# The Determining Factors of Medical Students in Considering a Specialty as a Future Career Path: A Cross-sectional Multinational Study in the Middle East

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## INTRODUCTION

Throughout years of study, undergraduate medical students are expected to gain broad comprehension of all medical specialties. After acquiring an undergraduate degree, the decision to choose a specialty is critical for every student's life as it determines the rest of their career path. This will involve their professional and future life as well as impact their community.

## MATERIALS AND METHODS

A cross-sectional study was conducted in March 2022, targeting medical students from multiple Middle East and North African countries. A questionnaire was used to collect data from the students which consisted of four sections that included a consent section, demographic data, factors evaluation which consisted of personal and professional factors, and their preferred future speciality. Data analysis was performed using SPSS version 21. Categorical and continuous variables were assessed accordingly. Ethical approval was obtained from the Biomedical Ethics of King Abdulaziz University with a “Reference Number of 63-22”. Participation was voluntary and anonymous.

## RESULTS

A total of 1,109 students responded to the questionnaire. Participants’ gender characteristics were 672 (60.6%) female and 437 (39.4%) males. Among them, 127 were in their second year, 180 in their third year, 362 in their fourth year, 85 in their fifth year, 37 in their sixth year, and 108 were interns, the median age of the participants was 22.0 (mean = 22.09 ± 2.891). Students who were undecided about their future medical specialty included 473 (42.6%) students. Income 759 (68.4%), career prospects 723 (65.2%), and the possession of competency 531 (47.9%) were the most preferred factors in their decision to pursue a future medical specialization. Medical students who choose internal medicine had a significant relationship with income, length and difficulty of training, workload, no night calls, and social prestige. In students who chose a surgical speciality, workload, career prospects, advice from a practicing doctor, and no night calls were significant. Students who choose a career in preventive medicine and public health selected the possible workload, very challenging nature of the field, presence of a work-related hazard, less working hours for more free time, and less working pressure for better quality of life as factors which influence them the most.

## DISCUSSION

The findings of the present study demonstrate that medical students choosing their future specialty is a complex step during their medical career and is influenced by multiple demographic, attitudinal, social impact, and predetermined expectations. This study includes a higher percentage of females (60.5%). Medicine is gradually becoming more feminized globally. Surprisingly, in the current study, which investigated eastern conservative countries, the finding of increasing feminized power in the medical field came consistent with the global literature. Specialties that men once dominated are now disproportionately filled by women. Moreover, we identified income, personal incentives, career-related reasons, and work-life balance as factors influencing postgraduate medical specialty choices. The selection of a postgraduate speciality was heavily influenced by personal features of future life planning and traits associated with a certain specialty. A high proportion (42.65%) of the surveyed participants reported being undecided about their preferred future speciality but they were highly influenced by an advice from friends or family. Students who preferred preventive medicine and public health appeared to attempt to achieve a balanced lifestyle away from work pressure. Finally, students of low- middle-income countries who showed interest in surgery had a significant relationship with their interest in migration.

## OBJECTIVES

We aimed to explore and determine the influencing factors that affect medical students' choices between various specialties among different countries in the Middle East and North Africa.

