

# EVALUATING THE IMPACT OF A LECTURE, ON KNOWLEDGE ABOUT HUMAN CHROMOSOMES: A PRE-TEST AND POST-TEST ANALYSIS IN A MEDICAL COLLEGE

Bhakti Lekule; Dr.Anjali Shete,HOD,Dept.of Physiology ,PAHGMC,Baramati; Lt.Col.Barun Chakrabarty, Assoc Prof, Dept.of Pathology, AFMC

## Introduction

Medicine is becoming increasingly genetics-centered. Clinical concepts and skills in genetics are relevant in all areas of medical practice. Hence, the need for genomics to be addressed adequately in medical undergraduate curriculum. The ability to identify various human chromosomes in a normal karyotype, lays the foundation for identifying abnormal chromosomes, which would benefit the future medical practitioner in easy diagnosis of many genetic conditions. Through this study we planned to evaluate the knowledge of medical students about human chromosome identification and to determine the effectiveness of a blend of active and passive learning on undergraduate medical students, by incorporating pre and post tests with a didactic lecture.

## Aims

- 1.To evaluate the efficacy of didactic lecture combined with pre and post tests, based on human chromosome identification, among undergraduate medical students.
- 2.To evaluate the participants knowledge about human chromosomes by using the pre test questionnaire.

## Results

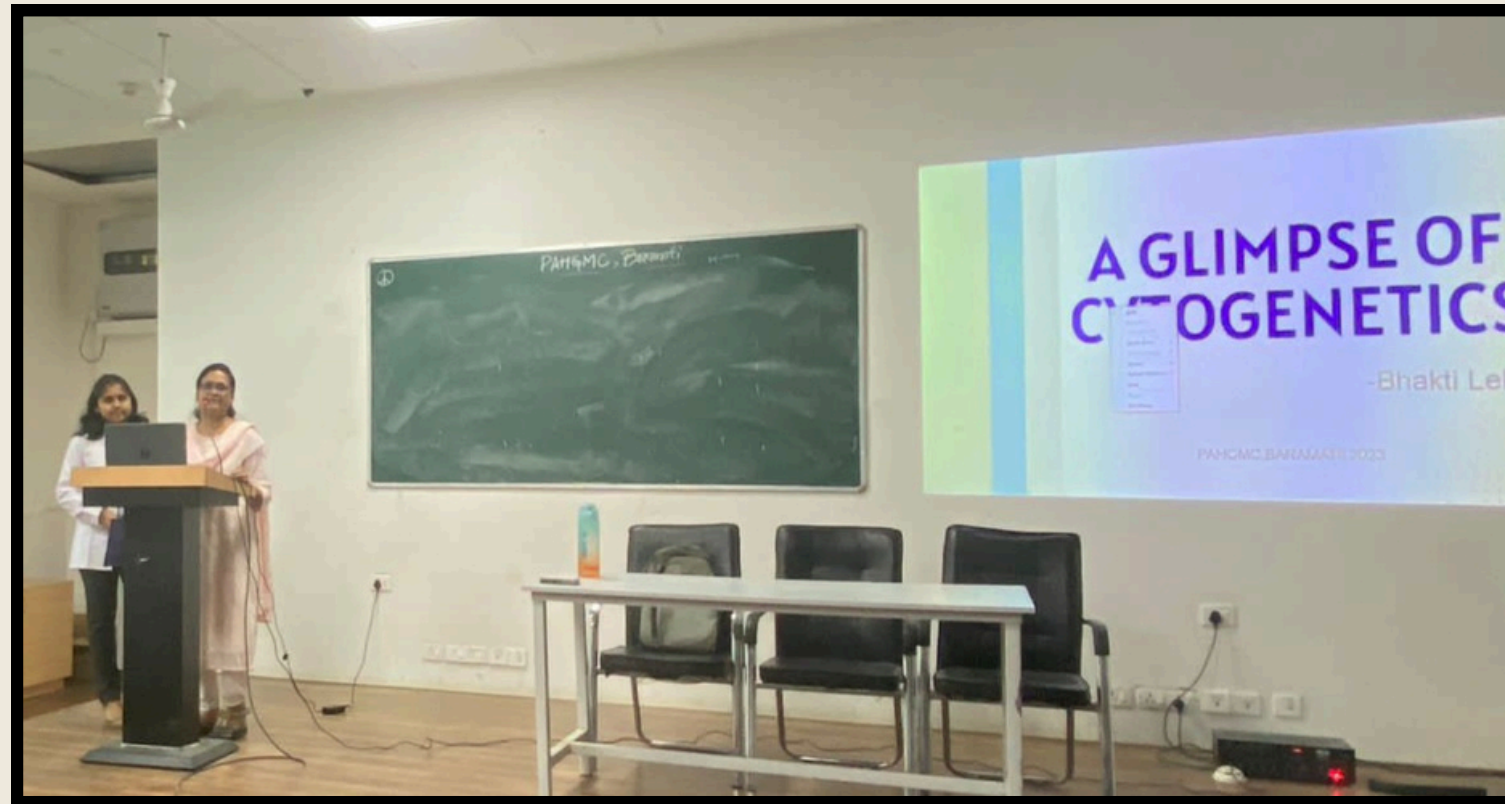
98.8% of the participants showed improvement in the post-test scores. The pre test and post test results were compared using Wilcoxon sign-ranked test. The results were significant at  $p < 0.00001$ .

