices, which reported that over 80% of US dentists are general practitioners.[33] Also confirming this percentage is the approximately 20% of dental specialists reported within the Grandy et al. sample of 472 dentists.[8] The distribution of the 16 personality types in our sample was compared to that of dental specialists,[7] general dentists (DCD), pediatricians,[34] and the US general population[5] using chi-square tests or Fisher's exact tests where appropriate.

Self-selection ratios (SSRs) were used to compare the 4 MBTI personality preference dichotomies to each of the other previously published MBTI samples of interest. A SSR compares the relative frequencies of a personality type between 2 samples of interest (SSR=% of a type in sample 1 ÷ % of a type in sample 2). The SSR magnitude indicates whether there are fewer people of that type in the sample (SSR <1), equal proportions of the type in the sample and the base population (SSR=1), or if there are more people of that type in the sample (SSR >1). Chi-square tests or Fisher's exact tests were used, as appropriate, to determine which of these ratios indicated a statistically significant over- or under-representation of our pediatric dentist sample to the different comparison groups.

Univariate and multivariate logistic regressions were used to identify study variables that were predictive of each personality dichotomy. Similar analyses were performed to identify personality dichotomies, demographics, and practice characteristics that were significantly associated with career satisfaction. Statistical significance was achieved with a 2-tailed *P*-value <.05. Logistic regression analyses were performed using SAS 9.1 software (SAS Institute Inc, Cary, NC).

Results

Forty-four percent (219/500) of the questionnaires were returned. Five, however, were incomplete, leaving 214

questionnaires (43%) for analysis. The mean age of responding pediatric dentists was 46.5±11.8 (SD) years (range= 28-76 years). Fifty-eight percent of the respondents were male, 89% were married, and all 5 regions of the United States (Northeast, Southeast, Midwest, Southwest, and West) were represented, with ranges for each between 14% to 27%. Table 3 presents the practice characteristics of the responding pediatric dentists.

Table 4 contains the distribution in descending order of the 16 MBTI personality types of the responding pediatric dentists compared to: dental specialists[8]; general dentists (DCD); pediatricians[31]; and the US general population.[5] The 6 most prevalent personality types (Table 2) among pediatric dentists accounted for 73% of the entire sample: (1) ISTJ (16%); (2) ISFJ (14%); (3) ESTJ (13%); (4) ESFJ (13%); (5) ENFJ (9%); and (6) ENFP (9%); (note that, due to rounding for each type percentage, the total adds up to 1% more than the 73%). The distribution of the pediatric dentists' 16 personality types differed significantly from that of dental specialists, (P=.04), general dentists (P<.001), pediatricians (P<.001), and the US general population (P<.001).

Table 5 presents analyses comparing samples using SSR for the 4 MBTI preference dichotomies. The pediatric dentists preferred sensing (62%) over intuition (P<.001), feeling (58%) over thinking (P<.03), and judging (79%) over perceiving (P<.001), and were almost equally divided between extraversion (52%) and introversion. The pediatric dentists were significantly more likely to prefer:

1. sensing rather than intuition when compared to pediatricians (P<.001), but less likely than the US general population (P<.001);
2. feeling rather than thinking when compared to dental specialists (P<.01), general dentists (P<.001), and pediatricians (P<.05); and
3. judging rather than perceiving when compared to pediatricians (P<.001) and the US general population (P<.001).

We performed univariate analyses to identify demographic and practice variables associated with dichotomy preference. No differences were found within the extraversion vs introversion and judging vs perceiving dichotomies. Within the sensing vs intuition dichotomy, however, the analysis revealed that those who preferred sensing were more likely to spend a greater portion of their time in clinical care than those who preferred intuition (P=.02). In the thinking vs feeling dichotomy, several variables were found to be significant (Table 6). Pediatric dentists who preferred thinking rather than feeling were more likely to: be male (P<.001);

