Personality and Learning Styles of Final-Year Medical Students and the Impact of these Variables on Medical Specialty Choices

Son Sınıf Tip Öğrencilerinin Kişilik ve Öğrenme Stillerinin Tıpta Uzmanlık Tercihi üzerine Etkileri

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ABSTRACT

Objective: Medical student profile is changing on campuses today and there is a much greater variation in the range of personality type and learning style preferences to be considered. In this study it is aimed to determine the learning styles of medical school students at Gazi University and to find out whether there is any relationship between students’ personality types, learning style preferences and their medical specialty choices.

Methods: The study was conducted on 170 final year students (96.6%) at the Gazi University School of Medicine in the 2011-2012 academic year. The authors used Myers-Briggs Type Indicator (MBTI) to determine the personality traits and Grasha Riechmann Student Learning Style Scale (GRSLS) to establish the learning styles.

Results: During the study, 91.8% of the students declared that they wanted to be a specialist and 4.1% wanted to be a general practitioner in the near future. Most preferred specialty appeared to be dermatology (11.2%) in whole group. Choices of female students who want to be a specialist were dermatology, ophthalmology and obstetrics and gynecology and their distributions were 22.8%, 13.0% and 9.8%, respectively (p<0.05). The most common personality type in all preferred specialty areas was Introverted Sensing Thinking Judging (ISTJ). The students with ISTJ personality type had a higher score on the collaborative and competitive learning style.

Conclusion: Last-year medical students are characterized by a ISTJ personality type in most of the medical specialty preferences. Furthermore, these students have collaborative and competitive learning styles.

Key words: Learning style, medical specialty, medical student, personality type

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ÖZET

Amaç: Günümüzde kampüslerdeki tıp öğrencilerinin profili değişmekte ve kişilik tiplerinde ve öğrenme stili tercilerindeki varyasyonlar dikkate alınmalıdır. Bu çalışmada Gazi Üniversitesi tıp öğrencilerinin öğrenme stillerini ve öğrencilerin kişilik tipleri, öğrenme stilleri ve tıpta uzmanlık tercilerini arasında herhangi bir ilişki olup olmadığını belirlemek amaçlanmıştır.

Yöntemler: Çalışma 2011-2012 akademik yılında Gazi Üniversitesi Tıp Fakültesinde 170 (%96.6) son sınıf öğrencisi ile yapılmıştır. Yazarlar kişilik özelliklerini belirlemek için Myers-Briggs Kişilik Ölçeği (MBKO) ve öğrenme stillerini ortaya çıkarmak için Grasha Riechmann Öğrenci Öğrenme Stili Ölçeği (GROÖSÖ) kullanılmışlardır.

Bulgular: Araştırma sırasında yakayı gecekte öğrencilerin %91.8’i uzman ve %4.1’i genel pratisyen olmak istediklerini açıklamışlardır. Tüm grupta en çok tercih edilen uzmanlık dermatoloji (%11.2) olarak çıkmaktaydı. Uzman olmak isteyen kız öğrencilerin tercileri dermatoloji, oftalmoloji ve kadın doğumdur dağılımları sırasıyla %22.8, %13.0 ve %9.8’dir (p<0.05). Tercih edilen tüm uzmanlık alanlarında en sık kişilik tipi içe Dönük-Duyusal-Düşünme-Yargılama (İDDY) dir. İDDY kişilik tipi olan öğrencilerin işbirlikti ve yarışmacı öğrenme stilli puanları daha yüksektir.

Sonuç: Birçok uzmanlık tercihinde son sınıf tıp öğrencileri İDDY kişilik tipi ile karakterizedir. Ayrıca bu öğrenciler işbirlikti ve yarışmacı öğrenme stilini sahiptir.

