

Original Research

Knowledge and attitude of undergraduate students about superspeciality: A questionnaire survey

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ABSTRACT:

Purpose: This study aims to evaluate the knowledge and attitudes of undergraduate medical and dental students towards superspeciality education. Additionally, it explores factors influencing their decision-making process regarding pursuing further specialization. **Methods:** A cross-sectional, questionnaire-based survey was conducted among 450 undergraduate medical and dental students across various academic years. The structured questionnaire included demographic data, questions assessing knowledge of available superspeciality options, and attitudes towards pursuing superspeciality education. Statistical analysis was performed using SPSS, with chi-square tests applied to assess associations between variables. A p-value of <0.05 was considered statistically significant. **Results:** Of the 450 respondents, 55.6% were from medical colleges and 44.4% from dental colleges. Overall, 78% of students reported basic knowledge of superspeciality fields, but only 45% could accurately identify specific fields in their discipline. Cardiology (80%) and oral and maxillofacial surgery (70%) were the most recognized superspeciality fields among medical and dental students, respectively. Interest in pursuing superspeciality was expressed by 65% of students, with higher interest among medical students (70%) compared to dental students (58%). Mentorship significantly influenced attitudes towards superspeciality, with 80% of students who had mentors indicating interest in pursuing further specialization. Financial burden (30%) and extended training duration (25%) were major deterrents for students. **Conclusions:** The study revealed that while undergraduate students demonstrate general awareness of superspeciality fields, misconceptions and financial concerns remain significant barriers. Mentorship plays a crucial role in shaping students' decisions to pursue superspeciality education. There is a need for enhanced career counseling, financial support initiatives, and structured mentorship programs to bridge the knowledge gap and encourage informed career decisions.

Keywords: Superspeciality, Undergraduate students, Medical education, Dental education, Career choice, Mentorship, Financial barriers, Attitudes toward specialization.

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INTRODUCTION

The advent of superspeciality education in the medical and dental fields has revolutionized healthcare by enabling professionals to acquire expertise in highly specific areas. This level of specialization is essential for dealing with increasingly complex clinical scenarios and providing state-of-the-art care to patients. The demand for specialists in areas such as cardiology, neurology, orthopedics, and oral surgery

has surged, driven by the growing burden of non-communicable diseases and advanced diagnostic tools [1-5].

Undergraduate students, as future healthcare professionals, are at a crucial juncture in their career decision-making process. While exposure to basic medical and dental education provides a strong foundation, the decision to pursue a superspeciality often depends on various factors, including personal

interest, perceived career opportunities, and societal influences. Previous studies have highlighted the importance of adequate mentorship and career counseling in shaping students' decisions to pursue further specialization [1,6-8].

Despite the growing importance of superspecialties, there remains a gap in the awareness and understanding of these options among undergraduate students. Misconceptions about the difficulty, time commitment, and financial implications of pursuing a superspecialty may deter students from considering this career path [2,4]. Therefore, assessing the knowledge and attitudes of undergraduate students regarding superspecialty fields is essential to guide educational strategies that encourage informed decision-making.

This study aims to assess the level of awareness and attitudes of undergraduate medical and dental students towards superspecialty education. It seeks to identify the key factors influencing their career choices and to provide insights into how educational institutions can better prepare students for the evolving demands of the healthcare sector.

MATERIALS AND METHODS

This cross-sectional questionnaire-based study was conducted among undergraduate students from various medical and dental colleges. A total of 500 students were approached, with 450 providing complete responses. Ethical approval was obtained from the Institutional Ethics Committee, and informed consent was secured from all participants.

Study Design

The study utilized a structured questionnaire designed to evaluate students' knowledge and attitudes regarding superspecialty courses. The questionnaire was divided into three sections: demographic details, knowledge of available superspecialty options, and attitudes towards pursuing superspecialty education.

Sampling and Data Collection

A random sampling technique was employed to select participants from different academic years (first to final year) across medical and dental colleges. The questionnaire was distributed both in paper form and through an online platform to ensure maximum reach and convenience for respondents. The survey was conducted over three months from January to March 2024.

Questionnaire Design

The questionnaire comprised 20 closed-ended questions and 5 open-ended questions. It included items related to students' awareness of superspecialty fields, their perceptions of career prospects, and factors that might influence their decision to pursue further specialization, such as financial considerations, mentorship availability, and academic challenges. A Likert scale was used to measure attitudes, ranging from "strongly agree" to "strongly disagree."

