

Original article:

Perception of the Genetics in Medical Curriculum by Undergraduates in Western Maharashtra

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ABSTRACT:

Genetics is a rapidly advancing field in Medicine. We live in the age of Genetics. Genetics being a field of research & advances; needs a proper attention in Medical curriculum. This study aims to know about the Perception of Genetics in the Undergraduate medical curriculum in Western Maharashtra. Study was conducted in 127 Medical Undergraduates in Western Maharashtra. 86.61% participants opined in favor of high potential of Genetics, 82.67% stressed requirement of Genetic lab at tertiary care Centre, 72.44% demand more detailed knowledge & 71.65% demand more teaching hours in genetics, 70.07% believe genetics as future of medicine. On other side 85.03% participants reported nonexperience of Genetics practical in Medical Curriculum; 63.77% believe genetics as a Neglected field in Medical colleges. This study suggest that proper insertion of Genetics in Medical curriculum is the need of hour; increase in teaching hours and incorporation of practicals are required to better focus on Genetics.

Keywords: Genetics, Medical curriculum, Medical education.

INTRODUCTION:

Genetics is a rapidly advancing field in Medicine. It has many diagnostic & therapeutic applications. Genetic technology is developing faster than the policies, laws, and conventions that govern its use. Genetics has not only accelerated the pace of research but also has become a major contributor to economies. We live in the age of Genetics. [1] Genetic lab facilities are still not available in most of the medical institutes; neither standard guidelines are available to establish genetic lab in new medical colleges. Trained persons in genetics are rare. Identification of cases with possible genetic etiology by primary care physicians is essential so that these families can get facilities of special genetic tests; genetic counseling and prenatal diagnosis. Health care professionals should be imparted special training in identifying genetic disorders and should be made aware of investigation modalities. [2] To keep pace with the rapid advances in medical genetics; training programs need to train internists to develop new attitudes, knowledge bases and skill sets. [3]

Genetics being a field of research & advances; needs a proper attention in Medical curriculum. This study aims to know about the Perception of Genetics in the Undergraduate medical curriculum in Western Maharashtra.

METHODS:

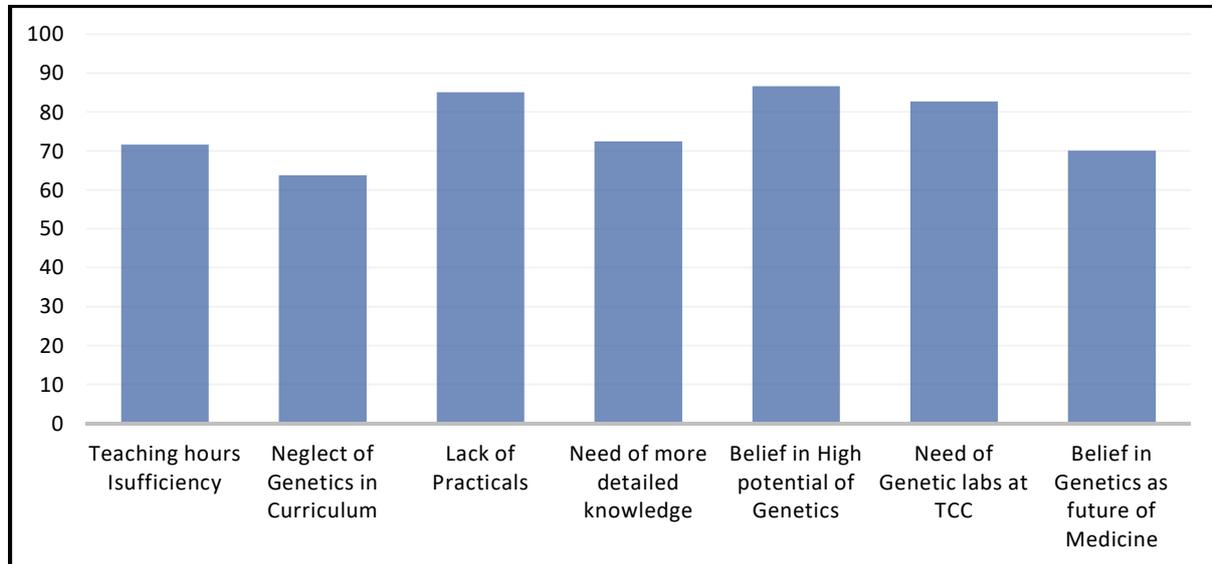
Study was conducted in 127 Medical Undergraduates in Western Maharashtra. Data was collected from feedback of the Questionnaire provided to Participants through Google forms. Observations were reviewed and statistical analysis was done with MS Excel.

