

# Subject preferences of first- and second-year medical students for their future specialization at Chitwan Medical College and Teaching Hospital, Chitwan, Nepal – a questionnaire-based study

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**Introduction:** The selection of a discipline for future specialization may be an important factor for the medical students' future career, and it is influenced by multiple factors. The interest of students in the early stages can be improved in subjects related to public health or of academic importance, as per need.

**Methods:** A questionnaire-based study was conducted among 265 first- and second-year medical students of Chitwan Medical College, Nepal to find out their subject of preference for postgraduation and the factors affecting their selection along with their interesting basic science subject. Only the responses from 232 completely filled questionnaires were analyzed.

**Results:** The preference of the students for clinical surgical (50.9%), clinical medical (45.3%), and basic medical (3.9%) sciences for postgraduation were in descending order. The most preferred specialty among male students was clinical surgical sciences (56.3%), and among female students, it was clinical medical sciences (53.6%). Although all the students responded to their preferred specialty, only 178 students specified the subject of their interest. General surgery (23.4%), pediatrics (23.4%), and anatomy (2.4%) were the most favored subjects for postgraduation among clinical surgical, clinical medical, and basic medical sciences specialties, respectively. More common reasons for selection of specific subject for future career were found to be: personal interests, good income, intellectual challenge, and others.

**Conclusion:** Many students preferred clinical surgical sciences for their future specialization. Among the reasons for the selection of the specialty for postgraduation, no significant reason could be elicited from the present study.

**Keywords:** career, surgical, medical, specialization

## Introduction

Nepal's health care system consists of health posts, primary health care centers, district hospitals, zonal hospitals, regional hospitals, and tertiary centers. The Nepalese government has the policy of appointing graduate doctors at the level of primary health care centers extending even up to the tertiary centers. Moreover, graduate doctors (specialists) serve at district hospitals, zonal hospitals, regional hospitals, and tertiary centers. The undergraduate course, bachelor of medicine and bachelor of surgery (MBBS), is of five-and-half years duration, whereas the postgraduation course (speciality course) is of 3 years duration. After MBBS, it is usually mandatory to pursue postgraduation (specialization) for better career development, economic growth, and social status in Nepal. In Nepal, postgraduation course in medical education was started in 1982 by a

governmental college, Institute of Medicine. Later BP Koirala Institute of Health Science, National Academy of Medical Sciences, and other private medical colleges started postgraduate course in different medical, surgical, basic medical sciences, and public health fields.<sup>1</sup>

As many students complete their undergraduate medical course every year, there is a tough competition to secure the seats for a postgraduation course of their interest in Nepal. However, the pattern of postgraduate studies, ie, either nonpay or pay-system, is currently under consideration by the Nepalese government for new rules and regulations. However, competition will be always prevalent because of the limited number of seats in postgraduate courses in different colleges (both government and private) and the high numbers of aspirants for the course. Currently, medical students have options for basic sciences, clinical sciences (medical and surgical), and public health for their postgraduation.<sup>2</sup> Previous studies have shown that students have certain preferences for different subjects of specialization at an early stage of their medical education.<sup>3-6</sup> This preference may depend on personal interest, sex, childhood influence, family and social influence, monetary reason, intelligence and skill challenge, security of the profession, future opportunities, etc.<sup>6-9</sup>

Knowing the preferences of students for future specialization and factors affecting this choice may help plan the educational system, set priorities, and instigate the interest of students who are reluctant to further studies in particular subject which has more public health or academic importance.<sup>10</sup> This study aimed at finding the subject preferences of the medical students for future specialization and factors influencing them along with finding their interesting basic science subject.

## Subjects and methods

The study was a questionnaire-based cross-sectional study. Two hundred sixty five questionnaires were distributed to the first- and second-year medical students, among which 240 questionnaires were returned. Only the 232 (response rate was 87.5%) completely filled questionnaires were included for the study. The study was explained to the students and then verbal consent was obtained. Before conducting the study, institutional ethical clearance was obtained from Chitwan Medical College Institutional Review Board.

## Data collection

Students were asked to fill the questionnaire honestly and clearly without disclosing their identity in any form. They were also informed that the response had no bearing with their

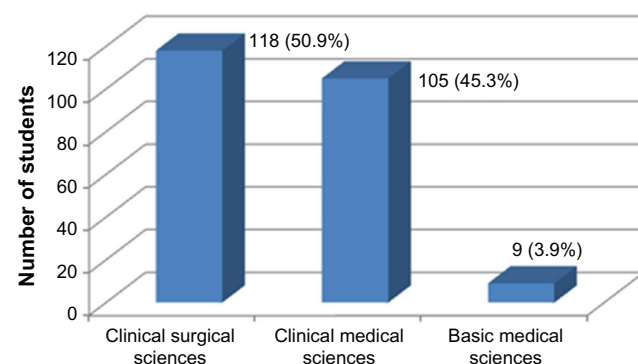
teacher–student relationships or scoring pattern in the exams so that valid comments could be obtained. Four questions along with demographic information were incorporated in the questionnaires based on the previous similar studies.<sup>11,12</sup> The questionnaire was pretested in 20 students and adjusted accordingly. Out of these questions, the first two questions were intended to find “the preferred field of interest in post-graduation” and “selection of subject for future study”; yes or no (close-ended response). Similarly, the last two questions were intended to explore “the preferred subject for postgraduation” by mentioning the name of the subject and “factors/reasons influencing for the selection of the subject for specialization”.

