Artificial Intelligence Based Monitoring in Community Pharmacy–Tool for Disease Prediction and Diagnosis

Dear Readers,

Over the last decade, there has been significant growth and adoption of artificial intelligence in a variety of disciplines, particularly among healthcare professionals. Artificial Intelligence (AI) systems are increasingly being employed in health care, with the aim that such systems can help improve and supplement human capacity in areas such as diagnostics, treatments, and patient-care and health-care system management.

AI technologies in medicine take numerous forms, ranging from the entirely virtual (e.g., deep learning-based health information management systems and active physician support in treatment decisions) to the cyber physical (e.g., robots used to assist the attending surgeon and targeted nano robots for drug delivery). Because of AI technologies' ability to perceive sophisticated patterns and hidden structures, many image based detection and diagnostic systems in healthcare can now perform on par with clinicians or a little better in some circumstances.

AI powered clinical decision support systems may reduce diagnostic errors, add intelligence to support decision making, and assist physicians with electronic health record data extraction and documentation duties. Several researches are being conducted to investigate the potential of artificial intelligence in the timely and exact identification of diseases. Many illnesses can now be diagnosed early by enhancing clinical insight extraction and feeding such insight into a well-trained and validated machine learning algorithm. Electronic health records are useful tools for recording and exchanging healthcare data. Integrating machine learning-based model created

specifically for administrative datasets can help detect potential issues, reduce health care resource consumption, and personalise outcomes.

Machine learning algorithms today are quite close to real-world settings. Because of increasing technology breakthroughs, algorithms will take over duties that were previously human intensive. The power of machine learning to learn and grasp the data will have an impact on medicine, displacing much of the work of radiologists and anatomical pathologists. Only molecular and clinical data were used to predict cancer outcomes a decade ago. With the development of high-throughput technologies such as genomic, proteomic, and imaging technologies, new types of input parameters have been collected and used for prediction. With a large sample size and integrated multi-modal data types, such as histological or pathological assessments, these techniques might significantly (15-25%) increase the accuracy of cancer susceptibility, outcome prediction, and prognosis. Improvements in the technical performance of natural language processing, understanding, and creation have helped automated speech analytics. Automated speech analytics may reveal markers for early-stage dementia, modest cognitive impairment, Parkinson's disease, and other mental diseases. Attempts have also been made to identify changes in mental health using smart phone sensors.

Will artificial intelligence and machine learning completely replace human labour, despite the fact that digitization of the healthcare sector promises to revolutionise health care?

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