Association Between HEXACO Personality Traits and Medical Specialty Preferences in Mexican Medical Students

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Abstract

Background: Medical specialty is a critical choice in a physician's life because it determines their professional future and medical practice. Some are motivated to choose a specific specialty based on the monetary gain it can provide; others are inspired by seeing the work performed by a physician or a patient's recovery. It is not uncommon to stereotype doctors' personalities by their specialty. Methods: This was a cross-sectional survey study in which we administered the 100-item HEXACO-Personality Inventory-R to 292 medical students between September 2018 and March 2019. We evaluated six different domains of personality traits. We also included questions about their medical specialty of choice, their least preferred specialty, and the motivation behind these choices. The participants included 175 women (59.9%) and 117 men (40.1%). Results: When participants were asked about their preferred type of medical specialty, 52.4% indicated a preference for surgical specialties (surgical group) versus 47.6% who preferred clinical specialties (clinical group). We found that the surgical group showed a tendency toward higher scores for the extroversion ($p = 0.004$) and organization ($p = 0.004$) scales; while the clinical group presented higher scores in the honesty–humility ($p = 0.038$), emotionality ($p = 0.048$), and agreeableness ($p = 0.014$) scales. We identified critical differences within the overall group of medical students by sex and between medical specialty preference. Conclusions: Some classical stereotypes were confirmed by our results, such as surgical specialists being more prone to being extroverted and organized, while clinical specialists were prone to being more introverted, anxious, and more emotionally attached to their patients.

Background

The choice of medical specialty is critical in a physician's life because it determines their professional future and medical practice. Each specialty requires at least three, and in some cases six, years of specialized training after obtaining a medical degree, which means that for a medical student to make the best of their career, it is crucial to make the correct decision about their specialty.

To many physicians, being a specialist represents not only a career choice but also, from a social standpoint, an enhancement in their quality of life and the availability of new employment opportunities. Some healthcare professionals are motivated to choose a specific specialty based on the monetary gain it can provide; others are inspired by seeing the work performed by another physician or by a patient's recovery (1). It was believed that many medical students would choose a high-paying specialty because of their loan debt or their goals for their future lifestyle. However, in recent years, medical residents appear to prefer a controlled lifestyle rather than to train for a medical specialty that has a busy or uncontrolled schedule, such as surgery or gynecology (1).

It is not uncommon to stereotype doctors by their specialty, primarily classified by surgical and clinical specialties: surgeons are often seen as confident, practical, dynamic, less anxious, arrogant, and prone to impulsive and aggressive behavior, whereas hospital-based specialists are seen as intellectual, calm, analytic, slow at taking decisions, less sociable, and more anxious (2–5). The media usually reinforce these stereotypes in the medical characters of series such as Dr. House, Grey's Anatomy, or Scrubs; even a quick Google search for "medical specialty stereotypes" can bring up some common examples. This association between specialty choice and personality traits is often exaggerated but is consistent with the behavior of some medical students and specialists.

Several models have been used to analyze personality in medical residents and students, including the Big Five Model (BFM) (6,7). The BFM is used to measure five areas of personality (extroversion, agreeableness, conscientiousness, emotional stability (also known as neuroticism), and openness/intellect (8,9). Similarly, the HEXACO inventory is a personality analysis model first proposed by Ashton and Lee in the early 2000s (10–12), which evaluates six domains of personality: honesty–humility, emotionality, extroversion, agreeableness, conscientiousness, and openness to experience. Honesty–humility assesses the person's tendency to manipulate or lie to others to obtain a benefit, their modesty and their interest in wealth or social status. Emotionality assesses the person's tendency to feel anxious, fearful of physical danger, and their need for emotional support from other people. Extroversion assesses the person's confidence and response to social interactions. Agreeableness assesses the person's response toward other people in terms of forgiveness, cooperation, and temper control. Conscientiousness assesses the person's tendency to be organized in their environment and schedule, and their workplace diligence. Openness to experience assesses the person's appreciation of art and nature, their creativity, and their curiosity. Each personality domain analyzes four different personality traits (also called facets), resulting in a total of 24 personality facets, plus "altruism" as an interstitial scale.