Anahtar Sözcükler: Öğrenme stilli, tıpta uzmanlık, tıp öğrencisi, kişilik tipi

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INTRODUCTION

Medical education is a difficult and life-long process both in undergraduate and postgraduate levels. The students are expected to demonstrate competency in areas of technical skills, team working and lifelong learning skills beyond medical education before and after graduation (1,2). In addition to these, the selection of medical specialty is as important as the educational process. The selection of medical specialty is based on many determinants such as personal (e.g., personal and learning styles), cultural, national and international values, academic achievements, finances, lifestyle and role models. Although many factors can influence this choice, personal features may play a stronger role in their specialty choices.

There are many kinds of personality measures used with medical students (3). One of the widely used ones is Myers-Briggs Type Indicator (MBTI). It has been used for assessing personality types of people for decades and hundreds of studies over the past 40 years have proven the instrument to be both valid and reliable. It processing information, and way of making decisions and structuring the world of people and things (Extraversion) or the inner world of ideas and experiences (Introversion). The second dichotomy identifies a person’s preference for gathering information using their 5 concrete senses (Sensing) or by a sixth sense or “hunch” that allows them to recognize patterns and possibilities (Intuition).

The third dichotomy focuses on whether people prefer to make judgments and decisions based on logic and objective data (Thinking) or based on personal values and subjective data (Feeling). The fourth dichotomy identifies whether a person prefers to achieve closure and have things decided (Judging) or whether a person prefers to continue to consider options (Perceiving) rather than reaching a closure. The four MBTI dimensions analyzed are Extraversion-Introversion (E-I), Sensing-Intuition (S-N), Thinking-Feeling (T-F), and Judging-Perception (J-P). Based on the individual’s responses to the questions, a four-letter personality type was generated which consists of four dimensions (e.g., ESFP, INFJ). The validity and the reliability analyses of the Turkish version of MBTI had been conducted elsewhere (15).

The GRSSLSS promotes understanding of learning styles that have six categories: independent students, dependent learners, competitive students, collaborative learners, avoidant learners, and participant learners. The GRSSLSS was made up of 60 items that can be answered on a 5-point Likert Scale and has six sub-scales with 10 items on each scale. The participants are grouped into low, moderate and high on each of the sub-scales (Table 1). Turkish validity and reliability studies of the scale of GRSSLSS had been conducted elsewhere (16).

Table 1. Low, Moderate, and High score definitions based on the norms of each learning scale of GRSSLSS (without dividing scores by 10) (4).

|          | Low     | Moderate | High    |
|----------|---------|----------|---------|
| Independent | 10.0-27.9 | 28.0-38.9 | 39.0-50.0 |
| Avoidant  | 10.0-18.9 | 19.0-31.9 | 32.0-50.0 |
| Collaborative | 10.0-27.9 | 28.0-34.9 | 35.0-50.0 |
| Competitive| 10.0-17.9 | 18.0-28.9 | 29.0-50.0 |
| Participant| 10.0-30.9 | 31.0-41.9 | 42.0-50.0 |

Statistical analyses

Chi-square analyses were used to statistically evaluate significant differences in the medical specialty choices, personality profiles of the students and gender. Kruskal-Wallis test was used to statistically evaluate significant differences in the personality profiles of the students and their learning styles. All tests were considered to be statistically significant when p<0.05.

RESULTS

Specialty, sex and personality

Students’ choices in specialties were determined by asking them “Do you want to study as a general practitioner or a specialist? If a specialist, please indicate.” While 44.9% of students were men, 55.1% were women and 91.8% of the students declared that they wanted to be a specialist and 4.1% wanted to be a general practitioner. The most preferred specialty expressed by students was dermatology (11.2%) (Figure 1).
In examining MBTI personality types by sex, ISTJ was the most common type (41.9%), and no difference was detected between the sexes (Figure 2).