## Discussion

The pre test results bear witness to the scarce knowledge that 1st year medical students have about human chromosomes. Looking at the current scenario, genetics is rapidly taking the centre stage in clinical treatment and diagnosis. It only seems adept to impart basic concepts, as that of a normal human karyotype identification, to medical students from the 1st year itself. There was significant improvement in the post-test scores. High levels of student engagement and interest were observed during the lecture. Thus, it is likely that structured & interactive nature of this learning method facilitated better retention & comprehension of the knowledge imparted.

## Conclusion

The knowledge about human chromosome identification was insufficient among undergraduate medical students. The inclusion of such interactive learning method will improve information retention among students, by making lectures engaging as well as serve as a tool for self assessment of the lecturer.

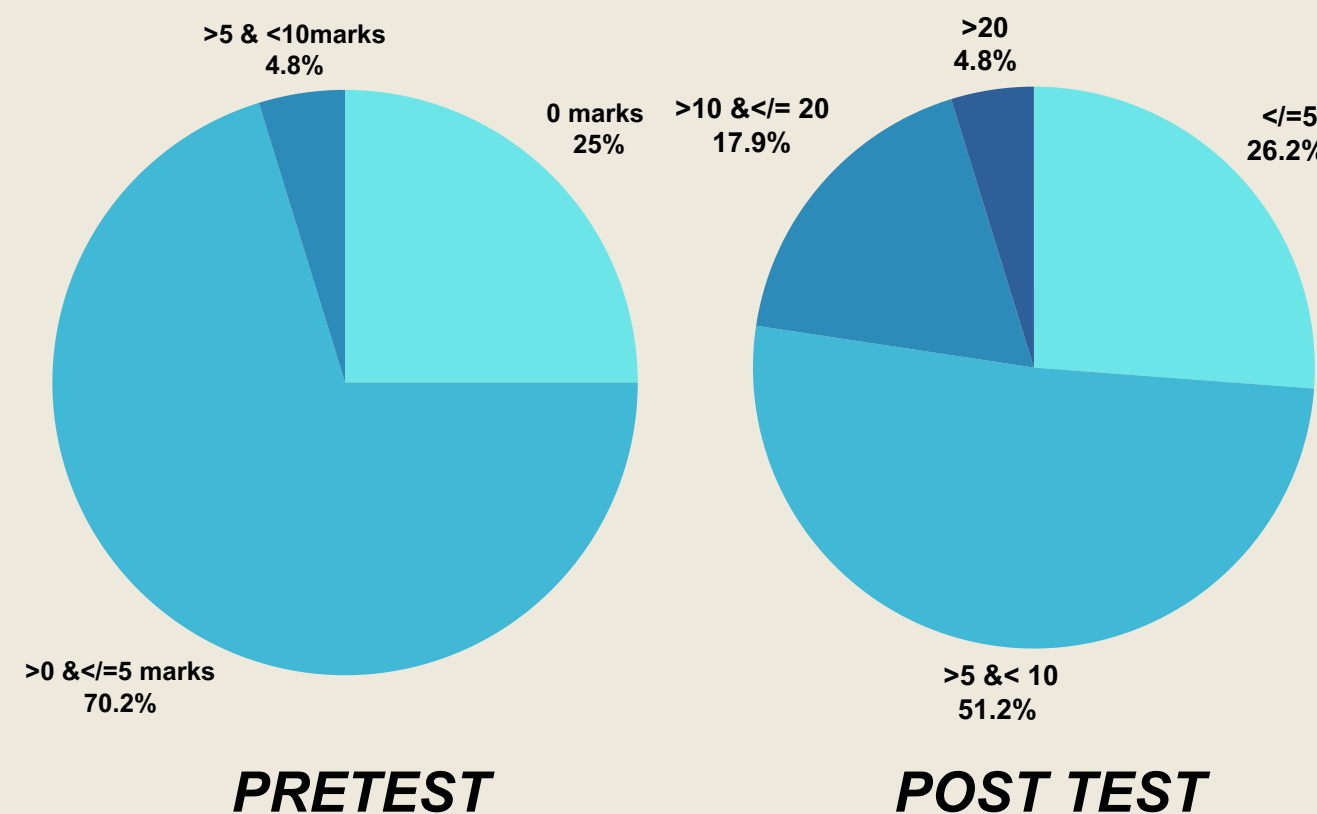


		MALES (47)	FEMALES (37)
Pre test	SD	1.57	1.59
	Mean	1.85	1.67
Post test	SD	5.28	4.37
	Mean	8.53	7.96



## Methodology

The study subjects were 84 1st year undergraduate medical students, of which 37 were females and 47 were males. After obtaining informed consent, the participants were asked to answer a Google forms based pre test containing 24 questions on human chromosome identification. Following the lecture, same set of 24 questions were administered as post test, to evaluate the effectiveness of the lecture as well as the amount of knowledge retained by the students. Data was analyzed using the Statistical Package for the Social Sciences (SPSS) version 20.