There are positive correlations between the facets analyzed by each of these two personality analysis models: the BFM neuroticism scale is related to the HEXACO extroversion, emotionality, and agreeableness scales; and the BFM agreeableness scale is related to the HEXACO emotionality, agreeableness, and honesty–humility scales (13).

Few studies have assessed the personality traits of medical personnel or medical students (6,14). In the present study, we aimed to identify any associations between the HEXACO personality traits and the medical students' preferred specialty.

Methods

Aims

This study aimed to identify any association between a student's HEXACO personality traits and their medical specialty preference or sex. A secondary objective was to attempt to describe the motivation behind their choice of a medical specialty.

Design

This was a cross-sectional survey study that evaluated different personality traits using the 100-Item HEXACO–Personality Inventory–R (Self-report Form) in a sample of medical students.

Sample

The required sample size was calculated using an infinite population formula, with an α error of 0.05 and β of 0.20, to obtain a required sample size of 222 medical students. The survey was applied to 292 medical students, whose demographic information is outlined in Table 1. The survey was applied between September 2018 and March 2019.

Instrument

We used the authorized Spanish translation of the 100-Item HEXACO–Personality Inventory–R (Self-report Form) (11,12). This instrument measures six different personality domains each with four underlying facets:

Honesty–humility (sincerity, fairness, greed avoidance, and modesty)

Emotionality (fearfulness, anxiety, dependence, and sentimentality)

Extroversion (social self-esteem, social boldness, sociability, and liveliness)

Agreeableness (forgiveness, gentleness, flexibility, and patience)

Conscientiousness (organization, diligence, perfectionism, and prudence)

Openness to experience (aesthetic appreciation, inquisitiveness, creativity, and unconventionality).

An interstitial scale was also used to measure altruism.

In our survey, we included questions about the participants' medical specialty of choice. Forty-two medical specialties were categorized into two groups: clinical or surgical. These specialties correspond to the main specialties available (and their respective subspecialties) within the medical residence training that students can apply to undertake after obtaining their medical degree. The survey also included a 4-item question asking for the motivation for their choice (family influence, other specialist's influence, monetary motivation, or personal interest). We prepared an online form of the survey and distributed it to medical students via social media, medical congresses, and to the authors' students and acquaintances. All survey forms were completed fully, we did not exclude any participant. The internal reliabilities of the domains within the study were as follows: honesty–humility α: 0.81, emotionality α: 0.82, extroversion α: 0.81, agreeableness α: 0.81, conscientiousness α: 0.81, and openness to new experiences α: 0.81.

Data analysis

Data were analyzed using the Statistical Package for Social Sciences (IBM Corp. Armonk, NY), Version 23.0 for Windows. Descriptive analyses included proportions, means, and standard deviations. Inferential analysis of categorical variables was performed using the chi-squared test or Fisher's exact probability test or analysis of variance, as appropriate. Student's t test was used to analyze continuous variables. Binary logistical regression was used to define the likelihood of an association between a personality scale or facet and the participant's preferred specialty or their sex. A probability level of $p < 0.05$ was considered significant.

Results

Personality differences

Clinical vs surgical group

Comparison of the clinical and surgical groups identified that the clinical group had significantly higher scores for the honesty–humility scale ($p = 0.027$), and scored higher in the greed-avoidance facet ($p = 0.018$) and modesty facet ($p = 0.001$). The clinical group also had a higher overall score for the emotionality scale, with a significantly higher score for the fearfulness facet ($p = 0.028$). For the extroversion scale, the surgical group had significantly higher overall scores ($p = 0.001$) and scores for the social self-esteem ($p = 0.009$), social boldness ($p = 0.003$), and sociability ($p = 0.031$) facets. The clinical group showed significantly higher overall scores for the agreeableness scale ($p = 0.047$) and for the flexibility facet ($p = 0.008$). The surgical group presented higher overall scores for the conscientiousness scale, with the difference being significant for the organization facet ($p = 0.004$). Both groups had similar results for both the openness to experience and altruism scales (Tables 2 and 3).

