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Exploring The Career Options After MD In Physiology Among Medical Students Of Government Medical College, Ananthapuram: A Cross-Sectional Observational Study

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ABSTRACT:

Background & Aim: Lack of teaching faculties who have completed MD in Physiology continues to be a problem. Today's medical students are the future doctors whose role is indispensable in all branches of Medicine including Physiology. This study aims to assess the interest & knowledge in career options after MD in Physiology among pre-final & final year students as both the groups have been exposed to Physiology subject in their MBBS curriculum assuming that they will have some awareness on career options in Physiology.

Methodology: A Cross sectional observational study was conducted among 200 Medical students (First and second professional MBBS students -157, Third professional MBBS part I & II students -43) of GMC, Ananthapuram. Data was collected through pre validated questionnaire via Google forms and analyzed using SPSS 21 to assess their interest & knowledge in career options after MD in Physiology.

Statistical analysis:SPSS version 21 was used for data analysis. Chi-square test was used to test the significant difference between the two groups. 'p' value <0.05 was considered statistically significant.

Results: About77% of prefinal year & 86% of final year students are not interested in choosing MD Physiology as a career choice. About 24% of prefinal year & 55% of final year students are not interested because they think that there are no broad options. About 75% of prefinal year & 47% of final year students don't have sufficient knowledge in the career options after MD in Physiology.

INTRODUCTION:

We are living in a time of sophisticated medical technology for managing medical diseases. An interdisciplinary strategy is being used, making the approach comprehensive and integrated among the various medical specialties [1]. Physiological sciences will undoubtedly be crucial in

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such a situation. But while physiology is the mother of science and crosses all medical sub-disciplines, it is currently losing favour as a branch of study among aspiring medical students.

Nowadays, physiology is a required subject in many health sciences curricula and is considered fundamental to many biomedical domains. However, some concerning opinions regarding a possible physiological drop sparked reasonable concerns about how research and teaching-learning would be impacted in the years to come [2].

Throughout the 20th century, physiological research focused more and more on reductionist concepts, progressively transitioning from studying the entire body to examining systems, organs, cells, subcellular structures, and finally, molecules. Starting from the 1970s, the growing efforts of animal rights organisations have influenced certain individuals to abandon the use of whole animals for research purposes. Instead, they have turned to using cell culture and other isolated tissue models [3]. The department of Physiology in medical colleges, should undergo transformation based on the current needs for expansion, administrative reorganization and student perspective. The face of Physiology education has changed in the United States, like formation of a national consortium of undergraduate programs [Physiology Majors Interest Group (P-MIG)] [4].

Nevertheless, physiology, the fundamental basis of scientific studies, encompasses all sub-disciplines of medical research. However, it is currently experiencing a decline in recognition and diminishing appeal among aspiring postgraduate medical students as a preferred field of study.It is now necessary to increase awareness within the medical community about the potential of physiology as a reliable and satisfying vocation. Physiological science has expanded beyond the conventional realm of ecological and evolutionary physiology to encompass new areas such as genomic, cellular, molecular, and computational biology [5].

Postgraduate students and the broader medical community need to be made more aware of the various employment opportunities available in the fields of physiology, including academia, research, and clinical practice. It is important to remind physiologists that the coveted Nobel Prize in the field of medicine is awarded for achievements in Physiology or Medicine, acknowledging the pioneering role of physiology in medical research.

MATERIALS & METHODS:

A Cross sectional observational study was conducted among 200 Medical students (First and second professional MBBS students -157, Third professional MBBS part I & II students -43) of GMC, Ananthapuram, from March 2023 to June 2023. Data was collected through pre validated questionnaire via google forms and analyzed using SPSS 21 to assess their interest & knowledge in career options after MD in Physiology.

Eight questions were given in the questionnaire to assess the knowledge in career options after MD in Physiology among the MBBS students. Knowledge scores > 4 were considered as having adequate knowledge.

All participants gave their verbal informed consent to participate in the study.

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Statistical analysis: SPSS version 21 was used for data analysis. Chi-square test was used to test the significant difference between the two groups. 'p' value <0.05 was considered statistically significant.

RESULTS: A total of 200 students from all phases of MBBS participated in the study.

Table 1.Number of participants enrolled in the study

Phase & year of MBBS students	**No.of participants in the study**
First & Second Professional MBBS (Phase I &II students)	157
Third Professional MBBS Part I & II (Phase III &IV students)	43
Total (n) =	200

About 77% of first and second professional MBBS students i.e. 122 students & 86% of third professional MBBS students, i.e. 36 students are not interested in choosing MD Physiology as a career choice. About 24% students from phase I & II year & 55% from phase III & IV are not interested because they think that there are no broad options.

Table 2. Statistical results obtained from the study

Phase & year of MBBS students	**Obtained P value**
First & Second Professional MBBS (Phase I &II students)	Interest:p=0.102 Knowledge:p=0.000049
Third Professional MBBS Part I & II (Phase III &IV students)	

Accordingly, only 25% of Phase I &II students & 53% of Phase III &IV students have adequate knowledge in the career options after MD in Physiology.

There is no significant difference between the two groups in the obtained 'p'values in the Interest; but there is significant difference in Knowledge in career options after MD in Physiology among the two groups.

DISCUSSION:

Previous researches have investigated career inclinations of medical students in many countries [6-8]. However, these studies have primarily concentrated on careers in clinical practice, such as internal medicine. The fields of medicine, surgery, and family practice are the main focus, with

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less emphasis on other areas. Hence, it is imperative to research medical students who have an inclination towards non-clinical professions in order to gain a comprehensive grasp of their professional goals and requirements. In order to achieve this objective, the current study investigated the level of interest and knowledge in MBBS students, in pursuing a career in Physiology.

The future demand for healthcare professionals might be fulfilled by considering the job preferences of current undergraduate medical students who are completing their MBBS degree. If the determinants that impact medical students' selection of a certain specialty are recognised throughout their pre- and para-clinical training, they can be altered to generate enthusiasm for options that are not favoured by them [9]. Typically, students tend to avoid pursuing a fundamental scientific speciality because it limits their knowledge and skills to teaching and learning activities, greatly restricting their potential [9, 10].

Medical colleges have initiated masters and doctoral programmes in medical disciplines, specifically Anatomy, Physiology, Biochemistry, Microbiology, and Pharmacology, to meet the requirements of fundamental medical science educators. These programmes have partially met the requirement of basic science lecturers in medical institutions [11,12].

About 77% of first and second professional MBBS students i.e. 122 students & 86% of third professional MBBS students, i.e. 36 students are not interested in choosing MD Physiology as a career choice.

Physiology is known as the mother of Medicine. The field is ever growing day by day. Several career options after MD in Physiology include - DM in High altitude Medicine, DM in Clinical and Interventional Physiology, PhD in Nutrition, PhD in Neurophysiology, PhD in Exercise and Sports Physiology, Certification in Sleep Physiology, Certification in lifestyle Medicine, Research Scientist, Post Doctoral Fellowships in various fields & teaching as Professor in Medical colleges [1]. Physiology is indispensable in all branches of Medicine as it was, is and will be a good foundation for a better knowledge of medicine.

CONCLUSION: Most of the medical students are not interested to choose MD in Physiology as post graduation because they think that there are no broad options; and they don’t have sufficient knowledge on the various career options after MD in Physiology. Hence, Awareness should be created among medical students on the career options to improve their interest in MD Physiology. Thereby, the scarcity of MD Physiologists can be reduced in the near future.

CONFLICT OF INTEREST & FINANCIAL SUPPORT: NONE

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