## Statistical analysis

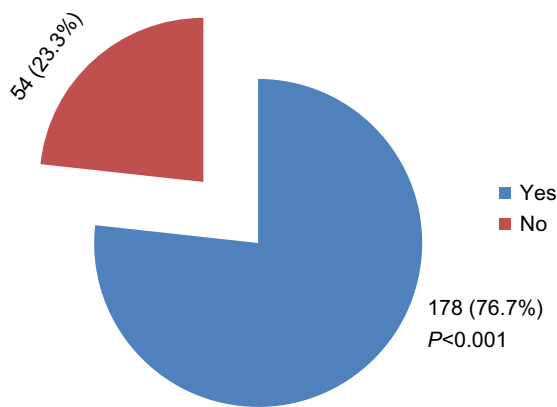
Data were compiled and entered in Excel 2007, and SPSS version 18 was used for the analysis. Chi-square test was applied wherever applicable and level of significance (*P*-value) was considered significant at  $\leq 0.05$ .

## Results

Out of 232 complete responses, 135 (58.2%) were male and 97 (41.8%) were female students. Two hundred four students (87.9%) were from urban areas, whereas 28 students (12.1%) were from rural areas. The preferred field of postgraduation was clinical surgical sciences, clinical medical sciences, and basic medical sciences, respectively, in descending order (Figure 1). Findings showed that 178 students (76.7%,  $P < 0.001$ ) had selected their subject for postgraduation during their first and second year of medical education (Figure 2). Among them, an equal number of students (48.3%) specified subjects related to surgery and medicine followed by basic science subjects (2.4%) (Table 1). Pediatrics (23.4%), cardiology (20.9%), and general medicine (12.8%) in medical field, and general surgery (23.4%), neurosurgery (20.9%),



**Figure 1** Preferred field of students for post-graduation after giving three options to them (close-ended question).



**Figure 2** Proportion of medical students who had selected post-graduation specialty by end of first- and second-year of medical school.

and cardiac surgery (18.9%) in surgical field were the most preferred subjects followed by other subjects for the post-graduation (Table 2).

Results showed that 56.3% of male students have a desire to pursue clinical surgical science, and this was followed by 39.3% with clinical medical sciences, while 53.6% of female students considered clinical medical subjects as their future career, and 43.3% considered clinical surgical subjects (43.3%). Students from rural areas were more inclined to clinical medical subjects (57.1%), while those from urban areas were more inclined toward surgical subjects (52.5%). Moreover, 49.6% of first year students selected clinical medical specialties, while 57% of second year students selected clinical surgical specialties. Majority of students did not mention the reason for selecting the specialty subject for postgraduation, although 60 students mentioned different reasons for the selection of the subject for postgraduation for which “interest” was the more common reason (7.7%), followed by “good income” (6.5%), and “intellectual challenge” (4.3%) (Table 3).

## Discussion

This study focused on the career preferences of first- and second-year medical students along with the basic science

**Table 1** Preferred disciplines of students for postgraduation when they were asked to write the name of specialty (open-ended question)

| Disciplines                                   | Number (N=178) | Percentage |
|---|----------------|------------|
| Disciplines related to medicine               | 86             | 48.3       |
| Disciplines related to surgery                | 86             | 48.3       |
| Disciplines related to basic medical sciences | 2              | 1.2        |
| No response                                   | 4              | 2.4        |

**Table 2** Subjects for postgraduation in medical and surgical sciences

| Subjects                 | Number (%) n=86 |
|--------------------------|-----------------|
| <b>Medical sciences</b>  |                 |
| Pediatrics               | 20 (23.4)       |
| Cardiology               | 18 (20.9)       |
| General medicine         | 11 (12.8)       |
| Radiology                | 9 (10.5)        |
| Neurology                | 8 (9.3)         |
| Psychiatry               | 7 (8.1)         |
| Urology                  | 5 (5.8)         |
| Anesthesia               | 2 (2.3)         |
| Dermatology              | 2 (2.3)         |
| Rheumatology             | 2 (2.3)         |
| Endocrinology            | 2 (2.3)         |
| <b>Surgical sciences</b> |                 |
| General surgery          | 20 (23.4)       |
| Neurosurgery             | 18 (20.9)       |
| Cardiac surgery          | 16 (18.9)       |
| Orthopedics              | 11 (12.8)       |
| Oncosurgery              | 8 (9.3)         |
| Gynecology               | 4 (4.5)         |
| Ophthalmology            | 3 (3.3)         |
| Pediatric surgery        | 2 (2.3)         |
| Plastic surgery          | 2 (2.3)         |
| Otorhinolaryngology      | 2 (2.3)         |

subject they found interesting. More students preferred clinical surgical sciences, followed by clinical medical sciences, and basic medical sciences for their postgraduation. Similar responses were obtained in the previous studies in which surgery was the first choice, with only a few variations in preferences for other subjects.<sup>11–15</sup>

