DOI: https://doi.org/10.54393/pjhs.v6i3.2802

PAKISTAN JOURNAL OF HEALTH SCIENCES
(LAHORE)
https://thejas.com.pk/index.php/pjhs
ISSN (E): 2790-9352, (P): 2790-9344
Volume 6, Issue 03 (March 2025)

Original Article

OPEN ACCESS

Association of Personality Traits and Future Specialty Preference among MBBS Students

Mohi Ud Din[1*], Hina Aslam[2], Abdur Rehman[1], Muhammad Ali[1], Muhammad Junaid[1], Ifra Naeem[1] and Saira[1]

[1]Department of Community Medicine, Aziz Fatimah Medical and Dental College, Faisalabad, Pakistan
[2]Department of Pharmacology, King Edward Medical University, Lahore, Pakistan

ARTICLE INFO

Keywords:
Personality Trait, Future Specialty Preference, Medical students, Association

How to Cite:
Din, M. U., Aslam, H., Rehman, A., Ali, M., Junaid, M., Naeem, I., & Saira, . (2025). Association of Personality Traits and Future Specialty Preference among MBBS Students: Personality Traits and Future Specialty Preference among MBBS Students. Pakistan Journal of Health Sciences, 6(3), 108-114. https://doi.org/10.54393/ pjhs.v6i3.2802

***Corresponding Author:**
Mohi Ud Din
Department of Community Medicine, Aziz Fatimah Medical and Dental College, Faisalabad, Pakistan
dr.md89@outlook.com

Received date: 23rd January, 2025
Acceptance date: 14th March, 2025
Published date: 31st March, 2025

ABSTRACT

Different personality traits may have a significant impact on medical students' choices on future selection of their future specialty selection. **Objectives:** To determine the most common personality traits among medical students. Also, to establish if there is any association between traits and future specialty preference. **Methods:** An analytical cross-sectional study was conducted from June 2024 to December 2024. A validated questionnaire was used and distributed through social media platforms, and quota non-purposive sampling was done. The Big Five Inventory (BFI) was used for personality traits assessment. For demographics and specialty choice, frequencies and percentages were calculated. The chi-square test was used to assess the association between gender and choice of specialty. Analysis of variance (ANOVA) was employed to assess the mean comparisons of personality traits with specialty preferences. Post hoc, a Tukey HSD test was done to determine the statistical significance of the association between specialty selection and personality traits. p-value≤0.05 was taken as significant. **Results:** Between gender and specialty selection, a significant association was seen (p=0.033). The personality profiles of medical students showed a higher Mean + SD in the agreeableness profile (3.77 + 0.52). Significant associations with agreeableness and openness traits (p=0.05) were seen with the specialty chosen. **Conclusions:** The findings offered important perspectives on the relationship between personality traits and specialty selection among medical students. Future studies should build on these ideas, looking into various dynamic influences that affect specialty choice and the significance of personality traits in this regard.

INTRODUCTION

It is the most important decision for medical students as to which medical specialty to choose; it has great relevance not only for their future careers but also for the total health service workforce. Choosing a medical specialty is guided by quite a variety of factors, such as personal interests, career ambitions, lifestyle choices, and societal demand. However, today personality traits have started to be one factor contributing to the determination of this choice [1]. Personality traits are the stable patterns of thought, feeling, and behavior that each human demonstrates, meaning that personality traits are part of the choose the option that one prefers and is inclined towards professional choices. Between personality traits and specialty preference, the association has academic interest but also practical use in career counseling, medical education, and workforce planning [2]. Deciding on the medical specialty to choose is the most critical decision for medical students; it not only determines their future careers but also that of the entire health service workforce. Some determinants for specialty choice include personal interests, career ambitions, lifestyle preferences, and societal demand. Lately, personality traits have become one such factor that has begun attracting more attention. Personality traits are stable patterns of thought, feeling, and behavior shown by almost all human beings; therefore, personality traits are part of the options that one prefers and will determine professional choices as well. The relationship between personality traits and specialty