Table 2. Distribution of Medical Specialty Choices by Sex, n=170

| Specialty            | Male (%) | Female (%) | p*  |
|----------------------|----------|------------|-----|
| Dermatology          | 5.3      | 22.8       | 0.001 |
| Radiology            | 12.0     | 9.8        | NS   |
| Psychiatry           | 10.7     | 7.6        | NS   |
| Ophthalmology        | 1.3      | 13.0       | 0.003 |
| ENT                  | 12.0     | 5.4        | NS   |
| Undecided            | 5.3      | 9.8        | NS   |
| Obstetrics & Gynecology | 1.3    | 9.8        | 0.024 |
| Cardiology           | 4.0      | 10.9       | NS   |
| Internal Medicine    | 4.0      | 9.8        | NS   |

*Chi-square test, NS: Non significant

Table 3. Distribution of personality types by medical specialty choice*

| Specialty            | ISTJ (% | INFP (%) | ISFJ (%) | ENFP (%) | ESTJ (%) | INTJ (%) | ISTP (%) | ISFP (%) | Others (%) | p**   |
|----------------------|---------|----------|----------|----------|----------|----------|----------|----------|------------|-------|
| Dermatology          | 43.4    | 18.6     | 7.6      | 2.1      | 6.9      | 5.5      | 2.1      | 4.1      | 9.7        | NS    |
| Radiology            | 38.9    | 22.2     | 0.0      | 11.1     | 0.0      | 11.1     | 5.6      | 0.0      | 11.1       | NS    |
| Psychiatry           | 31.2    | 12.5     | 0.0      | 6.2      | 6.2      | 0.0      | 0.0      | 0.0      | 0.0        | 7.7 NS |
| Ophthalmology        | 53.8    | 38.5     | 0.0      | 0.0      | 0.0      | 0.0      | 0.0      | 0.0      | 0.0        | 7.7 NS |
| ENT                  | 57.1    | 21.4     | 0.0      | 0.0      | 7.1      | 7.1      | 0.0      | 0.0      | 7.1        | NS    |
| Undecided            | 38.5    | 7.7      | 23.1     | 0.0      | 0.0      | 15.4     | 0.0      | 0.0      | 0.0        | 0.025 |
| Ob & Gyn             | 40.0    | 30.0     | 0.0      | 0.0      | 0.0      | 0.0      | 0.0      | 0.0      | 0.0        | 10.0 NS|
| Cardiology           | 40.0    | 30.0     | 0.0      | 0.0      | 0.0      | 0.0      | 0.0      | 0.0      | 0.0        | 10.0 NS|
| Internal Medicine    | 30.8    | 23.1     | 15.4     | 0.0      | 0.0      | 0.0      | 15.4     | 7.7      | 7.7        | NS    |

* Chi-square test, NS: Non significant

Table 4. Distribution of personality types by learning styles (Mean ± SD)

| Personality types | Learning styles | Avoidant | Collaborative | Dependent | Competitive | Participant |
|-------------------|-----------------|----------|---------------|-----------|-------------|-------------|
| ISTJ              | 38.9±0.6        | 29.1±0.7 | 36.4±0.6      | 36.4±0.5  | 31.8±0.8    | 34.5±0.7    |
| INFP              | 40.2±0.6        | 27.4±1.1 | 37.5±1.0      | 37.3±0.6  | 30.2±1.1    | 35.6±1.0    |
| ISFJ              | 38.6±0.7        | 31.2±1.5 | 34.5±1.4      | 35.2±1.4  | 30.8±1.7    | 31.7±1.8    |
| ENFP              | 37.2±0.6        | 26.3±2.3 | 34.0±3.0      | 32.7±3.6  | 34.5±6.9    | 38.0±3.3    |
| ESTJ              | 38.1±1.8        | 29.3±1.9 | 35.9±1.8      | 34.6±1.6  | 28.8±3.7    | 33.2±2.7    |
| INTJ              | 40.9±1.6        | 30.3±1.9 | 38.9±1.2      | 36.8±2.3  | 35.8±3.2    | 38.0±1.4    |
| ISTP              | 38.2±2.0        | 26.5±2.7 | 39.5±2.2      | 39.8±2.1  | 36.2±3.7    | 38.5±1.9    |
| ISFP              | 36.7±1.9        | 27.0±1.3 | 32.0±2.2      | 32.3±1.9  | 33.0±2.7    | 33.7±1.4    |
| Others             | 36.9±1.5        | 32.9±1.4 | 36.2±2.0      | 34.3±1.1  | 27.9±1.9    | 31.5±2.2    |