Table 3. PRACTICE CHARACTERISTICS OF RESPONDING PEDIATRIC DENTISTS

Characteristic (N)	%
Area of practice (210)	
Urban	29
Suburban	61
Rural	9
Other	1
Practice type (213)	
Private practice	86
Institutional practice	9
Neither	5
Practice ownership (212)	
Full owner	50
Associateship	28
Partnership	20
Other	2
Patient population (119)	
Middle class	56
Upper class	22
Upper middle class	16
Lower class	6
Professional activities (212)	
Clinical care	87
Teaching	6
Administrative	5
Other	1
Research	1
Patient care experience (N)	Mean±(SD)
Years in practice (214)	16.9±11.8
Weeks worked/year (209)	47.0±5.4
Hours worked/week (212)	31.1±8.4
Patient visits/week (207)	127±68

Table 4. COMPARISON OF THE DISTRIBUTION OF PEDIATRIC DENTISTS' PERSONALITY TYPES WITH OTHER SAMPLES*

Type	Pediatric dentists (present study)	Dental specialists[8]	Dentist composite database*	Pediatricians[34]	US population[5]
N of sample	214	91	2,141	201	3,009
ISTJ	16	21	16	13	12
ISFJ	14	13	8	5	14
ESTJ	13	14	17	8	9
ESFJ	13	3	11	5	12
ENFJ	9	7	6	7	2
ENFP	9	2	4	10	8
INFJ	5	7	3	7	2
INTJ	5	4	5	9	2
ENTJ	5	9	9	7	2
INFP	3	4	4	9	4
ISFP	2	1	2	4	9
ESFP	2	0	2	1	9
INTP	1	4	3	9	3
ISTP	1	4	3	2	5
ENTP	1	3	4	5	3
ESTP	1	2	3	1	4
P-value‡		.04†	<.001§	<.001§	<.001§

* The Dental Composite Database consists of the following 5 samples: Macdaid et al. 198628=137 general dentists and specialists; Grandy et al. 19968=381 general dentists; Sandow et al. 200010=1,316 general dentists and specialists; Baran 200511=202 general dentists and specialists; CPP database 200832=105 general dentists and specialists.

† Fisher's exact test. ‡ *P*-values in bold are ≤.05. § Chi-square test.

have worked more years in practice (>16 years; *P*=.008); and be older (>46 years old; *P*=.009). The multivariate logistic regression analysis, however, revealed that only male gender remained a significant predictor of preference for thinking after adjusting for age and years in practice. Male pediatric dentists were 2.4 times more likely to prefer thinking than their female counterparts (*P*=.006).

We also performed univariate and multivariate analyses to identify predictors of professional satisfaction (Table 7). In these analyses, satisfaction was divided into very satisfied (N=128, 60%) and less than very satisfied (satisfied, ambivalent, dissatisfied, and very dissatisfied; N=86, 40%). Other combinations of satisfaction levels did not result in sample sizes ample enough for meaningful statistical analyses. Among the 4 dichotomies, only the extraversion vs introversion dichotomy revealed significant differences. Sixty-seven percent of the pediatric dentists who preferred extraversion were very satisfied compared to 52% who preferred introversion (*P*=.03). Older pediatric dentists (*P*=.02) and pediatric dentists who practiced in a non-solo setting (P=.02) were significantly more likely to be very satisfied with their career. In multivariate logistic regression modeling, the extroversion vs introversion dichotomy (*P*=.01), older age (*P*=.01), and non-solo practice type (*P*=.006) all remained independent predictors of career satisfaction.

Discussion

This study describes in depth the personality types of pediatric dentists and how they differ from dental specialists, general dentists, pediatricians, and the US general population. In addition, it investigated if factors such as demographics, practice variables and professional satisfaction were associated with their personality types.

In our sample, there were significantly more pediatric dentists who preferred feeling rather than thinking (58% vs 42%). In addition, they were significantly more feeling than thinking types when compared to other dentists, dental specialists, and pediatricians. The dichotomy of feeling vs thinking reflects the way one makes decisions. Those personality types who prefer feeling make decisions based primarily on values and person-centered concerns. They strive for harmony and positive interactions and are empathetic, compassionate, and concerned with pleasing people. These qualities may be especially beneficial in working with children, parents, and a large staff. Since adults are generally more cooperative than children in the dental setting, dentists treating adults often can focus more on the technical nature of dental procedures rather than on the patient's behavior.