DOI: https://doi.org/10.54393/pjhs.v6i3.2802

preference holds academic interest but equally serves as valuable information for career counseling, medical education, and workforce planning. The Big Five Inventory (BFI-44) is the non-irrefutable instrument for the evaluation of personality traits. It encompasses five major divisions termed Openness to Experience, Conscientiousness, Extraversion, Agreeableness, and Neuroticism. Each of these traits contains aspects related to one's personality, and a composite of these traits will provide a more holistic picture of one's behavioral tendencies and preferences in the profession [3]. High levels of conscientiousness have been associated with preferences for structured and detail-oriented specialties, while extraversion may predispose individuals to specialties requiring high levels of interpersonal interaction. Similarly, openness to experience might drive interest in research-oriented or innovative fields, whereas neuroticism could influence preferences based on perceived stress levels in different specialties [4]. The BFI traits serve as a well-established theoretical basis for this research. Openness to Experience, which includes curiosity, creativity, and a tendency towards new experiences, may encourage students to opt for fields that provide avenues for innovation, research, and ongoing learning. Conscientiousness, which reflects traits like organization, diligence, and dependability, is often associated with preferences for fields that demand precision and meticulousness, such as surgery or internal medicine [5]. Extraversion, which encompasses sociability, assertiveness, and a preference for dynamic interactions, might steer students towards specialties that involve patient interaction, such as pediatrics, family medicine, or psychiatry [6]. Agreeableness, characterized by empathy, cooperation, and a selfless attitude, may correlate with fields that prioritize patient care and teamwork, like obstetrics and gynecology [7]. Lastly, Neuroticism, which suggests emotional instability and sensitivity to stress, could sway specialty preferences based on how different fields are perceived in terms of work-life balance and stress levels [8]. This research utilizes the BFI-44 inventory to evaluate the personality traits of MBBS students and explores how these traits relate to their chosen specialties. Employing the BFI-44 guarantees a trustworthy and valid evaluation of personality aspects, enabling thorough analysis and understanding. Furthermore, comprehending the link between personality traits and specialty preference has broader implications beyond individual career decisions. It can assist in tackling larger issues within healthcare delivery, including the uneven distribution of specialists, physician burnout, and the alignment of healthcare professionals with the needs of varied patient demographics. For example, recognizing personality traits tied to underrepresented specialties, such as family medicine or public health, could lead to targeted strategies to motivate students with compatible traits to enter these areas [9]. Similarly, understanding the influence of neuroticism on specialty choice could facilitate initiatives aimed at helping students manage stress and achieve a better work-life balance, thus improving their overall health and job satisfaction. The importance of this study is heightened by the challenges confronting Pakistan's healthcare system. With a burgeoning population and an escalating burden from both communicable and non-communicable diseases, the demand for a well-distributed and suitably trained healthcare workforce has become increasingly urgent. Even though personality traits are being accepted increasingly as important variables in affecting medical specialty choice, most research on the subject has been conducted within countries that can be classified as high-income. Health systems, structures of medical education, and motivations for careers in such countries may differ greatly from those in developing nations. Be that as it may, the appropriateness of the data obtained from such surveys about medical students in Pakistan remains debatable, as culture, economics, and society may differ in the impact they have on a person's specialty preference. Not much has been researched on how personality traits are aligned with the orientation of specialists in Pakistan's health care system, where a lopsided workforce remains a critical issue.

This study aimed to fill this existing gap by studying the relationship between personality traits and specialty preferences among MBBS students in Faisalabad and thus using the BFI-44 personality inventory, hoping to give region-specific insights on how personality affects careers in a developing country context. This will also contribute to medical education planning, career counseling, and workforce distribution strategies in the health sector of Pakistan.

