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ABSTRACT

This study is a continuation of an earlier investigation of personality and medical specialty choice. The earlier study determined that personality differences existed among family practitioners, anesthesiologists, and general surgeons. Based on this initial research, an attempt was made to answer the question of how the personality factors of premedical students who later chose the medical specialty of family practice compared to the personality factors of current family practitioners. The student group consisted of 75 premedical students who chose the medical specialty of family practice. The physician group consisted of 58 family practice physicians. Analysis revealed that the personality profiles for both premedical students who chose family practice and for family practitioners were within the average range on all 16 factors except for Reasoning. Family practitioners are more abstract than concrete in their reasoning abilities. Premedical students fell within the average range for Reasoning and are thus more closely related than the family practitioners to the general population norm group. The results lend support for linking personality and medical specialty choice. Information about personality and medical specialty could be integrated into career development courses for premedical students and used as a mechanism for improving professional identity. (JDM)

Personality Factors and Occupational Specialty Choice

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Career specialty choice should be an area in which vocational psychologists are more involved (Leong & Geisler-Brenstein, 1991). The importance of medical specialty choice is an area that has received attention in the vocational literature, including the development of inventories for helping medical students choose a specialty. Personality is among the variables used to investigate specialty choice within an occupation.

This study is a continuation of an earlier investigation of personality and medical specialty choice by Borges and Osmon (2001). Their study used the 16PF to investigate personality differences of family practitioners, anesthesiologists, and general surgeons. Results showed that personality differences exist between the three medical specialty groups. Based on the findings of their study, Borges and Osmon (2001) suggested that creating personality profiles of physicians might be helpful to medical students who are having difficulty selecting a medical specialty. These profiles then can be used to help premedical and medical students gain an understanding of how similar or different they are from physicians in particular specialty areas. This could have

important implications for improving selection methods and decreasing attrition rates during medical school and residency.

The study by Borges and Osmon (2001) describes personality factors of physicians who have already selected a medical specialty, but what do we know about premedical student personality and how it relates to choice of specialty? This study attempts to answer the question of how the personality factors of premedical students who later choose the medical specialty of family practice compare to the personality factors of family practitioners.

Methodology

Participants

Participants for this study were premedical students and physicians. The student group consisted of 75 premedical students in a combined bachelor's-M.D. degree program who graduated medical school between 1995-2000 and who chose the medical specialty of family practice. Their curriculum was a six or seven year program that culminates in the receipt of a bachelor's degree from one of three large state universities and an M.D. degree from the medical school. Upon graduating from medical school, these individuals entered family practice residency training programs.

The physician group consisted of 58 family practice physicians. Participants were physicians who were in the process of completing or who had completed a residency in family practice.

Measures

The 16 Personality Factor (16PF; 4th ed. & 5th ed.) questionnaire was used to describe the personality factors of premedical students who chose family practice as their medical specialty and the personality factors of family practitioners. The 16PF (5th edition) is self-administered and contains items that comprise the 16 primary factors: Warmth, Reasoning, Emotional Stability, Dominance, Liveliness, Rule Consciousness, Social Boldness, Sensitivity, Vigilance, Abstractedness, Privateness, Apprehension, Openness to Change, Self-Reliance, Perfectionism, and Tension. A completed 16PF provides a set of raw scores on 16 independent bipolar scales that are converted to standard scores (stens) (Reeve, 1980). Sten scores range from 1-10 with a mean of 5.5 and a standard deviation of 2.0. Internal consistency estimates for the 16PF range from .64-.85 with an average of .74. Test-

retest reliability estimates have been reported to be approximately .80 for a 2-week interval and .70 for a 2-month interval (Russell & Karol, 1994).

Procedure

For the premedical students, data collection took place during a first-year orientation program, while data collection for family practitioners involved mailing questionnaires directly to physicians. Data from the premedical students were collected from 1989-1994 using the 16PF (4th edition). The 16PF (5th edition), however, was used for subsequent collection of data from physicians in 1998, since it was the most current form of the instrument. Conn and Rieke (1994) have concluded that the 4th and 5th editions of the 16PF measure the same traits. For purposes of data analyses, the 16PF (4th edition) scores were converted to 16PF (5th edition) scores (Mead & Bedwell, 2001).

Results

Descriptive statistical analyses revealed that personality profiles for both premedical students who chose family practice and for family practitioners were within the average range on all 16 factors except for Reasoning (See Table 1). The mean score for Reasoning falls outside the average range for family practitioners compared to the general population norm group and indicates that family practitioners were more abstract than concrete in their reasoning abilities. Premedical students, however, fell within the average range for Reasoning, and, thus, are more similar to the general population norm group.

