



TO STUDY KNOWLEDGE AND ATTITUDE OF MEDICAL STUDENTS ABOUT AI IN HEALTHCARE INDUSTRY

Medical Science

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ABSTRACT

Background- Artificial Intelligence (AI) will revolutionise and improve healthcare services. Medical professionals including Medical students are responsible for ensuring that AI becomes a technology beneficial for patient care and education without any insecurity about replacing human work by these technologies. The application of AI will be further extended to other healthcare related areas in the future, leading to fundamental changes in the role of physicians and the way they practice medicine. **Materials and methods-** A web-based questionnaire was designed using Google form. It consisted of various sections aiming to evaluate the students' prior knowledge of AI in healthcare, as well as their attitude towards AI. **Result-** Total participants 113 who responded to the questionnaire, out of which 101 (89.3%) aware about AI & 12 (10.6%) Unaware about AI., 83(74.45%) shows confidence of not replacing medical professional's job but (14.15%) think AI could replace the medical professional's job. **Conclusion-** This study found that medical students felt the application of AI to medicine would be useful.

KEYWORDS

INTRODUCTION

AI is defined as the ability of computer systems to perform tasks that would usually require human levels of intelligence. Artificial intelligence (AI) is budding in healthcare industry. Its already substantial use in medicine forced the medical professionals to acquire knowledge about it. Medical professionals including Medical students are responsible for ensuring that AI becomes a technology beneficial for patient care and education. The application of AI will be further extended to other areas in the future, leading to fundamental changes in the role of physicians and the way they practice medicine.

Advantages of AI

It can assist in the establishment of precise diagnoses and proper treatment plans and monitoring for patients used in organ transplant, reconstructive surgeries or major procedures, bone & soft tissue study, to study organ in vitro, to make personalised surgical instruments, implants, devices, widen the horizon of medical education, used to test the feasibility of the automated grading of digital fundus photographs using optical coherence tomography. used to predict genetic variations & phenotypes in low-grade gliomas or in small cell lung carcinoma decrease false-positive rates in screening mammography computer-aided detection. improve pathologic mediastinal lymph node detection, and automatically perform bone age assessment.

Disadvantages of AI

The development and utilization of AI programs in the medical field are currently entering the stage of commercialization. Investment for manufacturing setup or unit, Doubtable accuracy due to interpersonal variability. Required higher computer knowledge to understand AI implementation. Legal regulations are still under scanner. Consumer acceptance is not studied widely. Can replace physicians job in some fields. Nonmedical professionals are handling or manufacturing the technology. Empty emotions in application of AI technology.

Aims of the study

To study knowledge and attitude of medical students about AI in healthcare industry.

Objectives of the study

To access the knowledge about AI in medical students.
To access the awareness about AI in medical student.

MATERIALS AND METHODS

After seeking ethical committee approval as per standardization, A web-based questionnaire was designed using Google form, and was sent out to students at tertiary major medical college in Mumbai. It consisted of various sections aiming to evaluate the students' prior knowledge of AI in healthcare, as well as their attitude towards AI in medicine in general. Respondents' anonymity was ensured. The data

was analysed to access knowledge and attitude of medical students about AI in healthcare industry. Statistical analysis will be done by simple percentage calculation or accordingly method is used.

RESULTS:

Responses to the Questionnaire

Total participants 113 who responded to the questionnaire, Out of which 101 (89.3%). Aware about AI & 12 (10.6%) Unaware about AI. 96 (84.95%) Felt a boon & 104 (92.03%) desired to be Included in medical curriculum., 16 (14.15%) think AI could replace the medical professional's job, 83(74.45%) shows confidence of not replacing medical professional's job. But 14 (12.38%) are Not sure 13 (11.50442478%) think that the diagnostic ability of AI is superior to the clinical experience of a human doctor?

89 (78.76106195%) does not agree and 11 (9.734513274%) are Not sure 73 (64.60176991%) think you would use AI while making decisions in the future 27(23.89380531%) does not agree and 13(11.50442478%) are Not sure 1(0.88%) think you would use AI Assist in treatment.

25(22.12%) think you would use AI Direct treatment (including surgery) 35(30.97%) think you would use AI Making a diagnosis, 7(6.19%) think you would use AI Making a diagnosis, Direct treatment (including surgery), 14(12.38%) think you would use AI Making a diagnosis, Making a treatment decision. 12(10.61%) think you would use AI Making a diagnosis, Making a treatment decision, Direct treatment (including surgery), 10(8.84%) think you would use AI Making a treatment decision, 3(2.65%) think you would use AI Making a treatment decision, Direct treatment (including surgery), 1(0.88%) think you would use AI in All of the above

87(76.99%) will follow Doctors opinion, If medical judgment and an AI's judgment differ 14(12.38%) Patient's choice will prefer, If medical judgment and an AI's judgment differ, 1(0.88%) 2nd opinion from Colleague, If medical judgment and an AI's judgment differ, 3(2.65%) are Not sure, 3(2.65%) will follow AI.

69(64.48598131%) think will be the first to commercialize AI Specialized clinics (spine, knee, obstetrics, etc) followed by 15 (14.01869159%) University hospitals then Public primary care such as public health centres 14 (13.08411215%) & Primary care in private clinics 9(8.411214953%)

REFERENCES

- 1) Amisha et al. "Overview of artificial intelligence in medicine." Journal of family medicine and primary care vol. 8,7 (2019): 2328-2331. doi:10.4103/jfmpc.jfmpc_440_19
- 2) Guo, Jonathan, and Bin Li. "The Application of Medical Artificial Intelligence Technology in Rural Areas of Developing Countries." Health equity vol. 2,1 174-181. 1 Aug. 2018. doi:10.1089/heq.2018.0037

- 3) Physician Confidence in Artificial Intelligence: An Online Mobile Survey Songhee Oh, Jae Heon Kim, Sung-Woo Choi, Hee Jeong Lee, Junrak Hong, Soon Hyo Kwon J Med Internet Res. 2019 Mar; 21(3): e12422. Published online 2019 Mar 25. doi: 10.2196/12422
- 4) Influence of Artificial Intelligence on Canadian Medical Students' Preference for Radiology Specialty: A National Survey Study. Gong B¹, Nugent JP², Guest W³, Parker W⁴, Chang PJ⁵, Khosa F⁶, Nicolaou S⁷.
- 5) Medical students' attitude towards artificial intelligence: a multicentre survey. D. Pinto Dos Santos, D. Giese, S. Brodehl, S. H. Chon, W. Staab, R. Kleinert, D. Maintz, B. Baeßler