A binary logistic regression model was constructed by entering the six main HEXACO scales and the altruism scale. Using the surgical group as the reference group, the model found significant differences between surgical and clinical groups for the extroversion scale (p = 0.004; relative risk [RR] 2.12, 95% confidence interval [CI] 1.26–3.57), agreeableness scale (p = 0.014, RR 0.52, 95% CI 0.31–0.87), honesty–humility scale (p = 0.038, RR 0.64, 95% CI 0.38–0.97), and emotionality scale (p = 0.048 RR 0.60, 95% CI 0.36–0.99).

Sex differences

When we compared the HEXACO scores for men and women, we found that female students had significantly higher scores for the honesty–humility scale (p = 0.003), and the fairness (p = 0.009) and modesty (p = 0.001) facets. Similarly, female students had significantly higher scores for overall emotionality (p = 0.001) and all the facets of emotionality including fearfulness (p = 0.001), anxiety (p = 0.001), dependence (p = 0.003), and sentimentality (p = 0.001). Male students showed overall higher scores for the extroversion scale, with a significant difference in the social boldness facet (p = 0.025). Male students had overall higher scores for agreeableness and conscientiousness than female students, but these differences did not reach statistical significance. For the openness to experience scale, male students had higher scores than female students, and significant differences were detected for aesthetic appreciation (p = 0.004) and inquisitiveness (p = 0.017) facets. Finally, female students showed significantly higher scores than male students on the altruism scale (p = 0.001) (Tables 2 and 4).

Binary logistical regression analysis comparing the HEXACO domains in men and women. Using the women group as the reference group, the model showed significant differences between the sexes for emotionality (p = 0.001, RR 2.78, 95% CI 1.61–4.82), and honesty–humility (p = 0.005, RR 1.98, 95% CI 1.23–3.19).

Specialty choice

When we asked the medical students about their preferred type of medical specialty, 139 students (47.6%) answered that they preferred clinical specialties whereas 153 students (52.4%) preferred surgical specialties. By sex, 92 female (52.5%) and 61 male students (52.1%) preferred surgical specialties, while 83 female (47.4%) and 56 male students (47.8%) preferred clinical specialties. These differences were not significant (p = 0.942).

When students were classified by stage of study, 75 students (53.1%) attending the first half of medical school and 64 students (42.3%) attending the second half of medical school preferred clinical specialties, while 66 students (46.8%) attending the first half of medical school and 87 students (57.6%) students attending the second half of medical school preferred surgical specialties. This difference was not significant (p = 0.079).

We asked about the students' motivation for choosing a specialty. The primary motivation for 271 students (92.8%) was personal interest in the specialty, followed by monetary considerations for 11 students (3.8%), influence of another specialist for 6 students (2%), and family influence for 4 students (1.4%).

When the information was stratified by specialty, 137 (89.5%) of the surgical group stated that they had selected their specialty based on personal interest, 8 (5.2%) based on a monetary motivation, 6 (3.9%) had been influenced by another specialist, and 2 students (1.3%) because of family influence. Similarly, 134 students (96.4%) of the clinical group had selected their specialty based on personal interest, 3 (2.1%) from a monetary motivation, and 2 (1.4%) because of family influence. There were no significant differences between the groups (p = 0.054).

Discussion

During their training, medical students experience what it is like to practice different medical specialties, ranging from hospital-based specialties such as internal medicine, pathology, or psychiatry, to surgical specialties such as general surgery, gynecology, or traumatology. Although certain personality characteristics can be found associated with all medical specialties, physicians can present outlying personality traits and are not bound to a "default" personality. In the present study, we aimed to evaluate whether there was a relationship between students' expected personality traits and their selection of medical specialties.

