Implications of Artificial Intelligence (AI) in the Nursing Profession

1. Sahaya Josphin Vimala R, Professor cum Principal, Kuppam College of Nursing
2. A Vimala, Principal, College of Nursing, Sri Venkateswara University, Chennai
3. Gnanadeepa, Vice Principal, Arcot Sri Mahalakshmi women's College of Nursing.Villapakkam
4. D.Bhuvaneshwari, Principal, Rathnamma College of Nursing, Gudur
5. Dr. Gopinath Subramanian, Principal, Mythili College of Nursing, Nellore

ABSTRACT

A long-standing custom is to produce new items throughout the course of time. As time goes on, the health care system is likewise undergoing change. In order to strengthen the health care system through the use of techniques that are supported by evidence, researchers are always paying attention. In the course of our ongoing attempts to discover answers to difficult challenges in the healthcare industry, artificial intelligence is becoming an increasingly acceptable tool. Researchers have been able to recognise certain patterns in enormous complicated data sets that were previously thought to be buried as a result of the development of new technology in the disciplines of data science and data analysis. All of these cutting-edge techniques, in conjunction with the increasing processing capacity of computers, make it possible for the healthcare system to function with greater precision and efficiency. It is imperative that artificial intelligence be included into nursing science and the health care system in order to make any uncertainties clear and to satisfy the requirements of advanced nursing care. The transformation of these extended technologies is going to be carried out for the benefit of patients. In spite of the fact that there are some great outcomes, artificial intelligence technology also has certain negative repercussions that might have a detrimental impact on the nursing profession. Exploring and discussing the influence that artificial intelligence has had on nursing care, the healthcare system, nursing education, and nursing research was the purpose of this.

Keywords: *artificial intelligence, impacts, nursing, nursing care*

Introduction

AI, which stands for artificial intelligence, is a subfield of computer science that focusses on the study of the intelligence of computers or software, as opposed to the intellect of humans or animals. In the topic that he referred to as "machine intelligence," Alan Turing was the first person to do significant study with regard to the subject. In 1956, the field of artificial intelligence was established as a distinct academic study. In many nations, artificial intelligence (AI) technologies are being created, tested, assessed, and used to healthcare. However, the engagement of nurses in these processes is restricted across a wide range of contexts and specialities throughout the world. Artificial intelligence is rapidly becoming an integral component of everyday life. AI has been used in order to provide nursing care that is both accurate and ahead of the curve. Artificial intelligence and machine learning techniques may,

in general, make life simpler. There is still a significant problem about whether or not these tools can be utilised in major care settings in an appropriate manner.

Discussion of the topic

It is usually difficult to operate in new methods, and the installation of artificial intelligence technology is not an exception to this rule. Artificial intelligence may be found everywhere, from the authentication of mobile phones to the development of self-driving automobiles, from the identification of fraudulent activity to the recognition of patterns, from Google translation to the processing of natural language. The computer was developed, and a new and exciting chapter in the history of civilisation began. Right now, it is time for high-level processing power, increased precision, and the ability to solve increasingly complicated problems efficiently. At this point, artificial intelligence is present in virtually every industry, including social media, space exploration, finance, agriculture, gaming, marketing, and healthcare, among others. When considering the future, a question that comes to mind is, "What are the potential impacts that artificial intelligence could have on the role of nursing?" The Indian health care system is confronted with a number of issues, including a lack of information or access to health care, a shortage of human resources in the health care sector, concerns regarding the expense of healthcare, concerns regarding the affordability of healthcare, and concerns regarding the lack of accountability. As a result, artificial intelligence is gradually becoming an essential component of our healthcare system. Additionally, we are working towards the goal of achieving "Health for all" as outlined by the World Health Organisation. Collaboration with artificial intelligence is required in order to establish the health care system that is wanted.

Impact of AI

An investigation on the influence that the use of voice recognition technology has on the accuracy and efficiency (time to complete) of clinical documentation by nurses has been carried out. The findings of this investigation were published in the year 2020 as a systematic review by Joseph and others. Despite the fact that the full potential of the technology has not been investigated, they have come to the conclusion that the use of voice recognition technology to nursing documentation might potentially open up a viable new interface for data entry from the point of care. The Rothman indicator is an indicator that measures the severity of certain illnesses and is included into the electronic medical record. It maintains a continual monitoring of 26 variables. On the other hand, deterioration is anticipated to occur when the Rothman Index experiences a quick decline or when the absolute value of the Rothman Index is low. The Rothman Index may be utilised for a number of purposes, including but not limited to the following: identifying unwell patients who require more immediate attention (for example, transfer to intensive care unit), identifying the healthiest patients in the intensive care unit, who are in the best condition, and

whether or not they are prepared to move to the floor, identifying individuals who are not showing signs of improvement and who might benefit from palliation. The findings of recent research indicate that the performance of the Rothman Index is positively influenced by