| Demographic characteristics | Male (n=437) | Female (n=672) | Total (n=1109) |
|---|---|---|---|
| **Nationality** | | | |
| Saudi Arabia | 158 (36.2%) | 279 (41.5%) | 437 (39.4%) |
| Sudan | 61(14.0%) | 154 (22.9%) | 215 (19.4%) |
| Egypt | 44 (10.1%) | 61 (9.1%) | 105 (9.5%) |
| Lebanon | 52 (11.9%) | 72 (10.7%) | 124 (11.2%) |
| Yemen | 70 (16.0%) | 53 (7.9%) | 123 (11.1%) |
| Oman | 27 (6.2%) | 36 (5.4%) | 63 (5.7%) |
| Jordan | 4 (0.9%) | 1 (0.1%) | 5 (0.5%) |
| Algeria | 2 (0.5%) | | 2 (0.2%) |
| Palestine | 0 (0.0%) | 3 (0.4%) | 3 (0.3%) |
| Syria | 16 (3.7%) | 4 (0.6%) | 20 (1.8%) |
| Somalia | 2 (0.5%) | | 2 (0.2%) |
| **Religion** | | | |
| Muslim | 379 (86.7%) | 591 (87.9%) | 970 (87.5%) |
| Non-Muslim | 58 (13.3%) | 81 (12.1%) | 139 (12.5%) |
| **Current year of study** | | | |
| First year | 32 (7.3%) | 178 (26.5%) | 210 (18.9%) |
| Second Year | 44 (10.1%) | 83 (12.4%) | 127 (11.5%) |
| Third Year | 65 (14.9%) | 115 (17.1%) | 180 (16.2%) |
| Fourth Year | 175 (40.0%) | 187 (27.8%) | 362 (32.6%) |
| Fifth Year | 44 (10.1%) | 41 (6.1%) | 85 (7.7%) |
| Sixth Year | 16 (3.7%) | 21 (3.1%) | 37 (3.3%) |
| Internship | 61 (14.0%) | 47 (7.0%) | 109 (9.7%) |
| **Age** | | | |
| <23 | 305 (69.8%) | 561 (83.5%) | 866 (78.1%) |
| 23-25 | 94 (21.5%) | 88 (13.1%) | 182 (16.4%) |
| >26 | 38 (8.7%) | 23 (3.4%) | 61 (5.5%) |
| **Current GPA** | | | |
| A or A+ | 174 (39.8%) | 307 (45.7%) | 481 (43.4%) |
| B or B+ | 186 (42.6%) | 259 (38.5%) | 445 (40.1%) |
| C or C+ | 18 (4.1%) | 25 (3.7%) | 43 (3.9%) |
| D or D+ | 59 (13.5%) | 81 (12.1%) | 140 (12.6%) |
| **Parents occupation** | | | |
| Doctor | 39 (8.9%) | 47 (7.0%) | |
| Other | 398 (91.9%) | 625 (93.0)% | |

**Table 1.** Demographic characteristics of the participants presented as frequency (%).

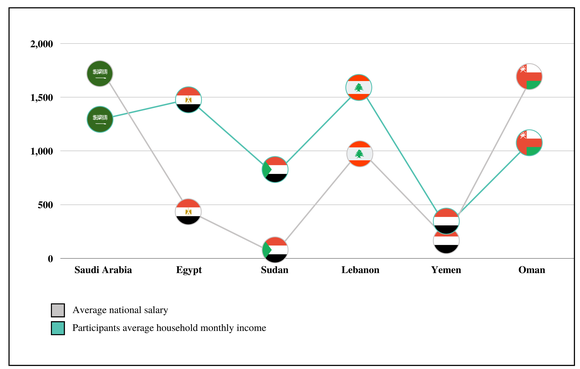
| Influencing factors | Yes | No |
|---|---|---|
| Income | 759 (68.4%) | 350 (31.6%) |
| Workload | 377 (34.0%) | 732 (66.0%) |
| Career prospects | 723 (65.2%) | 386 (34.8%) |
| Advice from practicing Doctor | 291 (26.2%) | 818 (73.8%) |
| Lack of experts | 322 (29.0%) | 787 (71.0%) |
| Length and difficulty of training period | 329 (29.7%) | 780 (70.3%) |
| Very challenging nature of this field | 275 (24.8%) | 834 (75.2%) |
| Work-related hazards | 138 (12.4%) | 971 (87.6%) |
| Continuous care and extent of patients contact | 187 (16.9%) | 922 (83.1%) |
| No night calls | 167 (15.1%) | 942 (84.9%) |
| Social prestige | 261 (23.6%) | 846 (76.4%) |
| Personal experience | 310 (28.0%) | 799 (72.0%) |
| Number and type of patients served | 194 (17.5%) | 913 (82.5%) |
| Advice from parents/family | 336 (30.3%) | 773 (69.7%) |
| Advice from friends/seniors | 236 (21.3%) | 873 (78.7%) |
| Less working hours to spend time with family | 272 (24.5%) | 837 (75.5%) |
| Less work pressure and better quality of life | 348 (31.4%) | 759 (68.6%) |
| Possession of competency needed | 531 (47.9%) | 578 (52.1%) |
| Academic or teaching opportunity | 220 (19.8%) | 889 (80.2%) |
| Participation in research | 271 (24.4%) | 838 (75.6%) |
| To be able to immigrate | 305 (27.5%) | 804 (72.5%) |

