

“Medical students who prefer “Thinking” more often chose non-primary care specialties such as Anesthesiology, Emergency Medicine, Orthopedics, Psychiatry, Radiology, and Surgery; type and gender information can be helpful in counseling medical students about their next career moves.”

MBTI® Types, Gender, and Residency Selection

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ABSTRACT

This study was designed to determine and compare the Myers-Briggs Type Indicator® (MBTI®) type preferences and gender of medical students from one medical school and their choices for residency specialties. There were more students with Thinking preferences in the nonprimary care specialties. Data on the type preferences of those choosing different residencies are presented, with implications for the process of deciding about residency. For example, students choosing

Psychiatry are more Perceiving than Judging, suggesting a preference for a flexible and spontaneous work life. Gender analyses of the specialties chosen indicated that women more often preferred OB/GYN and Pediatrics, whereas men more often preferred Internal Medicine, Orthopedics, Radiology, and Surgery.

Note: For the Myers-Briggs Type Indicator® (MBTI®) instrument, the eight preference categories are the following: Extraversion (E) versus Introversion (I); Sensing (S) versus Intuition (N); Thinking (T) versus Feeling (F); Judging (J) versus Perceiving (P).

INTRODUCTION

The Myers-Briggs Type Indicator® (MBTI®) assessment has been used by counselors in a variety of career counseling venues, including the health professions. However, there have been only a few published reports addressing the MBTI instrument and the specialties chosen by medical students (Friedman & Slatt, 1988; McCaulley, 1981; Myers with Myers, 1980; Stillwell, Wallick, Thal, & Burleson, 2000). For example, Stillwell et al. (2000) analyzed the MBTI types of nearly 4,000 medical students from 12 U.S. medical schools and found that Feeling types choose Family Medicine significantly more often than Thinking types.

Friedman and Slatt (1988) correlated MBTI types and specialties chosen over 4 years at the University of North Carolina. They found that students choosing Family Medicine tended to prefer S, F, and J, whereas students choosing Obstetrics-Gynecology tended to prefer S, T, and J. Students choosing Psychiatry tended to prefer N, F, and P.

McCaulley (1981) summarized the MBTI types of nearly 7,200 medical students from the 1960s and 1970s from a large number of medical schools. These students were more likely to be Ns, Fs, and Js.

Myers with Myers (1980) reported that a large proportion of ESTJs went into general practice (now called Family Medicine). Anesthesiology appeared to be particularly appealing to either ISTPs or ISFPs.

Since the mid-1990s, Temple University School of Medicine (TUSM) has offered the MBTI assessment to all members of each incoming class. During Orientation, students take the self-scorable Form G or more recently Form M. After the administration of the MBTI instrument, students learn about the history of the test and about type itself. In this orientation meeting, the results for the entering class and for three previous classes are discussed. Thus, each entering class learns about the reported "types" enrolled with them at TUSM.

A data base was developed for each class's residency choices. We then looked at the relationship between residency choice, gender, and MBTI scores after the "Match." The National Residency Matching Program is an organization that provides a mechanism to match the specialty preference of the graduating medical student with the preferences of the residency program directors in hospitals.

The results of the MBTI assessment were discussed again as part of noon-time seminars, during which they

were folded into a career decision process developed by the American Association of Medical Colleges' CAREERS in MEDICINE program. The results were also used in individual educational counseling.

METHOD

The primary data were derived from the six graduating classes from 1999–2004. Gender data were recorded only for the years 2002 and 2004–2006. All students took the MBTI assessment during Orientation of their first year in medical school, and their MBTI preferences (see Table 1) were recorded in a database. The primary specialty chosen by each student was entered in the database near the end of his or her fourth year. The data were sorted by specialty and MBTI preferences.

The data do not include students choosing only an "intern year," i.e., a Preliminary year or a Transitional year, and do not include specialties that had seven or fewer students over the 6-year span (i.e., Radiation Oncology, Pathology, Neurosurgery). The total number of students over the 6 years used for this study was 891.