The primary objective of our study was to evaluate any association between personality characteristics and preference for a particular type of specialty. Previous studies have suggested that surgeons tend to be more confident, bolder, and less anxious than clinical specialists (2,4,15). The students in our study who had a preference for surgical specialties could be described as less modest, more extroverted, more diligent, more organized, and overall less emotional, than their clinical counterparts. Hughes et al. (6) analyzed the association of BFM scores with performance in surgical specialties. They found that higher scores for the extroversion, conscientiousness, and emotional stability scales could predict better performance during surgical training. Coincidentally, these are the scales that we found to score higher in our surgical preference group, suggesting that these traits not only support the participants' surgical preference but could also be a prominent factor in their performance during their professional practice. In contrast, we found that students with a clinical specialty preference seemed to be more patient, gentle, and have a stronger overall emotional response, which could translate to the stronger emotional bond between the patient and physician that is often found in clinical specialists compared with surgical specialists (3,4,7,16).

The binary logistical regression analysis identified significant differences between the groups with surgical or clinical specialty preference, indicating that having a high score for the extroversion scale could increase the likelihood that a student would prefer a surgical specialty, whereas having higher

scores for the emotionality, agreeableness, and honesty–humility scales could increase the likelihood of a preference for clinical specialties.

Our results indicated that the preferences of medical students are evenly distributed between clinical and surgical specialties, and that this equality applies to both sexes and to those within the first and second halves of medical school. In contrast, previous studies reported a higher level of preference for clinical type specialties (4,17–20). Most of our participants had selected their specialty type because of personal interest, rather than from monetary motives or because of the influence of others (either specialists or family members); this seems to be similar to the results of previous studies (7,19). Guraya & Almaramhy (19) explored the possibility that the selection could be influenced by whether the specialty was an innovative field in current medicine or had research potential; however, it seems that the primary factor determining the motivation behind a student's choice is personal interest in the relevant medical field.

We found a significant difference between the personalities of men and women in our student sample, mainly in the honest–humility, emotionality, and altruism scales; this finding is similar to the results of a study by Hojat & Zuckerman (4), but in contrast to those obtained by Kwon & Park (7), who found no difference between sexes in their sample. However, a study by Mullola et al. (21) found that female specialists scored higher for extroversion and conscientiousness than male specialists, while Weisberg et al. (22) analyzed BFM scores by sex and reported that although women had a tendency to score higher for agreeableness, extroversion, and neuroticism; there were no differences between the sexes for the conscientiousness and openness scales. These findings differ from our results indicating that female students had lower scores than men for extroversion but similar scores for conscientiousness and agreeableness.

Differences between medical and nonmedical university students

We compared the results of our medical student sample with those for the nonmedical university students surveyed by Lee & Ashton (23), in an attempt to identify any difference between the two types of undergraduate students (Table 5). Overall, our sample appears to have higher mean scores than that in Lee & Ashton's study for most of the facets within the honesty–humility scale (sincerity, fairness, greed avoidance), the openness to experience scale (aesthetic appreciation, inquisitiveness, and creativity), and all of the facets in the conscientiousness scale. In contrast, our student sample seemed to have lower mean scores for all facets of the emotionality scale and most of the facets of the extroversion scale (social self-esteem, sociability, and liveliness). Interestingly, our student sample appears to be less gentle, patient, and altruistic than nonmedical students. In our study, both men and women reported higher scores for all facets of honesty–humility, conscientiousness, and openness to experience, while their scores for the facets of emotionality and agreeableness were lower than those reported by Lee & Ashton (Table 4).

There are only a small number of studies using the HEXACO personality inventory to assess the personality traits of physicians or medical students (6,14). We encourage more researchers to use this inventory because it complements the traits usually assessed by the BFM, and in addition evaluates honesty and humility, which could prove to be of great importance for further dissection of the personalities of future and practicing physicians.

Study Limitations

We intended to perform an analysis of individual medical specialties, but the small number of participants made it difficult to achieve an adequate sample within each specialty. Once we reach an adequate number of participants who aim to apply for each of the various specialties available, we plan to perform a personality analysis for each specialty with the aim of identifying its core characteristics.

Conclusion

We found differences in the studied personality domains within groups of medical students stratified by sex or by medical specialty preference. The surgical preference group appeared to be more likely to be extroverted and organized, while the clinical group was more likely to be introverted, anxious, and emotionally attached to their patients.