Pediatric dentists must at all times be fully cognizant of the child's emotions, movements, and overall behavior when providing dental care and the emotions and questions of the parent whom the dentist must try to please. It was surprising that the pediatric dentists were more feeling when compared to the pediatricians. Perhaps more "feeling" is needed in performing highly technical/surgical dental procedures on children than when providing routine pediatric medical care.

Another significant finding was that pediatric dentists strongly preferred judging over perceiving (by an almost 4:1 ratio of 79% vs 21%). Prevalence of this preference, however, was no different when compared to the other dental specialists and general dentists. The judging/perceiving personality dichotomy reflects the way one deals with the outer world. Those who prefer judging, such as pediatric, general, and specialist dentists, like a planned and organized approach to life and prefer to have things settled. They prefer to develop, schedule, and implement plans, enjoy decision-making, seek closure, are methodical, and tend to be satisfied after deciding on a plan of action. This preference for judging was significantly more prevalent in dentists when compared to both pediatricians and the US population. Perhaps dentists who

Table 5. COMPARISON OF PREFERENCE SELF SELECTION RATIOS OF PEDIATRIC DENTISTS WITH OTHER SAMPLES

Preference	Pediatric dentists (present study) N=214		Dental specialists[8] N=91		Dentist composite database* N=2,141		Pediatricians[34] N=201		US population[5] N=2,009	
	N	%	Self-selection ratios	*P*-value†	Self-selection ratios	*P*-value†	Self-selection ratios	*P*-value†	Self-selection ratios	*P*-value†
Extroversion	112	52	1.29	NS	0.92	NS	1.18	NS	1.06	NS
Introversion	102	48	0.80		1.1		0.86		0.94	
Sensing	132	62	1.04	NS	0.98	NS	1.63	<.001	0.84	<.001
Intuition	82	38	.94		1.03		0.62		1.44	
Thinking	91	43	0.68	<.01	0.72	<.001	0.79	<.05	1.06	NS
Feeling	123	57	1.54		1.42		1.24		0.96	
Judging	169	79	1.01	NS	1.05	NS	1.3	<.001	1.46	<.001
Perceiving	45	21	0.96		0.84		0.54		0.46	

* Dental Composite Database consists of the following 5 samples: Macdaid et al. 198631=137 general dentists and specialists; Grandy et al. 19968=381 general dentists; Sandow et al. 200010=1,316 general dentists and specialists; Baran 200511=202 general dentists and specialists; CPP Database 200832=105 general dentists and specialists; *P*-values in bold are ≤.05.

† NS=nonsignificant.

deal with highly technical and fine procedures, as well as complex appointment scheduling, are attractive to personalities with these qualities.

One needs to view the findings that pediatric dentists were more likely to prefer feeling over thinking and judging over perceiving with caution. These 2 particular preferences are likely to be influenced by responder bias. The little research on self-selection and type distribution bias suggests a possible higher incidence of feeling rather than thinking and judging rather than perceiving preferences in voluntary samples.[35] These findings are consistent with the interpretation that survey participants who prefer feeling are more likely to help the survey conductor by completing questionnaires.[36] Cummings et al. discussed biases in the early "normative" samples used for MBTI and how those differ with a more randomized, stratified sample of the US population.[36]

Our sample of pediatric dentists strongly preferred sensing (62%) over intuition (38%). The sensing/intuition personality dichotomy reflects the way one prefers to take in information. Those who prefer sensing are: oriented to present realities; are factual and concrete; focus on what is real and actual; build carefully and thoroughly toward conclusions; and trust experience. They also are more likely to: enjoy acquired skills; appreciate standard methods for resolutions; be patient with routines; and prefer precise, practical tasks. Dentistry's technical nature and the relatively immediate reinforcement gained from completing a specific dental procedure and an overall treatment plan may attract those with these sensing traits. Pediatric dentists in this study, and dentists in general,[32] are more likely to be sensing than pediatricians.[34] The hands-on nature of dentistry may possibly have a greater appeal to sensing types.