The following data were calculated:

- The total number and percentage of students in each MBTI preference for each specialty;
- The total number and percentage of students in each MBTI preference for the primary care specialties (Internal Medicine, Family Medicine, Pediatrics, and Medicine-Pediatrics) and non-primary care specialties (Anesthesiology, Dermatology, Emergency Medicine, Neurology, Neurosurgery, OB/GYN, Ophthalmology, Orthopedics, Otolaryngology, Pathology, Physical Medicine & Rehabilitation, Psychiatry, Radiation Oncology, Radiology, Surgery, and Urology); and
- The total number and percentage of female and male students in each of the specialties.

Statistical Methods. The proportion of medical students classified according to each of the MBTI preferences (i.e., E–I, S–N, T–F, J–P) was compared separately for each specialty choice. The proportions were compared statistically using the *z*-test for independent proportions. The null hypothesis was that there would be no difference in the proportion of medical students in any of the preferences for any of the specialties. The *p* < .05 level was used to reject the null hypothesis and decide that the proportions of medical students were different for a particular preference for a particular specialty. The Fisher's Exact test was

used to analyze differences between the primary care and nonprimary care groups, with a $p < .05$ being considered statistically significant. For the gender analysis, p -values were obtained based on the chi-square test for equal proportions, with a p value less than .05 considered statistically significant.

RESULTS

The type distribution and the number of students who chose each specialty are shown in **TABLE 1**. (SEE PAGE 54.) Almost 15% of students were ISTJs. A comparison of the students reveals a greater number with a preference for Thinking chose nonprimary care specialties, versus primary care specialties.

TABLE 2 (SEE PAGE 55) summarizes the statistical analyses of the four pairs of preferences for each specialty. Every specialty had at least one significant pair of preferences. Psychiatry was the only specialty with four statistically significant preferences (I, N, T, P). Statistics were not performed on Dermatology, Medicine-Pediatrics, Neurology, Physical Medicine & Rehabilitation, Urology, and Ophthalmology, because the number of students choosing each specialty was too low for meaningful analysis.

TABLE 3 (SEE PAGE 56) summarizes the data in Table 2, with the statistically significant preferences shown in boldfaced print. As indicated above, Psychiatry had four statistically significant preferences; Anesthesiology (S, T, J), OB/GYN (E, F, J), and Radiology (S, T, J) each had three statistically significant preferences; Emergency Medicine (N, T), Family Medicine (N, J), Internal Medicine (T, J), Orthopedics (T, J), and Surgery (I, T) had two statistically significant preferences; and Pediatrics (J) had one statistically significant preference. **TABLE 4** (SEE PAGE 56) summarizes the specialties chosen by female and male students for the years 2002 and 2004–2006.

DISCUSSION

The data in this study of students from Temple University School of Medicine suggest that more students with Thinking preferences choose nonprimary care specialties (65% vs. 55%), whereas more with Feeling preferences opt for the primary care specialties

(45% vs. 35%). Looking at the statistical significance of preferences in Table 2, it is worth noting that students who favor Introversion choose Psychiatry (supported by Myers with Myers [1980]) and Surgery, those choosing OB/GYN favor Extraversion, and those choosing all other specialty areas are mixed on the E–I dichotomy. This table also suggests that students choosing specialties requiring attention to exacting detail (e.g., Anesthesiology, Radiology) have a preference for Sensing.

It is especially important to note that many specialty areas are found in several of the 16 MBTI type classifications (Table 1). Thus, MBTI type can serve as a launching point for discussion of residency choice with third-year students. Knowledge of MBTI type provides an additional source of data for medical students to assess as they undergo the complex process of choosing a residency specialty.

Our methodology in comparing type obtained from the MBTI assessment given in the first year of medical

school with the specialty chosen over 3 years later is similar to that of Friedman and Slatt (1988). However, Brown and Peppler (1994) studied 35 randomly selected students from one medical school class and found that 20 students had changed in one of more of the MBTI preferences between the first and fourth years of school. Our data correlate the MBTI type in the first year of medical school with the specialty chosen 3 years later. We did not have a retest in the fourth year to determine if there were any changes in the interim as did Brown and Peppler.

In addition, we analyzed differences in personality types and specialties chosen by men and women, as Stillwell et al. (2000) did. Their data, derived from 12 medical schools over a 12-year period, was similar to ours in that women are more likely than men to choose the primary care specialties of Family Medicine, Medicine-Pediatrics, and Pediatrics. The AMA data from 2003 indicated that a majority of males choose Family Medicine and Internal Medicine.