METHODS

The analytical cross-sectional study was conducted among medical students of a private medical college in Faisalabad city, Pakistan. Before conducting the study, ethical approval was taken from the institutional ethical committee with reference number IEC/310-24. The duration of the study was 7 months, i.e. June 2024 to December 2024. All medical students of the MBBS classes were invited to participate in the study. A validated questionnaire was used for this study after taking consent from the respective author [10]. It was made on Google Forms and distributed through social media platforms. Sample size determination was based on feasibility and statistical merit. The target population comprised all MBBS students from a private medical college; hence, quota

DOI: https://doi.org/10.54393/pjhs.v6i3.2802

sampling methodology was applied for equal representation of students from all academic years (1st to 5th year), also given gender balance. Three hundred fifty participants were finally selected. A formal power analysis was not conducted, given that a sample size of 350 would normally be fairly high for ANOVA and Chi-square tests, requiring, on average, a sample size of 50 per group to pick up an effect of interest. Only those students were taken who filled out the questionnaire completely first in their respective classes, and the rest were excluded. The questionnaire has 3 components: 1st section has informed consent, in the 2nd section there were questions regarding demographics and speciality options and 3rd section has questions regarding personality traits to identify five different personality dimensions i.e. Big Five Inventory (BFI) having 44 questions on a Likert scale ranging from strongly disagree=0 to strongly agree=5. After data collection, the data were imported into an Excel sheet and then into SPSS version 25.0 for analysis. For demographics and specialty choice, frequencies and percentages were calculated. The mean ± SD were taken for personality traits. The Chi-square test was used to answer the questions posed by the categorical variables-gender and specialty preference. ANOVA tests were found suitable for checking the differences between means of personality trait scores (continuous variable) against multiple specialty choices (categorical variable). After a significant ANOVA result, Tukey's Honest Significant Difference (HSD) test was performed under the assumption of equal variances, which had also been tested using Levene's test. p-value<0.05 was taken as significant.

RESULTS

Out of 350, 175 (50%) were male, and an equal percentage of female were included. An equal percentage of students were taken from each MBBS class, i.e. 70 (20%), having equal representation of male and female (50%) in each class. The mean + SD of participants' age was 21.4 + 1.64. In terms of specialty choices, most of them chose surgery (139, 39.7%); followed by medicine (95, 27.1%), about one-fourth of them (76, 21.7%) were unsure at the moment for their career choices, while 40 (11.4%) chose career in basic sciences. Between gender and specialty selection, a significant association was seen by using the chi-square test, as shown in Table 1.

Table 1: Future Career Selection and Gender Association

Variable		Future Career Selection				p-Value
		Medicine	Surgery	Not Decided	Basic Sciences	
Gender	Male	50	63	34	28	0.033
	Female	45	76	42	12	

The chi-square test result suggests that gender significantly influences specialty choice, with more female favoring surgery, more male opting for basic sciences, and a higher proportion of female remaining undecided. The significant association between gender and specialty selection may stem from a combination of intrinsic preferences, societal norms, mentorship availability, work-life balance concerns, and confidence levels. These factors collectively shape how male and female students approach their future career paths in medicine. The personality profiles of medical students showed higher Mean + SD in the agreeableness profile, followed by openness and conscientiousness, as shown in Table 2.

Table 2: Dominant Personality Traits of Medical Students

Sr. No	Personality Traits	Mean ± SD
1	Agreeableness	3.77 ± 0.52
2	Openness	3.53 ± 0.45
3	Conscientiousness	3.43 ± 0.51
4	Neuroticism	3.27 ± 0.58
5	Extraversion	3.19 ± 0.49

Findings show the relationship between participants' personality profiles and specialty selected by using ANOVA. As per specialty chosen by medical students, their personality profiles were stratified, which showed significant associations with agreeableness and openness traits, with openness having the highest means, while no significant associations were seen with extraversion, conscientiousness and neuroticism. Extraversion showing borderline significance in specialty selection, also in Surgery, often assumed to attract extraverts, had a mean extraversion score similar to other specialties, signifying that skill and technical precision might play a greater role in specialty selection than extraversion alone. Conscientiousness (diligence, organization) is generally linked to highly structured fields like internal medicine or surgery, but since conscientiousness scores were similar across all groups, it may not have been a deciding factor in specialty selection. Neuroticism usually goes with a concern for sensitivity to stress and work-life balance. Probably, if some students were too high in neuroticism, they might avoid stressful types of specialties, but since there is diverse tolerance to stress by different people, this factor may not have led to clear specialty-based differentiation, as shown in Table 3.