Our sample of pediatric dentists was almost equally divided between extroversion (52%) and introversion (48%), a ratio that did not differ significantly on this dimension from any of the comparison groups. Though only male pediatric dentists were more likely ($P<.05$) to be introverts when compared to matched gender subsets of the Sandow et al. dentist sample,[14] this finding should be interpreted with caution. First, there is no corresponding significant extraversion/introversion difference in the comparison to the larger, general dentists' reference group. Second, given the large number of analyses done for this study, significance levels of $P<.05$ should be treated with caution since some may have occurred by chance alone.

Of the 16 personality types of the MBTI, the 6 most prevalent personality types of the pediatric dentists (ISTJ, ISFJ, ESTJ, ESFJ, ENFJ, and ENFP) accounted for 73% of the entire sample. The descriptions for each of these 6 types, as seen in Table 3, contain many attributes beneficial to those who work in the dental profession in any capacity and especially those who choose to work exclusively with children. These attributes include being conscientious, organized, empathetic, interested in others, friendly, warm, enthusiastic, outgoing, talkative, insightful about people, and eager to serve others. Extraversion is preferred over introversion for 4 of these 6 types, which was also true for feeling over thinking and sensing over intuition. Five of the 6 most prevalent personality types favor judging over perceiving. All of these results are consistent with the preference dichotomy analyses.

Ninety-seven percent of the responding pediatric dentists were very satisfied or satisfied with their profession. This high level of satisfaction is likely an overestimate since those pediatric dentists who were dissatisfied with their career may have been less likely to respond. Similarly, pediatric dentists who have left their practices due to dissatisfaction may no longer be members of the

Table 6. UNIVARIATE AND MULTIVARIATE PREDICTORS OF THE PREFERENCE FOR THINKING*

	Overall	Prefers thinking	Unadjusted odds ratio (OR)		Adjusted odds ratio (OR)	
	N	N (%)	OR (95% CI)	*P*-value	OR (95% CI)	*P*-value
Male	125	66 (53)	2.9 (1.6, 5.1)	<.001	2.4 (1.3, 4.5)	.006
Female	89	25 (28)				
>46 ys old	100	52 (52)	2.1 (1.2, 3.6)	.009	1.3 (0.4, 3.9)	.69
≤46 ys old	114	39 (34)				
Ys of practice >16	102	53 (52)	2.1 (1.2, 3.7)	.008	1.2 (0.4, 3.8)	.71
Ys of practice ≤16	112	38 (34)				

*P-values in bold are ≤.05.

Table 7. UNIVARIATE AND MULTIVARIATE PREDICTORS OF PROFESSIONAL SATISFACTION*

	Overall	Very satisfied	Unadjusted odds ratio (OR)		Adjusted odds ratio (OR)	
	N	N (%)	OR (95% CI)	*P*-value	OR (95% CI)	*P*-value
Extroversion	112	75 (67)	1.9 (1.1, 3.3)	.03	2.1 (1.2, 3.8)	.01
Introversion	102	53 (52)				
Sensing	132	50 (61)	1.1 (0.6, 1.9)	.78	1.0 (0.6, 2.0)	.89
Intuition	82	78 (59)				
Thinking	91	73 (59)	1.0 (0.6, 1.7)	.87	1.0 (0.5, 1.9)	.98
Feeling	123	55 (60)				
Judging	169	101 (60)	1.0 (0.5, 2.0)	.98	1.0 (0.5, 2.2)	.94
Perceiving	45	27 (60)				
>46 ys old	100	68 (68)	1.9 (1.1, 3.3)	.02	2.2 (1.2, 4.0)	.01
≤46 ys old	114	60 (53)				
Non-solo practice	158	102 (65)	2.0 (1.1, 3.8)	.02	2.5 (1.3, 4.9)	.006
Solo practice	55	26 (47)				

*P-values in bold are ≤ 05.