p NS: non significant
Although this study is based on a single survey in the Faculty of Medicine, it has been informative in terms of revealing the personality and learning style factors affecting medical students’ decision to choose a certain specialty in Turkey. The specialties mostly preferred in previous years, such as plastic surgery, general surgery, and pediatrics, and specialties such as otolaryngology, radiology, and psychiatry. In our study, while male students do prefer radiology, ENT, and psychiatry, female students seek training in dermatology, and ophthalmology. There may be many factors influencing the decision making in choosing a specialty. We have focused on personality types and learning style factors. The medical malpractice law, which has been enforced for the last couple of years in Turkey, may be an influencing factor in deciding on less risky specialties.

Using MBTI, our last year medical students are characterized as Introverted-Sensing-Thinking-Judging (ISTJ) types. The most common MBTI styles for the students in our study correspond nicely to the most common preferences found in other studies conducted with medical students and medical residents (6-9). Individuals who are ISTJ types are characterized as quiet and serious. They earn success by thoroughness and dependability. They are practical, matter-of-fact, realistic, and responsible. They decide logically what should be done and work toward it steadily, regardless of distractions. Also they take pleasure in making everything orderly and organized – their work, their home, and their life (4). Similar to our study, another study found that female physicians had significantly higher sensing components as compared to their male colleagues (10). In addition, a study that analyzed the changes in MBTI types and medical specialty choices over time reported that the proportion of feeling types was the highest and the most permanent among women (11).

Alltogether, specialties and MBTI types revealed that ISTJ was the most common personality type in all specialty areas. However, ISFJ type was significantly higher among emotionally unstable persons as compared to other groups. The difference is related to the feeling component of unemotional and studious behavior may be related to dominant feelings. The results of the study by Stilwell et al. (11) revealed that there is a shift towards judging type over the years among doctors due to an increase in technology and knowledge in all fields of medicine. This study also demonstrated that the physicians used perceiving skills more frequently in examination and diagnosis in the 1950s, but today doctors order tests and demonstrations that the physicians used perceiving skills more frequently in examination and diagnosis in the 1950s, but today doctors order tests and procedures in a more direct and efficient manner.

The majority of our study group consisted of ISTJ type students, and their competitive and collaborative learning style scores are in the high category. The “competitive” learner is classified as a student who learns material in order to perform better than others in the class. They prefer teacher-centered instructional procedures (13). Indeed, the medical students often study the lecture notes for examination by spending more time on the important parts. People with introverted personality type learn with internal reflection and distill one’s thoughts independently (9). Students with collaborative learning styles feel they can learn by sharing ideas or talents. They cooperate with the teacher and like to work with others (13). A study done at the same setting with a different student group revealed high scores in competitive and collaborative learning styles as in our study (17). The students with collaborative learning style are eager to learn and take responsibility for the process of learning. These students are very curious and hands-on (13). This is also a specific feature of thinker persons who are the majority of our study group. According to MBTI thinkers are logical, reasonable, questioning, critical, and tough (18).

Although almost all of the last year students in our institution participated in the study, we have compared the personality preferences and learning styles of students in a single institution. This is the most important limitation of this study.

CONCLUSION

Last year medical students are characterized as Introverted-Sensing-Thinking-Judging types in most of the medical specialty choices. The students having this type of personality have collaborative and competitive learning styles. Although the graduates of medical schools receive the Medical Doctor degree, professional counseling may be beneficial in their career planning. MBTI for specialty choices of last year medical students including personality tests and learning styles may help them have a better near future. Therefore, the establishment of Career Counseling Centers in schools of medicine may be useful.

It is important to keep in mind that the results should not be used in isolation. Medical students and educators are cautioned against over-valuing personality types in the career selection process. To maximize learning, faculty should provide guidance in a manner that allows all students to use or express their individual preferences toward understanding, appreciating, and applying skills.

Conflict of Interest

No conflict of interest was declared by the authors.

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