The Role of Nursing in Health Uses of Artificial Intelligence in Health Field

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Abstract

This study aims to the impact of the health uses of artificial intelligence on society, the impact of the health uses of artificial intelligence in the health field, the impact of the health uses of artificial intelligence in the human field, A questionnaire was prepared via Google Drive and distributed to the population aged 25-55 years, men and women, in the city of Mecca. As for the questionnaire, it was distributed via the social networking program (WhatsApp) for the purpose of distancing for fear of the presence of the Corona virus, 400 questionnaires were distributed, and 385 responses were obtained via email to the principal researcher.

Keywords: The role ,of nursing, in health uses, of artificial intelligence.

1. Introduction

Artificial intelligence in the health field is a general term that expresses the use of machine learning algorithms and programs (i.e., artificial intelligence) to mimic human cognition in analyzing, presenting, and understanding complex medical and health data. Specifically, artificial intelligence refers to the ability of computer algorithms to draw conclusions based solely on input data. Artificial intelligence (AI) is often described as the new electricity. Just as the invention of electricity transformed the way we live, work, and play, AI is poised to transform the world we live in. By 2025, research predicts that global AI healthcare spending will equal $36.1 billion. (1) In 2017, China announced its goal to become a global leader in AI by 2030. And on February 11, 2019, the US issued the executive order Maintaining American Leadership in Artificial Intelligence, directing all federal government agencies to implement strategic

objectives aimed at accelerating AI research and development.(2). With technology investments of this magnitude and extensive government programs to advance AI, healthcare teams will be significantly impacted as innovations such as intelligent robots are launched into healthcare and patient home settings. This article provides an overview of AI, including how AI algorithms and robots are changing the nurse's role and challenges facing the nursing profession as AI is integrated into healthcare delivery. Artificial Intelligence technology is distinguished from traditional technology used in healthcare by the ability to collect data, process it, and deliver its final results to the user. Artificial intelligence relies on advanced learning algorithms to arrive at results. These algorithms can determine behavior, and can create their own logical chain. To gain useful insights and predictions, learning models must be trained to handle big data from the input data. AI algorithms behave differently than people depending on your goal: 1- Algorithms are literal: Once the goal is determined, algorithms rely exclusively on the input data, and can only understand what they were programmed to do.

Some deep learning algorithms represent black boxes; Algorithms can predict the outcome very accurately, but provide little or no explanation for the logic used to reach it, regardless of the data entered and the type of algorithm used (3). Health-related AI applications mainly analyze the relationship of prevention or treatment methods with patient outcomes. Artificial intelligence programs assist in the diagnosis process, contribute to improving treatment plans, drug development, patient monitoring and care, and are also used in the field of targeted personalized medicine. AI algorithms can also be used to analyze large amounts of data based on electronic health records to prevent and diagnose diseases. Some medical institutions have developed artificial intelligence algorithms for use in their departments, including the Mayo Clinic, Memorial Sloan Kettering Cancer Center, and the British National Health Service. Large technology companies, such as IBM and Google, for example, have developed AI algorithms for use in healthcare as well.(4)(5)(6) Hospitals are looking to use AI programs to support implementation initiatives that will save significant costs, increase patient satisfaction, and meet Employee and workforce needs. The US government is currently investing billions of dollars to develop artificial intelligence in healthcare. Companies are working on developing technologies that help health care managers improve their work by improving utilization management, reducing the waiting rate of patients admitted to the ambulance - due to the lack of available beds - reducing the length of their stay in the hospital, and determining the optimal number of employees.(7)(8)(9). The extensive use of AI in the health field is relatively new, so there are several new ethical concerns related to its use, such as data privacy, machine control of job opportunities, and similarity biases. Multiple specialties in medicine have shown an increase in the number of researches related to artificial intelligence. The specialty that has received the most attention is the field of radiology. (10)