AAPD and, therefore, would not have received the survey. The logistic regression analyses determined that extraversion, age older than 46 years, and non-solo practice were the only predictors of pediatric dentists being very satisfied with their profession. Those pediatric dentists who are extraverts derive their energy from the outside world and dentistry, especially pediatric dentistry, which requires considerable patient and parent management.

A pediatric dentist interacts with many individuals every working day, including patients, parents, grandparents, siblings, nannies, receptionists, hygienists, and assistants. Therefore, people who receive energy from interactions may be more satisfied in a high volume,[2] highly interactive pediatric dental practice. Regarding age, it may be that, as pediatric dentists mature, they become more comfortable with their knowledge and ability to treat patients, which in turn leads to greater success and thus greater satisfaction. Also, with time comes efficient practice management, growth, and possible expansion to include associate pediatric dentists to share in the patient load and practice management. Younger practitioners may not have yet decided their level of career satisfaction or attained "success." Lastly, those pediatric dentists who prefer extraversion would more likely prefer a non-solo practice setting where there is more opportunity for interaction with associates and a larger support staff. Because the non-solo setting was significant in the multivariate analysis where the effect of extraversion was controlled for, one can conclude that there is something about the non-solo setting that is associated with high satisfaction. In other words, even among extraverts, those who practice in a non-solo setting are more satisfied than those who do not.

It is important to note another potential responder bias when interpreting career satisfaction. The average age of the sample of responding pediatric dentists used in this study was 46.5 years old, and 89% were married. This group may not be representative of all pediatric dentists but of an older married subset who are more settled in their lives and possibly more content.

Within our sample of pediatric dentists, those who preferred sensing over intuition were more likely to spend a greater portion of their time in clinical care. People who prefer sensing understand ideas and theories through practical applications. They like to take in information that is real and tangible and trust experience. Pediatric dentists are more likely drawn to clinical practice since they prefer tangible experiences, which can be gained from spending time providing dental care. People who prefer intuition tend to focus on future possibilities and are imaginative. Pediatric dentists who prefer intuition spend less time in clinical care and may be more intrigued by the open-ended possibilities of research or administration. They can spend their time thinking of new ways to grow and shape the business aspect of dentistry and/or ideas for dental research.

Male gender identification was predictive of preferring thinking. This replicates the widely held finding, as reported in the MBTI National Representative Sample, that males more often prefer thinking while females are more likely to prefer feeling.[5] In general, people who prefer thinking: are analytical; solve problems with logic; are reasonable; and use cause-and-effect reasoning. People who prefer feeling are empathetic, compassionate, and guided by personal values.

The reader is cautioned that potential biases and limitations in this study affect the ability to generalize the findings to all pediatric dentists. The 214 pediatric dentist respondents represent only a small percentage of those pediatric dentists actually in practice. Ideally, having a larger sample would have resulted in more confidence that our sample was truly representative. Our response rate of 43% is low when compared to the 54% mean physician's response rate to mailed surveys, as reported by Asch et al.[37] We did not send out a second mailing, however, which may have increased our response rate. There was insufficient available data for those not responding to our survey to make a meaningful comparison to the responders in an attempt to investigate the extent of potential responder bias in our results.

This study and the vast majority of other comparative samples used in our analyses also relied on voluntary responding via mailed survey instruments (ie, self-selection [choice to respond or not]). This limitation, however, is almost universal in survey studies that typically allow respondents to complete a questionnaire. Since most research on type distributions in target populations is subject to similar concerns about self-selection, any biases that might skew type distributions of respondents would operate across all studies. Thus, comparing one distribution to another, the primary means of analysis in this study would compare samples subject to the same self-selection biases. Lastly, due to the large number of multiple comparative analyses performed on this dataset, marginal P values (those at or just below .05) should be viewed with caution. Similar studies but with larger sample sizes than our 214 should be undertaken to replicate the findings of this study and should strive not to rely on voluntary responses.