DOI: https://doi.org/10.54393/pjhs.v6i3.2802

Table 3: Association of Personality Traits Means with Specialty Preference

Personality Traits	Specialty				p-Value
	Medicine	Surgery	Not Decided	Basic Sciences	
Extraversion	25.79 ± 3.81	26.06 ± 4.12	25.15 ± 3.71	24.61 ± 3.74	0.06
Agreeableness	33.97 ± 4.65	34.17 ± 4.38	32.03 ± 5.23	34.43 ± 4.86	0.05
Conscientiousness	30.84 ± 4.34	31.06 ± 4.89	31.53 ± 3.78	30.17 ± 4.85	0.43
Neuroticism	27.15 ± 4.51	25.68 ± 4.48	25.65 ± 5.07	26.34 ± 4.82	0.09
Openness	35.41 ± 4.45	36.02 ± 4.18	34.30 ± 5.02	34.57 ± 4.54	0.05

To determine the statistical significance between agreeableness and openness with specialty selection, post hoc Tukey HSD was applied. Findings show an association between specialty and personality trait 'Agreeableness'. Evidence appears borderline different across specialty groups, where not yet decided tend to score significantly less as compared to those who chose basic sciences. This finding may prove worthwhile in investigating the reason for some specialties in students being less agreeable. Agreeableness tends to go with cooperation, empathy, and social harmony. The lower agreeableness scores in undecided students suggest that reduced social cooperation, skepticism in decision-making, and difficulty in teamwork may contribute to their career uncertainty. Addressing these factors through mentorship, career counseling, and exposure to different specialties could help guide these students toward a fulfilling career path. Although openness was significantly associated with specialty selection, the differences between individual specialty groups were not strong or distinct enough to reach significance in post hoc comparisons. This could be due to small sample sizes, overlapping openness scores, and the general influence of openness across multiple specialties rather than a strong preference for any single specialty. Extraversion, conscientiousness, and neuroticism may not have shown significant associations because they are either broadly applicable across all specialties (extraversion, conscientiousness) or more related to career satisfaction rather than selection (neuroticism). In contrast, agreeableness and openness play a direct role in decision-making, teamwork, and adaptability, making them more relevant in specialty selection, as shown in Table 4.

Table 4: Association Between Specialty and Personality Trait 'Agreeableness'

Specialty (I)	Specialty (J)	Mean Difference (I-J)	SD Error	Sig	95% Confidence Interval	
					Lower Bound	Upper Bound
Medicine	Surgery	-0.197	0.620	0.989	-1.80	1.40
	Not Decided	1.943	0.886	0.128	-0.35	4.23
	Basic Sciences	-0.466	0.717	0.916	-2.32	1.39
Surgery	Medicine	0.197	0.620	0.989	-1.40	1.80
	Not Decided	2.140	0.845	0.057	-0.04	4.32
	Basic Sciences	-0.269	0.665	0.978	-1.99	1.45
Not Decided	Medicine	-1.943	0.886	0.128	-4.23	0.35
	Surgery	-2.140	0.845	0.057	-4.32	0.04
	Basic Sciences	-2.409*	0.918	0.045	-4.78	-0.04
Basic Sciences	Medicine	0.466	0.717	0.916	-1.39	2.32
	Surgery	0.269	0.665	0.978	-1.45	1.99
	Not Decided	2.409*	0.918	0.045	0.04	4.78

Results show the association between specialty and personality trait 'Openness'. No specialty group was significantly different from the other. Hence, this trait seems to be stable for any chosen specialty. The trait openness to experience (curiosity, creativity, willingness to try new things) is beneficial across multiple specialties rather than being confined to one. For example, both basic sciences and surgery may attract open individuals, one due to its research focus and the other due to innovation in surgical techniques. The mean openness scores are relatively close across specialties, meaning no single specialty group had a distinctly high or low openness score; see Table 5.

