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RESEARCH

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# Relationship of big five personality traits and future specialty preference among undergraduate medical students: a cross-sectional study

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## Abstract

**Background** The precise choice of specialty is of paramount importance in a physician's career. Several factors play a role in deciding the specialty, such as intelligence, motivation, clinical experience, personality, and socioeconomic factors. Our hypothesis is whether personality profiles differ based on specialty choice. Therefore, we investigated the association between personality traits and specialty choice.

**Results** A cross-sectional study was conducted among 379 undergraduate medical students. Big five personality inventory was used to determine the personality traits among medical students. The most chosen speciality among both male and females was Surgery. Comparing the groups depending on their preferred specialties revealed no differences in three of five personality traits of Big five personality inventory. Students who selected psychiatry specialty scored highest on openness ($p=0.007$) and lowest on extraversion ($p=0.018$), indicating a substantial difference between the traits of extraversion and openness to experience.

**Conclusions** The differences in personality features could not be attributed to a predilection for a particular speciality. However, medical students who scored higher on openness (intellect/imagination) and less on extraversion scales were more likely to choose psychiatric specialty. Numerous other factors affect specialization preference even if there are no differences in personality features between various specialties.

**Keywords** Big-five, Medical students, Personality, Preference, Specialty

## Background

Various factors play a role in determining the specialty choice of medical graduates. Extrinsic factors such as working time, salary level, gender, lifestyle, the effect of mentors, role models, family influence, and clinical experience play a major role [1–3]. However, one of the more recent extrinsic determinants in specialty selection is a controllable lifestyle, defined as control of working hours [4]. Intrinsic factors which may influence the choice include motivation, intelligence, and personality. Although many factors influence specialty preference, personality traits are among the most critical intrinsic determinants [5]. A person's capacity to manage life's problems, accept constraints, and come up with coping mechanisms is strongly predicted by this set of characteristics. Evidence suggests a link between personality, academic and clinical performance. However, the

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relationship between personality and medical specialty preference is less clear [6].

McCrae and Costa [7] described personality in five dimensions: extroversion, agreeableness, conscientiousness, openness to experience, and neuroticism. Extroversion describes positive emotions, such as being social, active, and confident. Agreeableness is the capacity of an individual to be sympathetic, kind and cooperate to others. Openness to experience is distinguished by having more creativity, intellectual capacity, curiosity and openness to new ideas. Conscientiousness is described as being organized, systematic, punctual, achievement oriented, planning tasks carefully, and by a tendency to be persistent. Finally, neuroticism refers to being anxious, irritable and moody [7]. According to research, mature personalities and a person's good impression of their own well-being, happiness, and social support are consistently supported by personality profiles with high self-directedness, cooperation, and self-transcendence and low harm avoidance [8]. Both general population samples [9] and medical students [10] show this to be the case. For instance, the attribute of conscientiousness was cited as a reliable predictor of stress management [11, 12], clinical competence [13], and academic performance [14]. A measure of personality among physicians reported a higher level of conscientiousness, agreeableness, and extraversion but lower levels of neuroticism when compared to the general population [15]. Single qualities, however, can be advantageous or disadvantageous depending on the situation [16]. A person's capacity to manage life's problems, accept constraints, and come up with coping mechanisms is strongly predicted by this set of characteristics.

Evidence from the literature suggests a relationship between personality traits and preferred specialty. Psychiatrists were characterized by high levels of openness [17]and low levels of conscientiousness [18]. Thus, describing psychiatrists as being imaginative, curious, intelligent, insightful, fast learners, and inventive. Psychiatrists appear to be agreeable, which reflects their tendency to be sympathetic, warm, trusting, helpful, cooperative, and altruistic [17]. In the literature surgeons scored high on extroversion [6, 19, 20] and conscientiousness [19, 20], low on openness [19, 20] agreeableness [20] and neuroticism [21]. Similarly, students who chose gynecology and obstetrics reported a high level of conscientiousness describing them as organized, persistent, scrupulous, and achievement-oriented, and low on agreeableness describing them as less sympathetic and altruistic than the students that chose other specialties [21]. On the other hand, internal medicine was associated with higher agreeableness, openness to experience [22], and neuroticism [23]. Finally, anaesthesiologists scored high on extraversion and openness making them more dominant, imaginative, and curious, and scored less on neuroticism, agreeableness, and conscientiousness [21].