## Acknowledgement

I would like to express my sincere gratitude to my college PAHGMC, Baramati, MUHS Nashik as well as to the study participants. I am also thankful for the constant support from Dr. Anjali Shete and Lt. Col. B. K. Chakrabarty.

## References

1. Alotaibi AA, Cordero MAW. Assessing Medical Students' Knowledge of Genetics: Basis for Improving Genetics Curriculum for Future Clinical Practice. *Adv Med Educ Pract.* 2021 Dec
2. Pokhrel BR, Adhikari C. Effectiveness of Poster and/or Mini-Lecture on Genetic Disorders and Birth Defects Related Knowledge among Secondary Level Students of Kaski, Nepal. *J Nepal Health Res Counc.* 2019 Nov
4. Pearl PL, Pettiford JM, Combs SE, Heffron A, Heaton S, Hovagimian A, Macri CJ. Assessment of genetics knowledge and skills in medical students: insight for a clinical neurogenetics curriculum. *Biochem Mol Biol Educ.* 2011 May-Jun
5. Shankar, Nachiket & Vallabhajosula, Ranganath. (2012). Pre and post-lecture test scores for assessment of short term effectiveness of didactic lectures in anatomy and as a predictor for performance in summative evaluation. *South-East Asian Journal of Medical Education.*
6. Shivaraju PT, Manu G, Vinaya M, Savkar MK. Evaluating the effectiveness of pre- and post-test model of learning in a medical school. *Natl J Physiol Pharm Pharmacol* 2017
7. Nayak, S., Ramnarayan, K., Somayaji, N., & Bairy, K. L. (2006). Teaching anatomy in a problem-based learning (PBL) curriculum.
8. Michael, J. (2006) Where's the evidence that active, learning works?, *Advances in Physiology Education*
9. Don't dump the didactic lecture, fix it. Richardson et al. *PubMed*