List Of Abbreviations

Big Five Model (BFM)

Declarations

Ethical considerations

Written consent was obtained from each research participant before the study, ensuring the protection of their privacy, confidentiality, and anonymity. The study protocol was approved by the Ethics and Research Committee of the Hospital de Especialidades of the Centro Médico Puerta de Hierro with the register HECMPD/HEXACO/2018/prot/002. The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional committees on human experimentation and with the Helsinki Declaration of 1975, as revised in Fortaleza, Brazil 2013.

Consent for publication

Not applicable

Availability of data and materials

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Competing interests

The authors declare that they have no competing interests.

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The authors declare that no funding was received in the present study.

Authors' contributions

FJBC conceived of the presented idea. VBJL and FJBL contributed with the creation of the survey's online form. IVR, VSCC, VASL, TJCV, CCLA, BAGA assisted with the student recruitment process and distribution of the online form to students and medical congresses. RCMA, AOCF, GMV, CFO, and AGO coordinated the recruitment process and distributed the online form to medical students. VBJL, IVR, CCLA, BAGA assisted with the creation and management of the database. FJBC, GACC, GCC, CFO, and AGO contributed to the design and implementation of the research, to the analysis of the results and to the writing of the manuscript. All authors read and approved the final manuscript.

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Tables

Table 1. Participants' demographic information

Age (years) (mean standard deviation)	23.19 4.5
Sex	
Female	175 (59.9%)
Male	117 (40.1%)
Semester	
First	3 (1.0%)
Fourth	24 (8.2%)
Fifth	114 (38.9%)
Sixth	2 (0.7%)
Seventh	6 (2.0%)
Eighth	7 (2.4%)
Ninth	34 (11.6%)
Eleventh	102 (35%)

Table 2. Comparison of mean scores for HEXACO scales by sex and specialty choice.

Gender	No.	(H)	*p* value	(E)	*p* value	(X)	*p* value	(A)	*p* value	(C)	*p* value	(O)	*p* value	Altruism	*p* value
Female	156	3.58 ± 0.54	0.003	3.23 ± 0.54	0.001	3.30 ± 0.54	0.334	2.90 ± 0.59	0.843	3.73 ± 0.51	0.911	3.74 ± 0.48	0.666	3.77 ± 0.64	0.001
Male	104	3.37 ± 0.64		2.90 ± 0.50		3.36 ± 0.51		2.91 ± 0.54		3.74 ± 0.59		3.77 ± 0.46		3.49 ± 0.74	
Specialty choice															
Clinical	139	3.58 ± 0.58	0.027	3.15 ± 0.54	0.101	3.22 ± 0.53	0.001	2.97 ± 0.59	0.047	3.69 ± 0.55	0.155	3.74 ± 0.49	0.582	3.66 ± 0.68	0.951
Surgical	154	3.42 ± 0.59		3.05 ± 0.55		3.42 ± 0.51		2.84 ± 0.55		3.78 ± 0.53		3.77 ± 0.46		3.65 ± 0.70	

Scales: Honesty-Humility (H), Emotionality (E), Extraversion (X), Agreeableness (A), Conscientiousness (C), Openness to experience (O)

Table 3. Difference in HEXACO scores by specialty type.