An analysis of group means and standard deviations to determine whether the groups were significantly different on any of the 16 factors was conducted using a t-test for independent groups (Table 1). The original significance level of $p < .05$ was adjusted to $p < .003$ using the Bonferroni procedure to control for experiment-wise error since multiple comparisons were made. Significant differences between group means for premedical students who later became family practitioners and physicians who were family practitioners existed for 6 of the 16 personality factors. Results showed that these premedical students were significantly different from family practitioners regarding the personality factors of Reasoning, Emotional Stability, Liveliness, Rule-Consciousness, Openness to Change, and Perfectionism.

Discussion

Premedical students who later chose to be family practitioners share similarities and differences with current

family practitioners. In general, these premedical students were more concrete thinkers; more reactive and emotionally changeable; more lively, animated and spontaneous, less conforming; less open to change; and more flexible and tolerable of disorder compared to family practitioners. These groups were similar with regard to the personality factors measuring Warmth, Dominance, Social-Boldness (or inhibition), Sensitivity, Vigilance, Abstractedness (or imagination), Privateness, Apprehension, Self-Reliance, and Tension.

Results of this study suggest that with regard to Reasoning premedical students may begin as concrete thinkers but become more abstract in their reasoning abilities as they progress though medical school. Abstractedness, or one's ability to be imaginative and idea-oriented, may be a factor that is common among premedical students who choose family practice as well as in physicians who have specialized in it. Data from this study are further supported by the findings of Borges and Osmon (2001) who suggested that family practitioners are more imaginative, idea-oriented, and less practical when compared to general surgeons and anesthesiologists. Rule-Consciousness was also found to differentiate family practitioners from general surgeons and anesthesiologists in the Borges and Osmon (2001) study. However, in the present study, given that Rule-Consciousness was higher for family practitioners compared to premedical students who later selected family practice, it may be that a heightened sense of Rule-Consciousness develops in premedical students as they work toward becoming a family practitioner. No comparisons were made between the premedical students who chose general surgery (N=12) or anesthesiology (N=2) and physicians in these specialties (N=52 for general surgeons and N=51 for anesthesiologists) because of differences in sample sizes.

A possible explanation for some of the differences in personality between the two groups is age and maturity. The premedical students who were surveyed had just completed high school and were beginning their first year of college. The family practitioners, however, had already completed medical school and either were in the final phase of medical training (i.e. residency) or were practicing physicians. It would be interesting to readminister the 16PF to the premedical students who participated in this study (since they are currently either in residency or are practicing as a physician) to determine if their

personality profile has changed from the time they were a premedical student. A limitation of this study is that conversion formulas were used to transform 16PF data from 4th to 5th edition and, therefore, the level of correspondence between the two editions could affect results of this study. However, according to Conn and Rieke (1994) who concluded that the 16PF 4th and 5th editions measure the same traits, this limitation may not be a major threat to this study.

In conclusion, Zimny and Thale (1970) suggested that the practical goal of research concerning selection of medical specialty should be to provide medical students with objective information about medical specialties. This study lends support for linking personality and medical specialty choice. Part of the information that could be provided to students struggling to choose a medical specialty is to compare their similarities and differences in personality with physicians who have chosen the specialty that the student may be considering. Information about personality and medical specialty can be integrated into career development courses for premedical students and can be used as a mechanism for improving professional identity (Henry, 1993). Additionally, information about personality and medical specialty may facilitate counseling services geared toward medical specialty selection (Zimny & Senturia, 1973). It is recommended that future studies investigate how personality factors of premedical students who choose specialties other than family practice compare to personality factors of physicians in those specialties.

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Table 1

Personality Differences between Premedical Students Who Later Chose Family Practice and Physicians Who are Family Practitioners

	Premedical student (N=75)		Physician (N=58)		
Personality Factor	M	SD	M	SD	t
Warmth	5.21	1.77	4.93	1.99	.86
Reasoning	5.09	1.76	7.88	1.74	-9.11*
Emotional Stability	3.97	1.69	5.50	1.85	-4.96*
Dominance	4.85	1.81	5.48	2.36	-1.74
Liveliness	6.25	1.68	5.09	1.72	3.94*
Rule-Consciousness	4.36	2.06	6.21	1.66	-5.56*
Social-Boldness	4.73	1.86	4.90	2.19	-4.65
Sensitivity	4.37	1.85	5.34	2.12	-2.81
Vigilance	6.07	2.00	5.33	2.05	2.10
Abstractedness	5.56	1.66	5.53	2.01	.08
Privateness	4.87	1.95	5.09	2.08	-.63
Apprehension	6.17	1.66	6.31	1.95	-.44
Openness to Change	4.63	1.69	5.91	2.26	-3.76*
Self-Reliance	5.61	1.68	5.81	1.99	-.62
Perfectionism	4.40	1.87	5.64	2.19	-3.51*
Tension	5.92	1.75	5.62	1.52	1.04

*$p < .003$, $df=131$.

Note. Scores on the 16PF are reported as sten scores, which range from 1-10 with a mean of 5.5 and a standard deviation of 2.0.

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