Personality Differences in Incoming Male and Female Medical Students

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This study represents the first reporting of aggregate data of a longitudinal study designed to identify correlations between medical student personality traits and type of residency, later selected. It is a multisite project involving four US medical schools over a period of nearly ten years. The first phase of study analysis has centered upon determinations of how incoming male and female medical students differ with regard to personality, as measured by the Sixteen Personality Factor Questionnaire (16PF) 5th Edition (Catell, Catell, & Catell, 1993). Although previous studies of personality differences of male and female medical students have been conducted, typical samples have represented only one medical school (Calkins, Willoughby, & Arnold, 1992; Meit, Meit, & Yasek, 1999) making it difficult to generalize findings. Additionally, many earlier studies are becoming dated and/or employ measures no longer in widespread use (McGrath & Zimet, 1977; Shen & Comrey, 1995). The current study sought to test the hypothesis that relevant personality differences do exist between male and female medical students and discuss the implications of any such findings. Such an empirical scrutiny is particularly pertinent given a November 2003 Press Release by the Association of American Medical Colleges (AAMC) announcing, “for the first time ever” women have made up the majority of medical school applicants (AAMC, 2003).

Method

Sample

Two thousand one hundred and forty four first-year medical students (1008 females and 1136 males) at four medical schools completed the 16PF between 1995 and 2003.

Procedure

Participants were invited to participate in the study during new student orientation or during the first semester of medical school. Administration of the 16PF was standardized across sites. At all schools, the purpose of the study was explained as part of obtaining informed consent in accordance with Institutional Review Board (IRB) approval and procedures. Each medical school received approval from their respective IRBs.

Instrument

The 16PF measures the primary components of personality (Russell & Karol, 1994). It has been described as an instrument that assesses adult personality in terms of reasonably independent and essentially normal categories or "factors" and which can be used in a variety of settings to measure life behaviors (Krug & Johns, 1990). The 16PF 5th Edition is a self-administered questionnaire containing 185 multiple choice items which measure 16 bipolar factors (Russell & Karol, 1994). Warmth, Reasoning, Emotional Stability, Dominance, Liveliness, Rule Consciousness, Social Boldness, Sensitivity, Vigilance, Abstractedness, Privateness, Apprehension, Openness to Change, Self-Reliance, Perfectionism, and Tension comprise the primary factors. The 16PF has a fifth-grade reading level (Russell & Karol, 1994). Its normative sample (N=2,500) ranged in age from 15-92 years and in education from ranging 7-25 years of schooling. 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 (Krug & Johns, 1990).

Results

A multivariate analysis of variance (MANOVA) was performed to determine if significant gender differences existed for medical students on personality traits, as measured by the 16PF. Results of the MANOVA (see Table 1) revealed significant differences ($p < .05$) for 12 of 16 factors.

Discussion

Results of this study revealed that distinct personality differences existed between male and female medical students. Results suggest that female medical students are more warm and outgoing (Warmth); more dutiful (Rule-Consciousness); more sensitive (Sensitivity); more self-doubting and worried (Apprehension); more organized and self-disciplined (Perfectionism); and more tense and driven (Tension) than their male counterparts. On the other hand, male medical students appear to be more adaptive and mature (Emotional Stability); more forceful and assertive (Dominance); more suspicious and skeptical (Vigilance); more imaginative and idea-oriented (Abstactedness); more private and discreet (Privateness); and more solitary and individualistic (Self-Reliance) as compared to female medical students.

It is possible that revealed personality differences between male and female medical students may play a role in later choice of specialty. As such, future analyses of our data set will seek to determine the relationship between such gender differences and later choice of specialty.

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Table 1

Means and Standard Deviations of Personality Factors for Males and Females

	Males		Females			
Personality Factor	M	SD	M	SD	F	Significance
1. Warmth	4.90	1.67	5.97	1.64	220.33	.000*
2. Reasoning	8.02	1.45	7.94	1.49	1.73	.189
3. Emotional Stability	6.42	1.78	6.00	1.80	29.30	.000*
4. Dominance	5.67	1.99	5.18	2.15	29.58	.000*
5. Liveliness	6.32	1.61	6.22	1.66	1.95	.163
6. Rule-Consciousness	5.18	1.84	5.53	1.77	9.72	.000*
7. Social Boldness	5.75	1.94	5.81	2.08	.52	.471
8. Sensitivity	4.15	1.67	6.26	1.71	829.38	.000*
9. Vigilance	5.92	1.76	5.54	1.77	24.37	.000*
10. Abstractedness	5.74	2.00	5.23	1.95	36.31	.000*
11. Privateness	5.30	1.90	4.87	2.07	24.09	.000*
12. Apprehension	5.37	1.86	6.31	1.88	133.98	.000*
13. Openness to Change	6.34	1.96	6.44	1.98	1.35	.245
14. Self-Reliance	5.23	1.71	5.03	1.74	6.81	.009*
15. Perfectionism	5.19	1.88	5.68	1.95	34.91	.000*
16. Tension	4.93	1.78	5.29	1.74	22.55	.000*

*p<.05