**Table 3.** Frequency of influencing factors.

| Demographic characteristics | Mean PRS (S.D) | Mean PES (S.D) | Mean KNS (S.D) |
|---|---|---|---|
| **Gender** | | | |
| Male | 3.28 (1.8) | 2.78 (2.1) | 1.73 (1.4) |
| Female | 3.18 (2.0) | 3.08 (2.2) | 1.91 (1.5) |
| **Place of study** | | | |
| Saudi Arabia | 3.35 (2.0) | 2.99 (2.1) | 1.94 (1.4) |
| Sudan | 2.21 (1.6) | 2.64 (2.0) | 1.46 (1.3) |
| Egypt | 2.76 (1.5) | 2.22 (1.7) | 2.25 (1.5) |
| Lebanon | 3.34 (1.4) | 2.70 (1.9) | 1.89 (1.8) |
| Yemen | 3.20 (1.8) | 2.86 (1.7) | 1.20 (1.2) |
| Oman | 4.47 (1.5) | 4.60 (2.3) | 2.03 (1.5) |
| Qatar | 3.60 (0.5) | 2.80 (1.6) | 0.80 (1.0) |
| Other | 5.43 (3.0) | 5.30 (2.5) | 1.83 (1.1) |
| **Religion** | | | |
| Muslim | 3.08 (1.9) | 2.87 (2.1) | 1.84 (1.4) |
| Non-Muslim | 4.16 (2.2) | 3.58 (2.4) | 1.83 (1.5) |
| **Current year of study** | | | |
| First year | 2.73 (1.9) | 2.75 (2.1) | 1.88 (1.5) |
| Second Year | 2.62 (1.8) | 2.50 (1.9) | 1.40 (1.2) |
| Third Year | 3.24 (1.8) | 2.77 (2.2) | 1.96 (1.4) |
| Fourth Year | 3.57 (2.0) | 3.40 (2.2) | 1.91 (1.5) |
| Fifth Year | 3.31 (2.0) | 3.13 (2.1) | 1.67 (1.5) |
| Sixth Year | 2.84 (2.1) | 2.43 (1.9) | 2.30 (1.5) |
| Internship | 3.70 (1.5) | 2.81 (1.7) | 1.87 (1.3) |
| **Age** | | | |
| <23 | 3.21 (2.0) | 2.94 (2.2) | 1.88 (1.5) |
| 23-25 | 3.31 (1.8) | 3.12 (1.8) | 1.66 (1.3) |
| >26 | 3.00 (1.6) | 2.75 (1.4) | 1.79 (1.6) |
| **Current GPA** | | | |
| A or A+ | 3.33 (2.1) | 2.94 (2.3) | 1.74 (1.3) |
| B or B+ | 3.15 (1.8) | 3.03 (2.1) | 1.99 (1.7) |
| C or C+ | 2.42 (1.5) | 2.67 (1.8) | 1.65 (0.8) |
| D or D+ | 3.29 (1.8) | 2.92 (1.8) | 1.81 (1.4) |
| **Parents occupation** | | | |
| Doctor | 2.83 (2.5) | 2.73 (2.3) | 1.36 (1.3) |
| Other | 3.25 (1.9) | 2.98 (2.1) | 1.88 (1.5) |
| **Siblings occupation** | | | |
| Doctor | 3.03 (2.0) | 3.07 (2.4) | 1.50 (1.3) |
| Other | 3.27 (1.9) | 2.93 (2.1) | 1.94 (1.5) |