Medical education officials and the public health service must carefully consider medical students' job choices [18, 24]. If medical educators had a clearer knowledge of these personality traits, they could be able to offer better career advice. Planning for post-graduate programs may want to include personality trait assessment. How effectively a personality meshes with the requirements of the chosen profession is the key to career success.

The literature on the association between personality traits and preferred specialty among medical students in Arab countries is scant. Our hypothesis is whether personality profiles differ based on specialty choice. Therefore, we investigated the association between personality traits (five-factor model) and specialty choice.

## Methods

### Participants

A cross-sectional study was conducted at a medical college between January to July 2022. The study was approved by the institutional review board and all participants gave written informed consent to participate in the study.

We calculated the sample size based on the assumption of a 50% prevalence of specialty of interest. We assume 5% absolute precision, a confidence interval of 95%, and a power of 80%. Taking these into consideration, the minimal sample size comes out to 375 participants. Approximately 400 students were targeted for the survey. Out of 400, only 379 were included in the statistical analysis as 21 did not respond to all questions.

The inclusion criteria were all undergraduate students from 4 to 6 years.

Exclusion criteria All those who had history of previous psychiatric illness were excluded from the study.

### Outcome measures

#### *Questionnaire*

The first part of the questionnaire obtained information about the general characteristics of students: age, gender, academic year, and the specialty they wish to pursue after graduation. The list of the specializations was taken from the medical specialty selection guide for medical graduates, Saudi commission of health specialties, and grouped under 6 fields (Table 1). The second part of the questionnaire had questions from the Big Five Inventory-44 (BFI-44) which was used to assess five dimensions of personality. This questionnaire was made as a google form and link was distributed among students.

**Table 1** List of medical specialties grouped into six groups

| | |
|---|---|
| Internal medicine | Surgery |
| • Internal medicine | • General Surgery |
| • Dermatology | • Thoracic Surgery |
| • Family Medicine | • Cardiac Surgery |
| • Pulmonary Medicine | • Vascular Surgery |
| • Rheumatology | • Obstetrics and Gynecology |
| • Cardiology | • Ophthalmology |
| • Gastroenterology | • Orthopedic Surgery |
| • Endocrinology | • Neurosurgery |
| • Nephrology | • Plastic surgery |
| • Infectious Diseases | Psychiatry |
| • Oncology | • Child psychiatry |
| • Neurology | • General psychiatry |
| • Paediatrics | • Geriatric psychiatry |
| • Physical Medicine and Rehabilitation | • Addiction psychiatry |
| Anesthesiology and emergency medicine | Community medicine |
| Dignostics | |
| • Pathology | |
| • Radiology | |

#### *Big five personality inventory*

We used the Big Five Inventory (BFI-44) to assess personality traits according to the Five-factor model of personality. BFI-44 is designed to evaluate the personality traits of extraversion (sociability, active, dominant, and positive emotions), conscientiousness (being organized, careful behaviour, persistent and achievement-oriented), agreeableness (trust, altruism, cooperation, and sympathy), neuroticism (anxiety, depression, and hostility), and openness (imaginativeness, curiosity, sensitivity, and a need for variety. Participants rate each BFI item on a 5-point scale ranging from 1 (disagree strongly) to 5 (agree strongly); scale scores are computed as the participant's mean item response (i.e., adding all items scored on a scale and dividing by the number of items on the scale) [25]. BFI-44 scales have significant levels of reliability (0.85) and validity (0.63) across cultures [25].

### Study procedure

The questionnaires (google form) were distributed to the target sample of undergraduate medical students as a link through e-mails and what's aap. The researchers visited the lecture hall and explained about each item of the questionnaire and Big-five personality scale followed by which they were requested to finish the questionnaire through the link sent to them. The participants of this survey were mainly undergraduate medical students aged 20–28 years. All participants willing to participate in the study completed the questionnaire.

### Statistical analysis

All the data collected through google forms were converted to excel spreadsheets and analysis was performed using IBM SPSS Statistics for Windows, version 22.0 (IBM Corp., Armonk, NY, USA). The data were cleaned, sorted, and processed before the commencement of analyses. The survey's answers fields were designed to be mandatory to be filled before proceeding to the next section. Kolmogrov–Smirnoff (K–S) test was used to check the normality of the data distribution. All the variables were normally distributed. Descriptive analyses were performed for general characteristics and specialty choice as frequency (%), and for personality traits as mean ± SD and median (min–max). The relation between gender, and choice of specialty was tested using Exact Fisher's test. The grouping variables were five specialties, surgery, internal medicine, anesthesia, diagnostics, and psychiatry, public health was excluded as none of the students choose this specialty. To test the difference between specialty groups and personality traits we applied Analysis of variance (ANOVA). We ran post hoc, Tukey HSD (honest significant difference) to determine the statistical significance of the association between specialty selection and personality trait. All tests of associations were carried out at a significance level of, $P$ value < 0.05.