When asked for their selection of subject for post-graduation, majority of the students ( $P < 0.001$ ) responded positively. Interestingly, when they were asked to name the preferred subject for postgraduation, equal number of students wrote medical and surgical subjects, with only 2.4% interest in a basic medical subject (anatomy). This

**Table 3** Reasons for choosing specialty subject for postgraduation

| Characteristics               | Participants (N=232) | Basic subjects, n (%) | Medical subjects, n (%) | Surgical subjects, n (%) |
|-------------------------------|----------------------|-----------------------|-------------------------|--------------------------|
| Not mentioned                 | 172 (74.2%)          | 4 (2.3)               | 74 (43.0)               | 94 (54.7)                |
| Interesting subject           | 18 (7.7%)            | 0 (0.0)               | 8 (43.3)                | 10 (57.6)                |
| Good income                   | 15 (6.5%)            | 1 (6.7)               | 10 (66.6)               | 4 (26.7)                 |
| Intellectual challenge        | 10 (4.3%)            | 0 (0.0)               | 2 (20.2)                | 8 (80.0)                 |
| Prestige and good social life | 9 (3.8%)             | 0 (0.0)               | 3 (35.3)                | 6 (66.7)                 |
| Lack of specialist            | 5 (2.2%)             | 1 (20.0)              | 2 (40.0)                | 2 (40.0)                 |
| Opportunities                 | 3 (1.4%)             | 1 (33.3)              | 0 (0.0)                 | 2 (66.7)                 |

showed that some of the students have a dilemma regarding the specific subjects among three disciplines. However, 54 students were still undecided about the particular subject within the surgical and medical fields. This finding might be due to their early stage of medical education, and when they reach the clinical years, they may be more specific in their choice of subject for postgraduation, with variation in interest or preference from early to late medical education in undergraduate study.<sup>11,16</sup>

Among the different subjects of the surgical field, general surgery, neurosurgery, and cardiac surgery were selected by 23.4%, 20.9%, and 16% students, respectively, for their future specialization. Similarly, among medical subjects, pediatrics (23.4%), cardiology (20.8%), and general medicine (12.8%) were the more favored subjects for postgraduation for the students. Additionally, variation in the subject preference with some similarities has been observed in previous findings. This variation might be due to variation in the personal interest, family advice, clinical exposure, influence of society, income, etc.<sup>15</sup> Mixed responses were obtained regarding the subject of specialization and superspecialization, elucidating the confusion among respondents at their early stage of medical education. Among the reasons mentioned for the choice of subject for specialization, no significant difference was observed. This probably explains the fact that subject choice for specialization depends on multiple factors rather than the single most important factor, which may include sex of the students, profession of the parents, individual interest, intellectual capability of students, attitude and skill toward a subject, professional income, social prestige, scope of the subject, future security, etc.<sup>14,16</sup> This fact has been supported by the present finding, as majority of the students (74.2%) did not specify the single most important factor when they were asked to do so for the reason of their selection of the subject for specialization.

Among the basic medical sciences, more students found anatomy most interesting, followed by physiology and pharmacology. A similar study in the literature has shown that the most preferred subject was anatomy, followed by biochemistry and physiology.<sup>12</sup>

The limitations of present study are the inclusion of only first- and second-year MBBS students, consideration of single reason for the selection of the specialization, consideration of only one medical school, small sample size, and failure to delineate the association between the reasons (factors) for selection and subject for specialization. Thus, further study with considerations of above limitations is needed.

## Conclusion

Majority of the students preferred surgical field for postgraduation, with least preference for basic medical sciences. Among the preferred subjects for postgraduation, general surgery and pediatrics were the most favored surgical and medical clinical subjects, respectively. Majority of students did not specify the single factor responsible for selection of the subject for postgraduation, with variation in the specified responses among the students without any significant difference.

## Acknowledgments

The authors thank all students who participated and offered their precious time for the completion of this study and also offer their heartfelt thanks to Mr Gobind Dhungana for his constant support in statistical analysis. Additionally, we also acknowledge Chitwan Medical College Institutional Review Committee for providing ethical clearance for this study.

## Author contributions

All authors contributed to data collection and analysis, drafting the manuscript, and reviewing and approving the final submitted manuscript.

## Disclosure

The authors have not received any funding or benefits from institution or elsewhere to conduct this study. The authors report no conflicts of interest in this work.

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