Table 5: Association Between Specialty and Personality Trait 'Agreeableness'

Specialty (I)	Specialty (J)	Mean Difference (I-J)	SD Error	Sig	95% Confidence Interval	
					Lower Bound	Upper Bound
Medicine	Surgery	-0.611	0.591	0.729	-2.14	0.91
	Not Decided	1.111	0.836	0.546	-1.05	3.27
	Basic Sciences	0.845	0.683	0.604	-0.92	2.61
Surgery	Medicine	0.611	0.591	0.729	-0.91	2.14
	Not Decided	1.722	0.796	0.136	-0.33	3.78

DOI: https://doi.org/10.54393/pjhs.v6i3.2802

	Basic Sciences	1.456	0.633	0.100	-0.18	3.09
Not Decided	Medicine	-1.111	0.836	0.546	-3.27	1.05
	Surgery	-1.722	0.796	0.136	-3.78	0.33
	Basic Sciences	-0.266	0.867	0.990	-2.50	1.97
Basic Sciences	Medicine	-0.845	0.683	0.604	-2.61	0.92
	Surgery	-1.456	0.633	0.100	-3.09	0.18
	Not Decided	0.266	0.867	0.990	-1.97	2.50

DISCUSSION

This study sought to explore the relationship between personality traits and career specialty choices among medical students, utilizing a sample of 350 participants with an equal gender distribution. The findings revealed a preference for surgical specialties among participants, with a significant association between gender and specialty choice. Furthermore, personality profiling demonstrated that agreeableness and openness were the most dominant traits among the students, which may influence their career aspirations. A study done by Borracci *et al.*, showed that only neuroticism was significantly associated with specialty choice, but in our study, it was not significantly associated [1]. The difference may be due to the sample size characteristics, as they included only students of two classes, while in our study, students from all classes were included. A research done by Coenen *et al.*, also showed that specialty preference was significantly associated with openness and agreeableness traits, similar to our study, but different in terms of extraversion, in which there was no significant association in our study [11]. A study conducted by Vedel, showed that students scored higher on extraversion and agreeableness traits, while in our study, there were agreeableness and openness [12]. The difference may be because she included participants from different fields of study rather than the medical field only. A study done by Turska *et al.*, showed that conscientiousness and agreeableness were the significant predictors in choosing a specialty, which was similar in agreeableness but different in openness trait, as in our study [13]. A study done by Fino *et al.*, showed that openness was significantly associated with specialty selection, similar to our study [14]. A study done by Khamees *et al.*, showed similar results to our study, i.e. most common specialty chosen was surgery, followed by medicine and then yet to decide, and the least chosen was basic sciences. Also significant association was seen with gender, with female choosing surgery more than male [15]. In contrast, the study done by Kuteesa *et al.*, showed that female was less likely to opt for surgery fields than male [16].This could be the kind of divergence that can be attributed to differences in context within the area of education and local health needs, around which students were exposed to these specialties during training. It thereby lends credence to the argument for exploring aspects of individual educational context when viewing specialty choice data as a result of external factors influencing the decision-making process significantly. A study done by Levaillant *et al.*, showed that surgery and medicine were the most commonly opted specialties, with gender having a significant effect on this selection, as in our study [17]. A study done by Al-Zubi *et al.*, showed that medicine was the most preferred specialty among medical students, with male choosing it more than female, which was similar in terms of gender selection but different in choice of field [18]. A study done by Mahfouz *et al.*, showed that family medicine was the most common specialty, which was different from our study. It may be due to the smaller sample size and different sample demographics from our study [19]. Research conducted by Asiri *et al.*, showed that although gender had a significant role in specialty selection, as in our study but female chose pediatrics and male chose medicine as the dominant specialty, which was different from our study results. The difference may be attributed to the larger sample size and different population dynamics in that study [20]. The borderline differences noted in specialty groups concerning agreeableness warrant further investigation. As shown in our post hoc analyses, students yet to decide on a specialty tended to demonstrate lower agreeableness scores when compared to those inclined towards basic sciences. This could suggest a potential underlying apprehension towards commitment to a specialty, raising important questions about the psychological factors at play in decision-making.