## Results

This study was carried out in a medical school, involving 400 students studying in the medicine course. Out of 400, only 379 were included in the statistical analysis as 21 did not respond to all questions making the response rate 94.6%. The majority of the sample was aged between 24 and 28 years and most were females. Most of our respondents belonged to the 5th year of MBBS course (Table 2). Of the 379 students most of them selected surgery followed by internal medicine, anaesthesia and emergency medicine, diagnostics, and psychiatry, respectively (Table 2). There was no significant gender difference between sex and specialty choice (Table 3). In our study sample, the personality profile of the medical students showed higher mean scores in openness followed by agreeableness and conscientiousness as compared to mean score of extraversion and neuroticism (Table 4). The overall mean values of the different personality dimensions, stratified by specialty type, are shown in (Table 5). The most dominant trait was openness in the most chosen specialties, such as internal medicine and surgery (Table 5). Psychiatry scored significantly low on extraversion when compared with other groups. The psychiatry group had the highest mean value for openness to experience compared with other specialties (Table 5). We found no significant differences between the specialties concerning agreeableness, conscientiousness,

**Table 2** General characteristics of the studied participants (*n* = 379)

| General characteristics | Number of students (%) |
|---|---|
| Age (years) | |
| 20–24 | 163 (43) |
| 24–28 | 216 (57) |
| Gender | |
| Male | 110 (29) |
| Female | 269 (71) |
| Academic year | |
| 4 | 99(26) |
| 5 | 145 (38.2) |
| 6 | 135 (35.6) |
| Specialty chosen | |
| Surgery | 175 (46.2) |
| Internal medicine | 119 (31.4) |
| Anaesthesia and Emergency Medicine | 52 (13.7) |
| Diagnostics | 21 (5.5) |
| Psychiatry | 12 (3.2) |

and neuroticism. On post-doc analysis between groups, Psychiatry scored significantly low on extraversion as compared to surgery and internal medicine. Anaesthesia scored significantly low on openness to experience when compared to psychiatry, surgery, and internal medicine (Tables 6 and 7).

## Discussion

The most common specialty of choice in our study was surgery followed by internal medicine for both genders. Previous research has also shown that surgery and internal medicine are the most popular specialties among both genders in Saudi Arabia [26–28]. Other studies conducted around the world also showed the student's preference for internal medicine, while the least favourite was specialties, such as diagnostics and psychiatry [29, 30]. Our students showed more interest in surgery and internal medicine which is in line with a previous study showing surgery and internal medicine as the most wanted specialty [31, 32]. We found no gender difference between specialty selection which is consistent with previous studies [26–28]. However, in the UK, female students were less likely to choose surgical specialties [33], while in Germany, there has been a slight increase in the number of female surgeons [30]. Since a skill gradually becomes less cognitively demanding with enough practice, trained surgery students showed higher prefrontal cortex activity attenuation than untrained students. In addition, trained female students showed a larger attenuation of prefrontal cortex activity [34].

The reason for less preference for branches such as psychiatry and public health could be due to lack of knowledge about the specialty among first years. The lesser inclination of students toward specialties such as psychiatry, diagnostics, and public health may lead to a scarcity of doctors in the respective field causing a collapse of the health care system. Henceforth, measures shall be taken to improve the interest of students in these specialties.

The results of this BFI-44-based personality self-evaluation indicate a personality profile of medical students with higher mean scores in openness (33.7), agreeableness (31.4), and conscientiousness (31.2), respectively, as compared to scores on neuroticism (24) (Table 5). Conscientiousness was previously found to be a significant predictor of success in different professional and academic settings [35, 36] including medical training [37, 38]. Attributes associated with the trait conscientiousness, such as efficiency, persistence, competence, responsibility, and efficiency match the requirements of medical practice. Low levels of conscientiousness, are potential exclusion criteria in the acceptance of students to medical school [39]. A more recent finding suggests

**Table 4** Personality traits selected by the studied participants (n = 379)

| Personality traits | Mean ± SD | Median (min–max) |
|---|---|---|
| Extraversion | 25.3 ± 5 | 25 (11–40) |
| Agreeableness | 31.4 ± 5 | 31 (16–45) |
| Conscientiousness | 31.2 ± 6 | 30 (17–44) |
| Neuroticism | 24 ± 5 | 24 (8–38) |
| Openness | 33.7 ± 6 | 34 (14–50) |