OBSERVATIONS & RESULTS:

127 undergraduates participated in the study. 86.61% participants opined in favor of high potential of Genetics, 82.67% stressed requirement of Genetic lab at tertiary care Centre, 72.44% demand more detailed knowledge & 71.65% demand more teaching hours in genetics, 70.07% believe genetics as future of medicine. On other side 85.03% participants reported nonexperience of Genetics practical in Medical Curriculum; 63.77% believe genetics as a Neglected field in Medical colleges.

Sr.no	Questions/ Responses	Yes	No	May be	Did not answered
1	What is your opinion on the Hours allotted to "Genetics" in medical academics?	30 (Sufficient)	91 (Insufficient)	2 (Too much)	04
2	"Genetics" has been a neglected field in Medical School/Colleges?	81	17	25	04
3	Have you ever witnessed a "Genetics" Practical session in Your Medical academics?	15	108	NA	04
4	Do you feel more detailed knowledge of the "Genetics" in Medical curriculum will help Health care professionals?	92	08	23	04
5	Do you believe "Genetics" has High potential for growth in Medical field?	110	03	10	04
6	Do you feel every Tertiary health care centre must have a Genetic laboratory ?	105	17	NA	05
7	Do you think "Genetics" is the Future of Medicine?	89	05	29	04

Table No.1. List of questions with responses from participants (in Numbers)



GRAPH 1. KEY OBSERVATIONS OF THE STUDY

DISCUSSION:

Genetics has evolved from roots of Mendelian genetics to the era of revolution by Genetic technologies. Genetics has become an integral part of medical diagnostics and therapeutics. Yet Genetics remains a relatively unknown territory for undergraduate medical students. Genetics experts are rare and spread of Genetics academics is well behind its advancement in real world. It is widely recognized that medical professionals and medical students should be educated about genetics. [4,5,6]

While the need for “genetically literate” healthcare providers has long been recognized [7,8], it has been emphasized that the pace of advancement of knowledge and technology is faster than medical education can adapt. [9] It has also been noted that there are significant differences in the content and delivery of genetics education across national and international boundaries. [10,11,12] Many authors have emphasized modification with more theoretical and practical exposure for Genetics. This will help medical graduate doctors to identify genetic disorders and do the genetic counseling for the patients. [13] Results of this study strongly support this view.

Primary care providers need to be educated about rapid advances in genomics.[14] The educational needs of primary care providers and their views on the role of genetics in family practice are still under investigation, and international efforts to translate these needs into education programmes are still in their early stages.[14,15] General practitioners and midwives are unsure about their responsibilities in relation to genetics because they lack insight into the genetic background of diseases and its possible consequences. Primary care providers need a more detailed knowledge of genetics for better services to population. There is a need for attention to genetics in educational

programmes. Genetics and genomics are becoming an integral part of primary care. Hauwink et al. suggests that postgraduate training in primary care could be enhanced by incorporating additional training in basic clinical genetics. [15]

Medical council of India in its 1997 regulations for graduate medical education has put Genetics with various subjects like Anatomy, Biochemistry & Pediatrics; but more highlight to the practical use of Genetics is still awaited. [16] With most medical colleges following guidelines of MCI; a change in Genetics weightage in undergraduate curriculum will be welcome to keep updated with the field of Genetics. Teaching more specific genetics skills and concepts needs to be emphasized in the clinical curriculum. [17]

Most faculty do not feel comfortable teaching genetics, nor do they have formal training in the area. Advancing medical genetics into curricula will require ongoing faculty development and training to sustain and build genetics skills and competencies. [18] Financial and manpower limitations, relatively small cadre of trained medical geneticists and relatively slow adoption of genetic technology to clinical care are challenges to achieving genetic literacy among physicians at a global level. There is a pressing need to address these issues in order to develop a common minimum standard of competencies among medical professionals. [19]

Genetics can be integrated with other scientific disciplines both horizontally and vertically across medical curricula to emphasize training in scientific critical thinking skills among students. These trends will produce future health professionals with the skills and confidence necessary to embrace the advances in genetics, genomics, and bioinformatics. [20] A variety of teaching methods can be useful in these regards, including didactic lectures, multimedia CD- ROMs, and clinical experience. Teaching should be related to clinical experiences whenever possible. [21]

CONCLUSIONS:

Genetics has been struggling with its adoption in Education systems. Proper insertion of Genetics in Medical curriculum is the need of hour. This study suggest that increase in teaching hours and incorporation of practicals are required to better focus on Genetics. There is also a need to improve clinical exposure to Genetics and Genetic lab should be available at Tertiary health care. Genetics organizations, Academic bodies and concerned authorities need to step up for more detailed experience of Genetics to medical undergraduates.

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