Orenstein (2004) found that although 46% of students enrolled in medical schools are female, only 25% of the residents in radiology are women. These data are consistent with those from our study. Table 4

“Every specialty had at least one significant pair of preferences. Psychiatry was the only specialty with four statistically significant preferences (I, N, T, P).”

Table 1. A Summary of the 16 MBTI Types, the Percentage and Number of Students With Each Type, and a Listing of Specialties Chosen by Students in Each MBTI Type.

ISTJ (14.7%) 131 Internal Medicine 35 Surgery 18 Pediatrics 12 Family Medicine 11 Emergency Medicine 10 Orthopedics 10 Anesthesiology 7 Radiology 7 OB/GYN 4 Pathology 4 Psychiatry 3	ISFJ (6.6%) 59 Internal Medicine 16 Pediatrics 10 Radiology 5 Family Medicine 4 OB/GYN 4 Ophthalmology 4 Surgery 4	INFJ (4.2%) 37 Internal Medicine 11 Surgery 6 Pediatrics 5 Family Medicine 3	INTJ (7.1%) 63 Internal Medicine 19 Pediatrics 9 Surgery 8 Family Medicine 7 Anesthesiology 4 Radiology 4 Orthopedics 3
ISTP (4.8%) 42 Internal Medicine 19 Radiology 5 Surgery 4 Emergency Medicine 3 Orthopedics 3	ISFP (1.6%) 14 Surgery 6 Internal Medicine 3	INFP (5.7%) 51 Internal Medicine 21 Family Medicine 7 Emergency Medicine 7 Psychiatry 3	INTP (7.2%) 64 Internal Medicine 19 Surgery 9 Psychiatry 6 Radiology 6 Family Medicine 3 Urology 3
ESTP (2.9%) 26 Internal Medicine 9 Radiology 4 Anesthesiology 3	ESFP (2.9%) 26 Internal Medicine 8 Pediatrics 5 OB/GYN 3	ENFP (8.3%) 74 Internal Medicine 17 Pediatrics 12 Family Medicine 9 Surgery 11 OB/GYN 6 Emergency Medicine 8 Ophthalmology 3	ENTP (6.7%) 60 Internal Medicine 13 Emergency Medicine 10 Orthopedics 6 Surgery 5 Psychiatry 4 Family Medicine 3 Ophthalmology 3 Pediatrics 3 PM & R 3
ESTJ (9.4%) 84 Internal Medicine 27 Radiology 8 Pediatrics 7 Orthopedics 6 Surgery 6 Anesthesiology 5 Emergency Medicine 5 Family Medicine 5 OB/GYN 4 Medicine-Pediatrics 3	ESFJ (5.8%) 52 Internal Medicine 17 Family Medicine 8 OB/GYN 8 Pediatrics 6 Anesthesiology 3 Orthopedics 3 Radiology 3	ENFJ (4.7%) 42 Internal Medicine 13 Family Medicine 5 Pediatrics 4 Anesthesiology 3 OB/GYN 3 Radiology 3	ENTJ (7.4%) 66 Internal Medicine 22 Surgery 8 Family Medicine 8 Emergency Medicine 4 OB/GYN 3 Ophthalmology 3 Orthopedics 3 Radiology 3

Note: Specialties in each box are listed in decreasing numbers of students, with a minimum of 3 students each. However, the percentages and numbers listed are for all students ($N = 891$), including specialties with 7 or fewer students over 6 years (e.g., Radiation Oncology, Neurosurgery, Pathology) and specialties with 2 or fewer students/MBTI type.

Table 2. A Summary of the Statistical Analyses With Significant p Values < .05 Boldfaced. The Numbers of Students With Each Preference Are Indicated.