**Table 3** Gender difference in specialty selection (n = 379)

| General difference in choice of specialty | Specialty | | | | | *P* value |
|---|---|---|---|---|---|---|
| | Surgery | Internal medicine | Anesthesia and Emergency Medicine | Diagnostics | Psychiatry | |
| Gender | | | | | | |
| Male | 60 (34.3) | 26 (21.8) | 18 (34.6) | 3 (14.3) | 3 (25) | 0.076 |
| Female | 115 (65.7) | 93 (78.2) | 34 (65.4) | 18 (85.7) | 9 (75) | |

**Table 5** Relation between Specialty selected by the studied participants and their personality traits (n = 379)

| Personality traits | Specialty | | | | | *P*-value |
|---|---|---|---|---|---|---|
| | Surgery | Internal medicine | Anaesthesia and Emergency Medicine | Diagnostics | Psychiatry | |
| Extraversion | 25.6 ± 5 | 25.7 ± 4 | 24.4 ± 4 | 24.6 ± 5 | 21.5 ± 7 | **0.018*** |
| Agreeableness | 31.4 ± 5 | 31.8 ± 6 | 30.4 ± 5 | 30.4 ± 6 | 33 ± 5 | 0.431 |
| Conscientiousness | 31.4 ± 6 | 31.4 ± 6 | 30.3 ± 6 | 30.3 ± 6 | 30.4 ± 6 | 0.644 |
| Neuroticism | 24.1 ± 5 | 23.7 ± 5 | 22.8 ± 4 | 25.1 ± 5 | 26.6 ± 5 | 0.112 |
| Openness | 34.3 ± 6 | 34 ± 6 | 30.9 ± 8 | 32.8 ± 7 | 36.6 ± 6 | **0.007*** |

ANOVA -*Bold values are statistically significant

**Table 6** Associations between personality dimension Extroversion and medical specialty

| (I) Specialty | (J) Specialty | Mean difference (I-J) | Std. Error | Sig. | 95% confidence interval | |
|---|---|---|---|---|---|---|
| | | | | | Lower bound | Upper bound |
| Psychiatry | Anesthesia | − 2.92308 | 1.48170 | .281 | − 6.9846 | 1.1385 |
| | Surgery | − 4.06571* | 1.38062 | ***.028*** | ***− 7.8502*** | ***− .2812*** |
| | Internal medicine | − 4.22269* | 1.40131 | ***.023*** | ***− 8.0639*** | ***− .3815*** |
| | Diagnostics | − 3.07143 | 1.67425 | .355 | − 7.6608 | 1.5179 |
| Anesthesia | Psychiatry | 2.92308 | 1.48170 | .281 | − 1.1385 | 6.9846 |
| | Surgery | − 1.14264 | .73073 | .522 | − 3.1457 | .8604 |
| | Internal medicine | − 1.29961 | .76911 | .442 | − 3.4078 | .8086 |
| | Diagnostics | − .14835 | 1.19623 | 1.000 | − 3.4274 | 3.1307 |
| Surgery | Psychiatry | 4.06571* | 1.38062 | ***.028*** | ***.2812*** | ***7.8502*** |
| | Anesthesia | 1.14264 | .73073 | .522 | − .8604 | 3.1457 |
| | Internal medicine | − .15697 | .54972 | .999 | − 1.6638 | 1.3499 |
| | Diagnostics | .99429 | 1.06847 | .885 | − 1.9345 | 3.9231 |
| Internal medicine | Psychiatry | 4.22269* | 1.40131 | ***.023*** | ***.3815*** | ***8.0639*** |
| | Anesthesia | 1.29961 | .76911 | .442 | − .8086 | 3.4078 |
| | Surgery | .15697 | .54972 | .999 | − 1.3499 | 1.6638 |
| | Diagnostics | 1.15126 | 1.09508 | .831 | − 1.8505 | 4.1530 |
| Diagnostics | Psychiatry | 3.07143 | 1.67425 | .355 | − 1.5179 | 7.6608 |
| | Anesthesia | .14835 | 1.19623 | 1.000 | − 3.1307 | 3.4274 |
| | Surgery | − .99429 | 1.06847 | .885 | − 3.9231 | 1.9345 |
| | Internal medicine | − 1.15126 | 1.09508 | .831 | − 4.1530 | 1.8505 |

*Bold and italic values reflect significant *p* value. The mean difference is significant at the 0.05 level

Tukey HSD

that conscientiousness positively predicted the choice of a surgical specialty in medical students [40].