	Specialty type		
HEXACO–PI–R Scores	Medical (n = 139)	Surgical (n = 153)	*p* value
Honesty–humility	3.58 ± 0.58	3.42 ± 0.59	0.027
Sincerity	3.49 ± 0.89	3.47 ± 0.89	0.883
Fairness	4.09 ± 0.84	4.02 ± 0.82	0.460
Greed avoidance	2.99 ± 0.81	2.75 ± 0.85	0.018
Modesty	3.74 ± 0.76	3.44 ± 0.78	0.001
Emotionality	3.15 ± 0.54	3.05 ± 0.55	0.101
Fearfulness	2.98 ± 0.74	2.79 ± 0.72	0.028
Anxiety	3.58 ± 0.76	3.51 ± 0.77	0.474
Dependence	2.79 ± 0.88	2.76 ± 0.89	0.811
Sentimentality	3.27 ± 0.79	3.12 ± 0.76	0.111
Extroversion	3.22 ± 0.53	3.42 ± 0.51	0.001
Social self-esteem	3.46 ± 0.74	3.68 ± 0.71	0.009
Social boldness	2.94 ± 0.92	3.25 ± 0.85	0.003
Sociability	3.18 ± 0.41	3.30 ± 0.52	0.031
Liveliness	3.30 ± 0.83	3.46 ± 0.77	0.083
Agreeableness	2.97 ± 0.59	2.84 ± 0.55	0.047
Forgiveness	2.94 ± 0.79	2.91 ± 0.81	0.757
Gentleness	3.09 ± 0.69	2.95 ± 0.65	0.073
Flexibility	2.91 ± 0.73	2.68 ± 0.74	0.008
Patience	2.95 ± 0.86	2.82 ± 0.83	0.187
Conscientiousness	3.69 ± 0.55	3.78 ± 0.53	0.155
Organization	3.45 ± 0.86	3.74 ± 0.86	0.004
Diligence	4.08 ± 0.65	4.20 ± 0.57	0.108
Perfectionism	3.77 ± 0.69	3.75 ± 0.66	0.831
Prudence	3.45 ± 0.73	3.43 ± 0.79	0.763
Openness to experience	3.74 ± 0.49	3.77 ± 0.46	0.582
Aesthetic appreciation	4.11 ± 0.69	4.11 ± 0.63	0.939
Inquisitiveness	3.76 ± 0.73	3.81 ± 0.71	0.604
Creativity	3.70 ± 0.74	3.78 ± 0.72	0.327
Unconventionality	3.37 ± 0.61	3.38 ± 0.63	0.987
Altruism	3.66 ± 0.68	3.65 ± 0.70	0.951

Table 4. Sex differences in medical and nonmedical student samples.

	Women		Men	
	Student sample (Lee & Ashton, 2018)	Medical Sample	Student sample (Lee & Ashton, 2018)	Medical Sample
Honesty–humility	3.34 ± 0.56	3.58 ± 0.55	3.06 ± 0.62	3.37 ± 0.64
Sincerity	3.21 ± 0.77	3.51 ± 0.86	3.18 ± 0.78	3.43 ± 0.93
Fairness	3.63 ± 0.85	4.16 ± 0.78	3.08 ± 1.02	3.90 ± 0.89
Greed avoidance	2.81 ± 0.89	2.92 ± 0.78	2.60 ± 0.97	2.78 ± 0.92
Modesty	3.71 ± 0.62	3.73 ± 0.70	3.37 ± 0.78	3.36 ± 0.85
Emotionality	3.66 ± 0.50	3.23 ± 0.54	3.00 ± 0.57	2.90 ± 0.50
Fearfulness	3.38 ± 0.78	3.02 ± 0.74	2.62 ± 0.81	2.69 ± 0.68
Anxiety	3.88 ± 0.68	3.67 ± 0.75	3.36 ± 0.84	3.36 ± 0.75
Dependence	3.55 ± 0.85	2.90 ± 0.91	2.90 ± 0.86	2.59 ±0.82
Sentimentality	3.82 ± 0.69	3.34 ± 0.76	3.12 ± 0.76	2.98 ± 0.76
Extroversion	3.46 ± 0.59	3.30 ± 0.54	3.51 ± 0.56	3.36 ± 0.51
Social self-esteem	3.78 ± 0.68	3.57 ± 0.78	3.85 ± 0.68	3.59 ± 0.64
Social boldness	2.91 ± 0.90	3.01 ± 0.88	3.15 ± 0.82	3.25 ± 0.90
Sociability	3.60 ± 0.78	3.23 ± 0.47	3.54 ± 0.77	3.25 ± 0.48
Liveliness	3.53 ± 0.76	3.40 ± 0.80	3.50 ± 0.76	3.36 ± 0.80
Agreeableness	2.95 ± 0.58	2.90 ± 0.59	3.03 ± 0.60	2.91 ± 0.54
Forgiveness	2.71 ± 0.80	2.93 ± 0.80	2.82 ± 0.84	2.92 ± 0.80
Gentleness	3.21 ± 0.71	3.05 ± 0.67	3.22 ± 0.74	2.97 ± 0.68
Flexibility	2.78 ± 0.74	2.81 ± 0.77	2.81 ± 0.73	2.76 ± 0.71
Patience	3.09 ± 0.86	2.80 ± 0.82	3.26 ± 0.92	3.00 ± 0.86
Conscientiousness	3.51 ± 0.56	3.73 ± 0.51	3.35 ± 0.59	3.74 ± 0.59
Organization	3.34 ± 0.94	3.60 ± 0.91	3.16 ± 0.91	3.60 ± 0.82
Diligence	3.84 ± 0.68	4.14 ± 0.58	3.69 ± 0.71	4.15 ± 0.66
Perfectionism	3.60 ± 0.76	3.82 ± 0.63	3.39 ± 0.27	3.68 ± 0.73
Prudence	3.24 ± 0.71	3.38 ± 0.75	3.13 ± 0.15	3.53 ± 0.79
Openness to Experience	3.31 ± 0.62	3.74 ± 0.48	3.34 ± 0.61	3.77 ± 0.46
Aesthetic appreciation	3.38 ± 0.86	4.20 ± 0.63	3.08 ±0.92	3.98 ± 0.67
Inquisitiveness	2.97 ± 0.86	3.70 ± 0.76	3.30 ± 0.89	3.91 ± 0.63
Creativity	3.54 ± 0.91	3.73 ± 0.76	3.50 ± 0.88	3.75 ± 0.69
Unconventionality	3.36 ± 0.64	3.34 ± 0.61	3.48 ± 0.66	3.44 ± 0.63
Altruism	4.03 ± 0.6	3.77 ± 0.64	3.62 ± 0.68	3.49 ± 0.74