2. Material and Methods:

The study began in (the city of Mecca in the Kingdom of Saudi Arabia), and the study ended with writing the data collection in September 2024. The researcher used descriptive analysis, an approach that uses quantitative or qualitative description of the social phenomenon (The role of

nursing in health uses of artificial intelligence). The independent variable (The impact of health uses of artificial intelligence on patients globally) and the dependent variable (The impact of health uses of artificial intelligence on patients locally). This type of study is characterized by analysis, reason, objectivity, and reality. It is also concerned with individuals and societies, as it studies the variables and their impact on the health of the individual, society, and the consumer, and the spread of diseases and their relationship. For demographic variables such as age, gender, nationality, and marital status. Status and occupation (11), and use the Excel 2010 Office suite pie chart to sort the results (12). The questionnaire is a wonderful and useful tool for collecting a huge amount of data, but the researchers were not able to conduct personal interviews with the participants in the online survey, due to social distancing rules at the time to prevent infection between participants and researchers and vice versa (Coronavirus sharing has not completely disappeared. of the community), and the questionnaire was only answered electronically, because the questionnaire consists of fifteen questions, all of which are closed-ended.

3. Results and discussion:

The percentage of approval to participate in the questionnaire entitled (The Impact of Health Uses of Artificial Intelligence in the Health Field) was 100%, and the age percentage of participants is as follows: from the ages of 25-34 years 12.5%, from the ages of 35-44 years 50%, and from the ages of 45-55 years 37.5%, and the percentage of male and female participants was as follows: the percentage of males and females was 12.5%, and the percentage of females was 87.5%, and their nationalities were all Saudi (men and women). As for their professions and jobs, they were all government employees, male and female. As for their educational status, it was 50% for university degree holders, 37.5% for diploma holders, and 12.5% for master's holders. As for the responses to the questionnaire questions, they were as follows: The first question: Does artificial intelligence improve the patient's experience in the field of health care? Yes 100%. The second question: Enhancing the uses of artificial intelligence in nursing practices to advance the nursing profession and enhance creativity and innovation? Yes, 87.5%, No, 0%, and I don't know, 12.5%. The third question: Promoting the use of artificial intelligence in nursing practices to advance the nursing profession and enhance creativity and innovation? The fourth question: Volunteering builds a CV? Question five: Does it contribute significantly to benefiting society from the services provided through volunteering? Question Six: Volunteering helps with time management and strategic planning? Question Seven: What do volunteer nurses do to help provide basic nursing care to patients? Question Eight: Health education, raising the level, activating the role of volunteers and building their capabilities to volunteer in the fields of humanitarian work? Question nine: Is volunteer work one of the most noble and altruistic activities in terms of giving? Question Ten: Volunteering achieves an important part of happiness and self-satisfaction and has many benefits for the soul and society? Question eleven: Nurses benefit from each other's experiences and exchange them while volunteering? Question 12: Does volunteering establish the concept of social responsibility? Yes 100%. Question thirteen: Do the Kingdom's colleges contribute and support volunteering and its importance? Yes, 87.5%, and No, 0%, and I don't know, 12.5%. The fourteenth question: Volunteering develops the skills of

dealing and communicating with others? The last question: Does volunteering in nursing help in acquiring more medical skills and information? Yes 100%. (table no.1)

Table:no-1: The impact of health uses of artificial intelligence in the health field, according to the opinions of participants in the questionnaire

The impact of health uses of artificial intelligence in the health field, according to the opinions of participants in the questionnaire	Yes	No	I don't know
Is artificial intelligence improving the patient experience in healthcare?	100%	0%	0%
Enhancing the uses of artificial intelligence in nursing practices to advance the nursing profession and enhance creativity and innovation?	87.5%	12.5%	0%
Nursing assistant applications, these applications allow for more regular communication between patients and medical care providers?	100%	0%	0%

There is a study entitled (How Intelligence artificial is changing nurse), for Nancy Robert 2019(13), she reported that Nursing will be impacted as new AI technologies delivering patient care, but the need for nurses will remain. Nursing experience, knowledge, and skills will transition to learning new ways of thinking about and processing information—the nurse will become the information integrator, health coach, and deliverer of human caring, supported by AI technologies, not replaced by them.

4. Conclusion:

We find that the impact of the health uses of artificial intelligence in the health field, according to the opinions of the participants in the questionnaire, Artificial Intelligence has improved the patient experience in healthcare by 100%, enhance the uses of artificial intelligence in nursing practices to advance the nursing profession and enhance creativity and innovation by 100%, These applications require more regular communication between patients and medical providers? 100%. With all these positives, it is not possible to do without nurses, and therefore this study is consistent with Nancy's study.

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