nursing evaluation data; hence, the potential for nurses to have an impact on patient care is substantial. It is regularly observed that the documentation of care processes consumes a significant portion of the working hours of nurses. In fact, some care facilities have reported that the documentation of care processes consumes as much as practically a third of the daily working hours of nurses. Fall detection, fall prevention, and fall risk categorisation are three of the most commonly suggested reasons for subjects in artificial intelligence, according to a fast evaluation conducted by Seibert K et al. Other objectives that have a high degree of specificity include the detection and classification of pressure ulcers, as well as the reduction of alerts, risk prediction, and classification of pressure ulcer complications. In four percent of the trials, the goal of an artificial intelligence solution was to solve difficulties with nurse rostering or scheduling. 11% The use of robots in the nursing profession is having a favourable influence on the provision of nursing care. In common parlance, robots that are emotionally sensitive are referred to as social or companion robots. The introduction of robots into healthcare delivery venues is a beneficial development. With the purpose of interacting with humans, social robots are designed to respond to the activities and interactions of humans. Robots are being developed by researchers to assist individuals in driving, to provide assistance in clinical telemedicine applications, and to carry out particular nursing care tasks such as ambulation support, assessment of vital signs, prescription administration, and infectious disease procedures. According to research, between eight and sixteen percent of a nurse's time is spent on activities and duties that are not related to nursing and that should be assigned to other people. The way that nursing care is seen is shifting as a result of the accuracy with which robots are gathering medical information. In the not-too-distant future, nurses will be able to fulfil the function of practitioners and provide care throughout the continuum. This will be possible when new artificial intelligence technologies become accessible to help nurses at any time and in any location.

AI for nursing education

A research project was carried out by Chang with the purpose of investigating the use of artificial intelligence-powered simulation in order to improve nursing clinical decision-making abilities. In comparison to students who received regular simulation training, those who participated in AI-enhanced simulations demonstrated much higher levels of performance in their educational endeavours. Chatbots are being utilised for the purpose of providing nurse education on vaccines for pregnant women, and the results are indicating a substantial improvement. A comprehensive assessment was conducted by Adrian Martinez- Ortigosa and others. It has been observed that educational materials that are based on artificial intelligence have the ability to boost and improve learning results.

Ethical issues in using AI

Regarding the many uses of artificial intelligence, bias and algorithm transparency are key concerns in the present day. The use of biassed information that has been predetermined and preset will provide biassed results. The Code of Ethics for Nurses published by the American Nurses Association makes it very apparent that nurses are accountable and responsible for their

nursing profession and the influence it has on patient care. The code covers accountability for nursing judgements, decisions, and acts, and particularly refers to systems and technology as aids rather than substitutes for nursing expertise and judgement. It is stated in the code that "Systems and technologies that assist in clinical practice are adjunct to, not replacements for, the nurse's knowledge and skill if they are used in clinical practice."It is necessary for nurses to be aware of the data that will be utilised as input information. Transparency in data is being gradually developed by artificial intelligence teams working for technology corporations.

Concerns of using AI in healthcare

It is essential for new users of artificial intelligence apps to have enough training in order to prevent certain difficulties. Training should be performed on a regular basis since programs are always being updated, however managing changes in applications may be challenging.

• With regard to data exchanges, there are issues over security.

• The problem of unemployment can be a big source of concern; nevertheless, the creation of new jobs is also essential since artificial intelligence systems require human input.

When there is a presence of data bias, it is possible for there to be inaccuracies.

• It is still necessary to take into consideration the critical ideological and ethical dimension of nursing and nursing practice

It is not possible for artificial intelligence programs to readily provide the function of decision-making and comprehending emotional wellness, and this role continues to be ambiguous in the context of delivering nursing care that is both ethical and transparent.

Conclusion

Some of the jobs that are currently being performed by nurses will be replaced by new artificial intelligence technology. The manner in which patient care is provided will evolve in tandem with the progression of technology; yet, the demand for nurses will continue to be the same in the years to come. The paper titled "Jobs Lost, Jobs Gained: Workforce Transitions in a Time of Automation" was produced by the McKinsey Global Institute (MGI) in the year 2017.(8) (18) The process of transitioning to learning things in a new way will take place, but there is nothing that can replace the experience, knowledge, and abilities that nursing graduates possess. Additionally, the nurse will always serve as a health counsellor and information integrator. Artificial intelligence technologies will not replace nurses; rather, they will provide assistance for them. There is a need to provide a comprehensive review of the evidence-based research on artificial intelligence for the purpose of applying it in nursing practice. The process of locating potential

The use of artificial intelligence (AI) in nursing practice, as well as other research investigations, have the potential to contribute to and improve nursing care practices in the future. This is because the application of AI in health care and nursing care is still comparatively new.

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