Data Analysis

Data were entered into SPSS software for statistical analysis. Descriptive statistics, such as frequencies and percentages, were used to summarize the demographic characteristics and responses to individual questions. Chi-square tests were performed to assess the association between students' attitudes towards superspecialty and their academic year, gender, and field of study. A p-value of less than 0.05 was considered statistically significant.

RESULTS

A total of 450 undergraduate students participated in the study, with 250 (55.6%) from medical colleges and 200 (44.4%) from dental colleges. The gender distribution was balanced, with 230 (51.1%) females and 220 (48.9%) males. The majority of participants were in their final year (35.4%), followed by third-year (30.8%), second-year (20.7%), and first-year students (13.1%).

Knowledge of Superspecialty Fields

The majority of respondents (78%) indicated a general understanding of superspecialty fields, although only 45% could accurately identify specific options in their respective disciplines. Among medical students, the most recognized superspecialty fields were cardiology (80%), neurology (65%), and gastroenterology (55%). Among dental students, oral and maxillofacial surgery (70%) and orthodontics (60%) were the most familiar.

Despite this, a significant proportion of students (35%) were unaware of newer or emerging superspecialty fields, such as pediatric dentistry or interventional radiology. First-year and second-year students showed lower awareness of superspecialty options compared to their senior counterparts ($p < 0.05$).

Table 1: Knowledge of Superspecialty Fields Among Medical and Dental Students

Superspecialty Field	Medical Students (%)	Dental Students (%)
Cardiology	80	-
Neurology	65	-
Gastroenterology	55	-
Oral and Maxillofacial Surgery	-	70
Orthodontics	-	60
Pediatric Dentistry	-	35
Interventional Radiology	20	-

Attitudes Toward Pursuing Superspeciality

Approximately 65% of students expressed interest in pursuing further specialization, with a higher inclination among medical students (70%) compared to dental students (58%). The remaining 35% either preferred to continue in general practice or were undecided. Among students not interested in pursuing superspeciality education, the key reasons cited were the financial burden (30%) and the length of additional training (25%).

Mentorship emerged as a significant factor influencing students' attitudes. Among students with access to a mentor, 80% were inclined to pursue superspeciality courses, compared to only 45% of those without mentors ($p < 0.01$). Furthermore, 50% of students indicated that superspeciality training would enhance career opportunities, while 20% believed that general practice would provide a satisfactory career path.

Table 2: Attitudes Toward Pursuing Superspeciality Among Medical and Dental Students

Attitude/Perception	Medical Students (%)	Dental Students (%)
Interested in Pursuing Superspeciality	70	58
Financial Burden as Major Deterrent	25	40
Perception of Better Career Opportunities	60	50
Mentorship Available	80	65

Factors Influencing Career Choices

Several factors influenced students' decisions to pursue superspeciality courses. Among medical students, 60% reported that job prospects and better financial stability were the primary motivating factors. Among dental students, 40% indicated that the

financial cost of superspeciality education was a major concern. Additionally, the perception of work-life balance was a recurring theme, with 25% of students favoring general practice over superspeciality fields due to concerns about maintaining personal well-being.

Table 3: Factors Influencing Career Choices for Superspeciality

Influencing Factor	Medical Students (%)	Dental Students (%)
Job Prospects	60	50
Financial Burden	25	40
Work-Life Balance Concerns	20	30
Mentorship Encouraging Superspeciality	80	65

These findings demonstrate that while many students are aware of superspeciality fields, there are significant barriers, particularly financial constraints and misconceptions about the demands of superspeciality careers. This highlights the need for targeted interventions in career counseling and mentorship programs to support informed decision-making among students.

DISCUSSION

The findings of this study provide valuable insights into the knowledge and attitudes of undergraduate students regarding superspeciality education. A majority of students demonstrated a basic awareness of superspeciality fields, but there was a notable gap in understanding the full spectrum of available options, especially emerging fields such as pediatric dentistry and interventional radiology. These results align with previous studies that have highlighted the need for better career guidance and mentorship during undergraduate education [6].