Table 5. Comparison of HEXACO mean scores in medical and nonmedical students.

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HEXACO–PI–R Scores	Our study HEXACO mean score	HEXACO mean score (Lee & Ashton, 2018)
Honesty–humility	3.49 ± 0.59	3.24 ± 0.60
Sincerity	3.48 ± 0.89	3.20 ± 0.77
Fairness	4.05 ± 0.83	3.44 ± 0.95
Greed avoidance	2.86 ± 0.84	2.74 ± 0.93
Modesty	3.58 ± 0.78	3.59 ± 0.75
Emotionality	3.10 ± 0.54	3.42 ± 0.61
Fearfulness	2.88 ± 0.74	3.11 ± 0.86
Anxiety	3.54 ± 0.76	3.70 ± 0.78
Dependence	2.77 ± 0.88	3.32 ± 0.91
Sentimentality	3.19 ± 0.78	3.57 ± 0.79
Extroversion	3.33 ± 0.53	3.47 ± 0.58
Social self-esteem	3.58 ± 0.73	3.81 ± 0.68
Social boldness	3.10 ± 0.90	2.99 ± 0.88
Sociability	3.24 ± 0.47	3.58 ± 0.78
Liveliness	3.38 ± 0.80	3.52 ± 0.76
Agreeableness	2.90 ± 0.57	2.97 ± 0.59
Forgiveness	2.92 ± 0.80	2.75 ± 0.82
Gentleness	3.02 ± 0.67	3.22 ± 0.72
Flexibility	2.79 ± 0.74	2.79 ± 0.74
Patience	2.88 ± 0.84	3.15 ± 0.88
Conscientiousness	3.74 ± 0.54	3.45 ± 0.58
Organization	3.60 ± 0.87	3.28 ± 0.93
Diligence	4.14 ± 0.61	3.79 ± 0.69
Perfectionism	3.76 ± 0.67	3.53 ± 0.77
Prudence	3.44 ± 0.76	3.20 ± 0.74
Openness to experience	3.75 ± 0.47	3.32 ± 0.61
Aesthetic appreciation	4.11 ± 0.65	3.27 ± 0.89
Inquisitiveness	3.79 ± 0.72	3.09 ± 0.91
Creativity	3.74 ± 0.73	3.53 ± 0.90
Unconventionality	3.38 ± 0.62	3.40 ± 0.65
Altruism	3.65 ± 0.69	3.89 ± 0.66