For traits, like conscientiousness, agreeableness, and neuroticism, there was no discernible variation between specialties, but there was for traits, such as openness and extroversion. People who chose psychiatry as their chosen field of study scored much lower on extraversion and significantly higher on openness. Personal interest and job happiness are key motivators for students who scored higher on the openness measure [22]. According to earlier research, the most frequent personality trait stated by psychiatrists and medical students with a predilection for psychiatry as their future speciality is openness to experience (intellect/imagination) [41]. Academic aptitude and diverse thinking are linked with openness (of mind/imagination). It is more helpful in medical practice and clinical education than in academic performance throughout medical school [18]. The openness makes it easier to embrace change, be adaptable, and do so effectively [18]. Individuals with higher openness (intellect/imagination) scores are more empathic and people-focused. They may possess greater intellectual curiosity and encounter

**Table 7** Associations between personality dimension openness to experience and medical specialty

| (I) Specialty | (J) Specialty | Mean difference (I-J) | Std. error | Sig. | 95% confidence interval | |
|---|---|---|---|---|---|---|
| | | | | | Lower bound | Upper bound |
| Psychiatry | Anesthesia | 5.64103* | 2.04012 | ***.047*** | ***.0488*** | ***11.2333*** |
| | Surgery | 2.28619 | 1.90095 | .750 | − 2.9246 | 7.4969 |
| | Internal medicine | 2.59174 | 1.92943 | .664 | − 2.6971 | 7.8806 |
| | Diagnostics | 3.82143 | 2.30523 | .462 | − 2.4975 | 10.1404 |
| Anesthesia | Psychiatry | − 5.64103* | 2.04012 | ***.047*** | ***− 11.2333*** | ***− .0488*** |
| | Surgery | − 3.35484* | 1.00612 | ***.008*** | ***− 6.1127*** | ***− .5969*** |
| | Internal medicine | − 3.04929* | 1.05896 | ***.034*** | ***− 5.9521*** | ***− .1465*** |
| | Diagnostics | − 1.81960 | 1.64706 | .804 | − 6.3344 | 2.6952 |
| Surgery | Psychiatry | − 2.28619 | 1.90095 | .750 | − 7.4969 | 2.9246 |
| | Anesthesia | 3.35484* | 1.00612 | ***.008*** | ***.5969*** | ***6.1127*** |
| | Internal medicine | .30555 | .75690 | .994 | − 1.7692 | 2.3803 |
| | Diagnostics | 1.53524 | 1.47115 | .835 | − 2.4974 | 5.5679 |
| Internal medicine | Psychiatry | − 2.59174 | 1.92943 | .664 | − 7.8806 | 2.6971 |
| | Anesthesia | 3.04929* | 1.05896 | ***.034*** | ***.1465*** | ***5.9521*** |
| | Surgery | − .30555 | .75690 | .994 | − 2.3803 | 1.7692 |
| | Diagnostics | 1.22969 | 1.50778 | .926 | − 2.9033 | 5.3627 |
| Diagnostics | Psychiatry | − 3.82143 | 2.30523 | .462 | − 10.1404 | 2.4975 |
| | Anesthesia | 1.81960 | 1.64706 | .804 | − 2.6952 | 6.3344 |
| | Surgery | − 1.53524 | 1.47115 | .835 | − 5.5679 | 2.4974 |
| | Internal medicine | − 1.22969 | 1.50778 | .926 | − 5.3627 | 2.9033 |

*Bold and italic values reflect significant *p* value. The mean difference is significant at the 0.05 level

Tukey HSD

less barriers or fears while coming into close touch with patients [41]. It is interesting to note that the qualities of Openness described (make it easier to embrace change, be adaptable, do so effectively and more empathic) are very important in any medical specialty, not only in psychiatry. Therefore, medical education should promote these types of qualities that improve the doctor–patient relationship. Although extraversion ratings for psychiatrists were higher in prior research [18, 21], we discovered that students who chose to specialize in psychiatry had much lower extraversion scores, whereas the extraversion levels for the other specialties were about comparable.

Internal medicine was preferred by those with the lowest neuroticism in the current study, who also preferred anesthesia/emergency medicine. According to other studies, a propensity for internal medicine is related to high neuroticism [23]. Our results showed that students who selected the fields of internal medicine and anesthesia were often more steady, peaceful, and content. Previous research showed that internists are less extroverted, because they are inclined to focus on the inner world of ideas rather than the community relationship [18, 22].