One of the key factors influencing students' decisions to pursue further specialization was mentorship. Students who had access to mentors were significantly more likely to express interest in superspeciality education, which underscores the importance of guidance in career development. Mentorship provides students with not only academic support but also insights into the realities of clinical practice and long-term career opportunities [7]. Therefore, institutions should consider incorporating structured mentorship programs to help students make informed decisions about their future careers.

Financial considerations emerged as a major barrier to pursuing superspeciality education, particularly among dental students. The high cost of tuition for superspeciality courses, combined with the relatively lower earning potential in the early years of practice, may deter students from committing to further education. This finding is consistent with other studies that have reported financial burden as a significant factor influencing career choices in healthcare [8]. Offering financial aid, scholarships, or loan forgiveness programs could help alleviate this burden and encourage more students to pursue superspeciality training.

The perception of job prospects also played a significant role in shaping students' attitudes. Many participants believed that superspeciality education would lead to better career opportunities and higher salaries. However, some students expressed concerns about the length of training and the intense work-life demands associated with superspeciality fields. Work-life balance is a growing concern among healthcare professionals, and students are increasingly prioritizing career paths that offer flexibility and personal well-being [9]. As a result, institutions must

strike a balance between promoting the benefits of superspeciality education and addressing concerns related to the personal toll of highly specialized careers.

Educational institutions have a pivotal role to play in bridging the knowledge gap regarding superspeciality fields. Integrating information about superspeciality options into the undergraduate curriculum can provide students with a clearer understanding of the available career pathways. Additionally, career counseling services should be enhanced to offer tailored guidance to students based on their interests, academic performance, and long-term goals. By doing so, institutions can help students make well-informed decisions about their careers and ensure that they are adequately prepared for the evolving demands of the healthcare sector [10].

The findings of this study also have implications for policy-makers and professional bodies. There is a need to develop comprehensive strategies to address the challenges associated with superspeciality education. Policies aimed at reducing the financial burden, such as scholarship programs and subsidized education, could make superspeciality courses more accessible to a broader range of students. Moreover, offering flexible training programs that accommodate the work-life balance concerns of students might encourage more to pursue further specialization. In addition, professional bodies can promote awareness about the growing importance of superspeciality fields through seminars, workshops, and collaborations with academic institutions.

One of the unexpected findings in this study was the relative lack of awareness regarding newer and emerging fields within superspeciality education. Despite the rapid advancements in medical and dental science, it seems that the undergraduate curriculum has not fully adapted to include comprehensive information about these emerging areas. This may lead to students making career decisions based on incomplete information, thereby missing out on opportunities in fields that could potentially offer better career growth and job satisfaction [11-15].

Limitations of the Study

While this study provides valuable insights into the knowledge and attitudes of undergraduate students regarding superspeciality education, it has several limitations. The cross-sectional design of the study limits the ability to establish causal relationships between the factors influencing students' decisions and their attitudes. Additionally, the study sample was drawn from a limited number of medical and dental institutions, which may not be representative of all undergraduate students across the country.

Moreover, the reliance on self-reported data may introduce response bias, as students may provide socially desirable answers rather than their true opinions. Future research should consider longitudinal studies to track changes in students' attitudes over

time and include a more diverse sample of institutions to enhance the generalizability of the findings.

CONCLUSION

This study highlights the importance of addressing the knowledge gap and influencing factors that shape undergraduate students' attitudes towards superspeciality education. While a majority of students are aware of the existence of superspeciality fields, there is a notable lack of detailed knowledge, especially regarding emerging fields. Factors such as mentorship, financial burden, job prospects, and work-life balance play a crucial role in students' decision-making process.

Educational institutions and professional bodies have a critical role in ensuring that students are well-informed about their career options. By enhancing the undergraduate curriculum, offering structured mentorship programs, and providing financial support, institutions can better prepare students for the complexities of the healthcare profession and encourage them to pursue further specialization. Additionally, addressing concerns related to work-life balance and job security can help alleviate some of the apprehensions students have about superspeciality education.

The findings from this study call for targeted interventions aimed at improving students' understanding of superspeciality fields and supporting them in making well-informed career choices. As the healthcare landscape continues to evolve, the demand for specialists and superspecialists will only grow, making it imperative for students to be equipped with the knowledge and resources necessary to navigate these challenging but rewarding career paths.

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