	E	I	TOTAL	p value	S	N	TOTAL	p value
Int. Med.	126	143	269	.3000	134	135	269	.9514
Surgery	30	55	85	.0067	38	47	85	.3290
Pediatrics	37	36	73	.9068	40	33	73	.4126
Fam. Med.	38	38	76	1.000	28	48	76	.0218
Emergency	27	23	50	.5716	18	32	50	.0477
Orthopedics	18	16	34	.7316	22	12	34	.0863
Radiology	21	27	48	.3865	32	16	48	.0209
Anesthes.	14	11	25	.5485	18	7	25	.0278
OB/GYN	27	8	35	.0013	23	12	35	.0630
Psychiatry	4	12	16	.0455	3	13	16	.0124

	T	F	TOTAL	p value	J	P	TOTAL	p value
Int. Med.	163	106	269	.0005	160	109	269	.0019
Surgery	58	27	85	.0008	50	35	85	.1037
Pediatrics	31	42	73	.1979	53	20	73	.0001
Fam. Med.	40	36	76	.6464	51	25	76	.0029
Emergency	35	15	50	.0047	19	31	50	.0897
Orthopedics	31	3	34	.0001	25	9	34	.0061
Radiology	37	11	48	.0002	33	15	48	.0094
Anesthes.	19	6	25	.0093	22	3	25	.0001
OB/GYN	11	24	35	.0280	26	9	35	.0041
Psychiatry	13	3	16	.0124	3	13	16	.0124

also shows that our data seem consistent with the impression that certain specialties “attract” women and men in different percentages. We noted the following significant gender differences: More men chose Radiology, Surgery, Orthopedics, and Internal Medicine, whereas more women chose OB/GYN and Pediatrics. A future study might examine whether specialties “attract” or exclude/evaluate residency applications from men and women differently.

It is important in discussing these results to keep in mind that the data are from *one* medical school and a

total of 891 students over a 6-year period. These results represent the relationship between psychological type and residency choice and not whether there is or will be success or satisfaction in a chosen area of specialty. These will be interesting questions for a longitudinal follow-up study.

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Table 3. A Summary of the MBTI Preferences for Each Specialty Based Upon the Statistical Significance in Table 2. Preferences With Statistical Significance Are Boldfaced.

SPECIALTY	E	I	S	N	T	F	J	P
Anesthesiology			S		T		J	
Emergency Med.				N	T			
Family Medicine				N			J	
Internal Medicine					T		J	
OB/GYN	E					F	J	
Orthopedics					T		J	
Pediatrics							J	
Psychiatry		I		N	T			P
Radiology			S		T		J	
Surgery		I			T			

Table 4. A Comparison of Specialties by Gender at Temple University School of Medicine (TUSM) From the Graduating Years of 2002 and 2004 Through 2006 and the AMA Database From 2003. Significant *p* Values < .05 are Boldfaced.

Specialty	Female			Male			<i>p</i> value
	<i>n</i>	TUSM%	AMA%	<i>n</i>	TUSM%	AMA%	
Anesthesiology	17	45	21.2	21	55	78.8	.5164
Dermatology	5	83	35.5	1	17	64.4	.1025
Emergency Med.	31	48	20.4	35	52	79.6	.6225
Family Medicine	31	51	30.9	30	49	69.1	.8981
Internal Medicine	81	40	31.1	124	60	68.9	.0027
Medicine-Pediatrics	3	60	n/a	2	40	n/a	.6547
Neurology	8	62	21.6	5	38	78.4	.4054
Neurosurgery	0	0	5.2	4	100	94.8	.0736
OB/GYN	21	91	40.7	2	9	59.3	.0001
Ophthalmology	7	44	15.8	9	56	84.2	.0736
Orthopedics	5	17	3.8	24	83	96.2	.0004
Otolaryngology	1	20	10.3	4	80	89.7	.1797
Pathology	7	70	31.2	3	30	68.8	.2059
Pediatrics	44	72	53.1	17	28	46.9	.0005
Phys. Med. & Rehab	4	40	32.5	6	60	67.5	.5271
Psychiatry	11	48	31.6	12	52	68.4	.8348
Radiation Oncology	2	66	22.9	1	33	77.1	.5637
Radiology	11	28	20.9	28	72	79.1	.0065
Surgery	18	29	13.5	45	71	86.5	.0007
Urology	2	25	4.0	6	75	96.0	.1573

Total = 688 Female = 309 (45%) Male = 379 (55%) $p < .0076$ *p*-values based on chi-square test for equal proportions.

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