We found high agreeableness in students preferring psychiatry followed by internal medicine. This is like previous studies reporting high agreeableness in psychiatrists [18, 21] and internists [17, 18, 21, 22]. Agreeableness presents self-control regarding disciplined aspirations toward goals and strict adherence to personal principles. In literature, agreeableness was also associated with altruism, cooperation, sympathy, and trust. All these traits exhibit a better professional fit to be an internist and a psychiatrist.

In our study students who chose anesthesia/emergency medicine showed a similar level of conscientiousness as compared to other specialties, which is contrary to previous studies suggesting low conscientiousness [21]. The trait conscientiousness entails being highly self-reliant organized, more responsible, precise, and practical [42]. All the traits mentioned above are essential features for anaesthesiologists. Although, some studies claim that anaesthesiologists are team players and open to experience [6], which corresponds to high extraversion and high openness (intellect/imagination) personality traits, respectively. Being imaginative suggests that anaesthesiologists could be described in the same way as surgeons concerning their imagination, curiosity, and the need for diversity.

Our study reported high conscientiousness in students choosing surgery and internal medicine when compared

to those choosing psychiatry and diagnostics. Although this finding is similar to previous literature [20, 21], Borges et al. [21] suggested that American surgeons were less conscientious. Undoubtedly, there are cultural differences between countries, for instance, work conditions and the status of the specialty, all of which could affect this disparity in findings. Given that surgery is dominated by task-based procedural work, we assumed that we would find higher conscientiousness, which is related to task performance and procedural skills performance, and practical skills [43]. The students that chose surgery had similar levels of agreeableness to those who chose internal medicine which is contrary to the previous findings that suggested less agreeableness in surgeons when compared to internists [17, 18, 20–22].

### Limitations of the study

Our study sample was selected through convenient sampling; therefore, the lack of randomization would reduce the generalizability of the findings. There is a possibility of self-rating bias and issues of subjectivity and reliability, since the measure used to assess personality was a self-rating scale. Furthermore, it should go without saying that no conclusions about specific doctors' personalities can be drawn from the study's broad average personality profiles. The study's cross-sectional design precludes drawing any inferences about causality. Since the data collection was online, the reliability and accuracy of the information provided may be limited.

We cannot say that the choice of speciality is influenced by personality type; rather, the specialty chosen and/or its associated may have an impact on personality. However, given that personality traits are constant over the course of a person's life, it is possible that some traits may influence a person's decision to pursue and recruitment into a particular speciality, either directly or indirectly. Students' declarations and interests are much less interesting from both theoretical and practical point of view. Therefore, future studies aiming at investigating the personality profiles across specialties among already practicing doctors would be more revealing.

## Conclusions

This study showed that there were no significant differences in personality traits between medical specialty groups, except for differences in openness (intellect/imagination) and extroversion among different specialties. To help the student choose a specialty that best suits their personality via medical career counselling may be done more pragmatically by studies on personality traits. Although specialty choice may be affected by many other factors, we believe that our study supplements some new knowledge about the mechanism of specialty preference among medical students. Despite the limitations, the present study might be helpful to educators and professors to guide students in specialty selection which is resonant with personality characteristics. Additional research with a large number of students from various medical schools will be needed to assess more precise factors. In future studies, it would be interesting to define the most relevant personality traits necessary in each specialty. Reasonable conclusion cannot be drawn as number of the participants in each specialty group are not the same.

#### Abbreviation

BFI-44 Big five personality inventory

#### Author Contributions

Conceptualization: SS, OML. Methodology, resources: SS, AMT. Software, validation, formal analysis, investigation, data curation: SS, OML, AMH, AKA, MHF, EAB, AMT, NA. Writing—original draft preparation: SS. Writing—review and editing: AMT, OML, AMH, AKA, MHF, EAB. Supervision and project administration: SS.

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#### Availability of data and materials

The authors confirm that the data supporting the findings of this study are available within the article and its supplementary materials.

## Declarations

#### Ethics approval and consent to participate

Ethical permission was obtained from Institutional review board at Fakeeh college for medical sciences. The approval number obtained was 293/IRB/2022. Questionnaire included a consent to participate and anonymity of the participants was strictly maintained.

#### Competing interests

The authors declare no conflicts of interest.

#### Consent for publication

Not applicable.

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