**Table 5.** Average mean score compared according to PRS, PES, and KNS. Date are represented as mean and Standard Deviation (S.D.).

| | Influencing factors | *P*-value | Crude OR Odds Ratio | 95% confidence interval | | Adjusted OR Odds Ratio | P-value | 95% confidence interval | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | lower value | Upper value | | | lower value | upper value |
| Medicine | Income | .149 | .771 | .541 | 1.098 | 1.993 | .004 | 1.246 | 3.186 |
| | Workload | .204 | 1.254 | .884 | 1.779 | 2.465 | .000 | 1.488 | 4.084 |
| | Career prospects | .899 | .977 | .686 | 1.393 | 1.754 | .013 | 1.126 | 2.732 |
| | Advice from practicing doctor | .440 | .856 | .576 | 1.271 | .826 | .469 | .491 | 1.387 |
| | Lack of experts | .050 | .671 | .450 | 1.002 | .601 | .056 | .356 | 1.012 |
| | Length and difficulty | .002 | .521 | .342 | .793 | 2.211 | .004 | 1.295 | 3.776 |
| | Very challenging nature | .461 | .859 | .574 | 1.287 | 1.021 | .938 | .607 | 1.716 |
| | Work related hazards | .712 | .905 | .534 | 1.534 | 1.439 | .291 | .733 | 2.825 |
| | Continuous care of the parents | .221 | .737 | .452 | 1.203 | 1.026 | .934 | .555 | 1.899 |
| | No night calls | .545 | 1.152 | .729 | 1.820 | 2.889 | .002 | 1.481 | 5.636 |
| | Social prestige | .033 | 1.501 | 1.032 | 2.183 | 1.469 | .122 | .903 | 2.390 |
| | Personal experience | .940 | 1.015 | .696 | 1.478 | 1.173 | .521 | .720 | 1.910 |
| | Number and type of patients | .324 | .789 | .492 | 1.265 | .764 | .406 | .406 | 1.440 |
| | Advice from parents/family | .744 | 1.063 | .737 | 1..531 | 1.924 | .016 | 1.131 | 3.274 |
| | Advice from friends/seniors | .003 | .470 | .284 | .778 | 3.344 | .002 | 1.583 | 7.065 |
| | Less working hours for more free time | .024 | .605 | .390 | .939 | 3.035 | .002 | 1.509 | 6.104 |
| | Less working pressure | .009 | .590 | .395 | .879 | 1.846 | .037 | 1.038 | 3.283 |
| | Possession of competency needed | .690 | 1.071 | .764 | 1.503 | 1.132 | .566 | .741 | 1.731 |
| | Academic or teaching opportunity | .991 | 1.002 | .656 | 1.532 | .298 | .733 | .409 | 1.315 |
| | Participation in research | .237 | 1.256 | .860 | 1.836 | 1.595 | .081 | .944 | 2.694 |
| | To be able to immigrate | .126 | .732 | .490 | 1.093 | .913 | .726 | .550 | 1.517 |




## CONCLUSION

In conclusion, internal medicine and surgical specialties have been identified as the preferred future career path among Middle Eastern medical students. Interest in many medical specialities is becoming more feminized even in studies conducted on eastern-conservative communities. It was discovered that the student’s decision-making process is influenced by income, career prospects, and the sense of possession of competency needed in choosing a future medical speciality. Future research to examine students’ level of self-assessment and self-reflection in their decision-making processes and level of certainty about their selected specialty would be revealing. The ability to immigrate showed to be a significant factor in certain countries and in choosing certain specialities which require further analysis.