

ability and validity. The test-retest reliability was demonstrated to be between 0.78 and 0.92, and its correlation coefficients of the 13 scales to the Gee Personality Instrument, a frequently adopted tool for the assessment of personality, were shown to be between 0.64 and 0.85.<sup>18</sup>

### Data Analyses and Statistical Methods

Descriptive analyses were initially conducted to determine a general personality profile of medical students at Taipei Medical University. Mean and standard deviation on 13 personality traits were employed to describe gender and year differences, with Chi-square analyses adopted to verify whether differences were statistically significant. Followed by the presentation of proportions above or below the norm for each of the 13 personality scales, regression analyses were conducted to estimate the regression coefficient and its 95% confidence interval (95% CI) for the 13 scale scores and the 5 personality types on variables of interest, after controlling for the effects of other covariates in the model.

Finally, a general picture of the personality profile of medical students was drawn and scrutinized, with factor analysis additionally utilized to examine the factorial validity of the personality structure of these medical students. More specifically, because the "Lie" scale was more to verify the validity of the responses rather than being a faithful personality trait, the 12 personality characteristics, excluding the Lie scale, were factor-analyzed utilizing the Principal Axis Factoring method. The factors extracted were then rotated using the Oblimin with Kaiser Normalization methods.

## RESULTS

The 759 medical students recruited for our sample consisted of 566 (74.6%) males and 193 (25.4%) females, with 104, 128, 118, 146, 125, and 138 students in years 1 to 6, respectively. The response rates ranged from 68.0% (the 1<sup>st</sup> year) to 94.8% (the 4<sup>th</sup> year).

Table 1 presents the mean and standard deviation of each of the 13 scale scores by gender. Results from the linear regression analyses were further used to ex-

amine gender effects after the year factor was held constant. As is shown, males statistically significantly possessed higher scores on the General Activity (regression coefficient  $\beta = 1.2$ ;  $p < 0.01$ ), Ascendancy ( $\beta = 1.3$ ;  $p < 0.01$ ), Social extraversion ( $\beta = 0.8$ ;  $p < 0.05$ ), and Rhythymia ( $\beta = 1.0$ ;  $p < 0.01$ ) scales and lower scale scores on the Depression ( $\beta = -1.4$ ;  $p < 0.001$ ), Cyclic tendency ( $\beta = -0.9$ ;  $p < 0.01$ ), Inferiority feelings ( $\beta = -1.2$ ;  $p < 0.001$ ), and Nervousness ( $\beta = -1.9$ ;  $p < 0.001$ ) scales. Therefore, male medical students were shown to be more vigorous, dominant, socially extroverted, and relaxed, while female medical students were more likely to display traits of depression, cyclic tendencies, inferiority, and nervousness, compared to their male peers.

In exploring differences in the 13 personality traits by year with the gender effects held constant, it was found in the linear regression analyses with the reference group of 1<sup>st</sup>-year freshmen, that the 3<sup>rd</sup>-year students were significantly more likely to consider things in an optimistic and extroverted way ( $\beta = 1.2$ ;  $p < 0.05$ ). In addition, aggressive scores were observed to be higher for students in the 3<sup>rd</sup> and 6<sup>th</sup> years (both  $\beta = 1.0$ ;  $p < 0.05$ ). The 4<sup>th</sup>-year participants alone were less likely to feel inferior ( $\beta = -1.1$ ;  $p < 0.05$ ). Finally, the Lie scale scores were significantly higher for students in the 6<sup>th</sup> year ( $\beta = 1.1$ ;  $p < 0.01$ ).

In Table 2, proportions of the rates of each of the 13 personality scales are presented. While a "lower" rate indicates that the scale scores are lower than the norm, a "higher" rate denotes that the personality trait was more dominant for participants allocated to this category. The 'norm' here and in all of the following indicates the normative group collected and established in this personality instrument development. The personality profiles of medical students in our study were thus compared with those who studied in regular colleges/universities. The results demonstrate that more than half of the students presented lower scale rates on Ascendancy (56.9%), Thinking extraversion (67.5%), Subjectivity (81.3%), Uncooperativeness (73.4%), Aggressiveness (59.2%), and Inferiority feelings (79.7%) scales. This implies that certain patterns of personality profiles might exist in the medical students we sampled.