CONCLUSIONS

It was concluded that a significant correlation between specialty choice and personality traits is found only in the case of agreeableness and openness. Although extraversion, conscientiousness, and neuroticism are unrelated, students who do not choose their specialties have significantly lower agreeableness scores than students taking basic sciences. Such data collates with certain trends in literature already available, but also indicates the need for a more profound investigation into the real reasons behind preferences for certain areas in varying educational cultures. Future studies should follow this research by focusing on other possible influencers such as mentorship, career aspirations, and institutional

DOI: https://doi.org/10.54393/pjhs.v6i3.2802

factors to render the personality traits comprehension in specialty choice even better.

Authors Contribution

Conceptualization: AR
Methodology: MUD, HA, MA, MJ, IN, S
Formal analysis: MUD
Writing review and editing: MUD, HA, AR

All authors have read and agreed to the published version of the manuscript

Conflicts of Interest

All the authors declare no conflict of interest.

Source of Funding

The author received no financial support for the research, authorship and/or publication of this article.

REFERENCES

[1] Borracci RA, Ciambrone G, Arribalzaga EB. Tolerance for Uncertainty, Personality Traits and Specialty Choice Among Medical Students.Journal of Surgical Education.2021Nov;78(6):1885-95.doi:10.1016/j.jsurg.2021.03.018.

[2] Godbole AA, Oka GA, Ketkar MN, Solanki RS, Desai DT, Bangale SV *et al*. Specialty Preferences of Undergraduate Medical Students: What Do They Choose and Why? Medical Journal Armed Forces India. 2025 Jan; 81(1): 66-71. doi: 10.1016/j.mjafi.2024.04.009.

[3] Yasien S and Almuzaini F. The Relationship Between Empathy and Personality Traits in Saudi Medical Students. Journal of Education and Health Promotion. 2022 Jan; 11(1): 150. doi: 10.4103/jehp.jehp_851_21.

[4] Song Y and Shi M. Associations Between Empathy and Big Five Personality Traits Among Chinese Undergraduate Medical Students. Plos One. 2017 Feb; 12(2): e0171665. doi: 10.1371/journal.pone.0171665.

[5] De Vibe M, Solhaug I, Tyssen R, Friborg O, Rosenvinge JH, Sørlie T *et al.* Does Personality Moderate the Effects of Mindfulness Training for Medical and Psychology Students? Mindfulness. 2015 Apr; 6: 281-9. doi: 10.1007/s12671-013-0258-y.

[6] Prins DJ, van Vendeloo SN, Brand PL, Van der Velpen I, de Jong K, van den Heijkant F *et al.* The Relationship Between Burnout, Personality Traits, and Medical Specialty. A National Study among Dutch residents. Medical Teacher.2019May;41(5):584-90.doi:10.10 0/0142159X.2018.1514459.

[7] Sultan S, Labban OM, Hamawi AM, Alnajrani AK, Tawfik AM, Felemban MH *et al.* Relationship of Big Five Personality Traits and Future Specialty Preference Among Undergraduate Medical Students: A Cross-Sectional Study. The Egyptian Journal of Neurology, Psychiatry and Neurosurgery.2023Jul;59(1):103.doi:10.1186/s41983-023-00699-3.

[8] Iktidar MA, Sakib MM, Munni UR, Rimti FH, Yousuf R, Majumder K *et al*. Medical Students' Career Preferences in Bangladesh.BioMed Central Medical Education.2024Jan;24(1): 81.doi:10.1186/s12909-024 - 05 050-9.