This study's findings may be beneficial in counseling those considering dentistry as a career, predoctoral dental students considering specializing in pediatric dentistry, and pediatric dentists who are considering adding an associate or partner to their practice. In addition, administrating the MBTI to applicants who are applying for entrance into postdoctoral programs in pediatric dentistry could provide useful information to both the applicants and those making the admission decisions.

Conclusions

Based on this study's results, the following conclusions can be made:

1. The 6 most prevalent personality types of the pediatric dentists accounted for 73% of the entire sample. In descending order, these are: ISTJ; ISFJ; ESTJ; ESFJ; ENFJ; and ENFP.
2. The profile of the pediatric dentists' 16 personality types differed significantly from other dental specialists ($P<.04$), general dentists ($P<.001$), pediatricians ($P<.001$), and the general population ($P<.001$).

3. Pediatric dentists preferred sensing (62%) over intuition ($P<.001$), feeling (58%) over thinking ($P<.03$), and judging (79%) over perceiving ($P<.001$) and were almost equally divided between extraversion (52%) and introversion.
4. Pediatric dentists were significantly more likely to prefer:
    a. sensing rather than intuition when compared to pediatricians ($P<.001$), but less likely than the general population ($P<.001$);
    b. feeling rather than thinking when compared to dental specialists ($P<.01$), general dentists ($P<.001$), and pediatricians ($P<.05$); and
    c. judging rather than perceiving when compared to pediatricians ($P<.001$), and the general population ($P<.001$).
5. Pediatric dentists who prefer sensing were more likely to spend a greater portion of their time in clinical care than those who prefer intuition ($P<.02$).
6. Male pediatric dentists were 2.4 times more likely to prefer thinking than their female counterparts ($P=.006$).
7. Sixty percent of pediatric dentist respondents were very satisfied with their career in pediatric dentistry, while 37% were satisfied, 2% ambivalent, 1% dissatisfied, and 0% very dissatisfied.
8. Pediatric dentists who were satisfied with their professional career were more likely to:
    a. be extroverts ($P=.01$);
    b. be over 46-years-old ($P=.01$); and
    c. practice in non-solo settings ($P<.006$).

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Abstract of the Scientific Literature

Effect of high-fluoride toothpaste and no post-brushing water rinsing on enamel demineralization

The aim of the study was to compare the effects on enamel demineralization and fluoride (F) retention of two different brushing/rinsing regimens. An in-situ caries model with orthodontic bands was used. A test group using a 5000 ppm F toothpaste (n=10) with no post-brushing water rinsing was compared to a control group using a 1450 ppm F toothpaste (n=10) with three daily sessions of post-brushing water rinsing. Orthodontic bands were cemented to the two upper first premolars with a 2-3 mm gap away from the buccal surface in order to provide a tooth surface that could accumulate plaque and provide a potential site for initial caries development. The teeth were extracted at 8 and 9 weeks and analyzed using quantitative laser fluorescence (QLF). Intra-oral fluoride retention was also compared for the two groups by measuring solution samples obtained from under the band using paper points. In comparison to the control group, the test group demonstrated both a significantly smaller QLF lesion area and a smaller average loss of fluorescence. The test group also had the highest F retention concentration under the band.

Comment: *High caries risk groups, such as adolescent patients undergoing orthodontic treatment, should be targeted to use 5000 ppm F toothpastes. Younger patients, for whom high F concentration toothpastes are not recommended, should be discouraged from rinsing their mouths with water immediately after brushing.* ***KMM***

Address correspondence to Dowen Birkhed, Department of Cariology, Institute of Odontology, Box 450, SE-405 30 Goteborg, Sweden; e-mail: birkhed@odontologi.gu.se

Al-Mulla A, Karlsson L, Kharsa S, Kjellberg H, Birkhed D. Combination of high fluoride toothpaste and no post-brushing water rinsing on enamel demineralization using an in-situ caries model with orthodontic bands. Acta Odontologica Scandinavica 2010;68:323-8.

28 references