[9] Sarikhani Y, Ghahramani S, Bayati M, Lotfi F, Bastani P. A Thematic Network for Factors Affecting the Choice of Specialty Education by Medical Students: A Scoping Study in Low- And Middle-Income Countries. BioMed Central Medical Education.2021Dec;21:1-2.doi:10.1186/s12909-021-02539-5.

[10] Sultan S, Labban OM, Hamawi AM, Alnajrani AK, Tawfik AM, Felemban MH *et al.* Relationship of Big Five Personality Traits and Future Specialty Preference Among Undergraduate Medical Students: A Cross-Sectional Study. The Egyptian Journal of Neurology, Psychiatry and Neurosurgery.2023Jul;59(1):103.doi:10.1186/s41983-023-00699-3.

[11] Coenen J, Borghans L, Diris R. Personality Traits, Preferences and Educational Choices:A Focus on STEM.Journal of Economic Psychology.2021 Jun; 84: 102361.doi: 10.1016/j.joep.2021.102361.

[12] Vedel A. Big Five Personality Group Differences Across Academic Majors: A Systematic Review.Personality and Individual Differences.2016Apr;92:1-0.doi:10.1016/j.paid.2015.12.011.

[13] Turska D, Skrzypek M, Tychmanowicz A, Baran T. Concept of Distinct Surgical Personality Revisited. Personality Traits and Personal Values as Surgical Specialty Choice Predictors. European Journal of Medical Technologies. 2016; 1(10): 54-9.

[14] 1Fino E, Agostini A, Mazzetti M, Colonnello V, Caponera E, Russo PM. There is a Limit to Your Openness: Mental Illness Stigma Mediates Effects of Individual Traits On Preference for Psychiatry Specialty.Frontiers in Psychiatry.2019 Oct;10:775.doi:10.3389/fpsyt.2019.00775.

[15] Khamees AA, Awadi S, Al Sharie S, Faiyoumi BA, Alzu'bi E, Hailat L *et al.* Factors Affecting Medical Student's Decision in Choosing A Future Career Specialty: A Cross-Sectional Study.Annals of Medicine and Surgery.2022Feb;74:103305.doi:10.1016/j.amsu.2022.103305.

[16] Kuteesa J, Musiime V, Munabi IG, Mubuuke AG, Opoka R, Mukunya D *et al*. Specialty Career Preferences Among Final Year Medical Students at Makerere University College of Health Sciences, Uganda:A Mixed Methods Study.BioMed Central Medical Education.2021 Dec; 21: 1-2. doi: 10.1186/s12909-021-02630-x.

[17] Levaillant M, Levaillant L, Lerolle N, Vallet B, Hamel-Broza JF. Factors Influencing Medical Students' Choice of Specialization: A Gender Based Systematic Review. E Clinical Medicine.2020Nov;28.doi: 10.1016/j.

DOI: https://doi.org/10.54393/pjhs.v6i3.2802

eclinm.2020.100589.

[18] Al-Zubi M, Ali MM, Alzoubi S, Bani-Hani M, Awwad MA, Seetan K *et al.* Preference of and Factors That Influence Future Specialty Among Medical Students in Jordan: A Cross-Sectional Study. Annals of Medicine and Surgery.2021Jul;67.doi:10.1016/j.amsu.2021.102527.

[19] Mahfouz ME, Althobaiti ZF, Alosaimi SG, Alghamdi YA, Alharthi HE, Althobaiti AM *et al.* Specialty Choice Among Final-Year Medical Students at Taif University. Saudi Journal of Health Systems Research.2021 Jul; 1(3): 115-22. doi: 10.1159/000517662.

[20] Asiri WM, Shati AA, Alrowaibah NA, Althumairi RK, Alqahtani GM, Mahmood SE. The Influencing Factors of Choosing Future Medical Specialties Among Students in Saudi Arabia:A Nationwide Multicenter Survey.Medicine.2023Apr;102(14):e33483.doi:10.1097/MD.0000000000033483.