Review Article

Does ChatGPT Improve the Nurse-Patient Relationship in Hospital?

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Abstract

ChatGPT powered by a deep neural network is a free chatbot built by OpenAI that has initiated to disrupt the healthcare landscape since November 2022. Balancing technology and patient-centered care ChatGPT can enhance the nurse-patient relationship in hospitals. Nurse-patient relationship in hospital setting can be ameliorated with the application of virtual assistants, triage, clinical decision support, medical record keeping, medication management, symptom checkers and clinical trial recruitment. Nevertheless, it can lead to depersonalization of care on behalf of nurses or even ofpatients, who can feelbelittled and experience dissociationdue to possible misunderstandings. ChatGPT should not be used in the form of primary data source, as it cannot be verified for accuracy while personalized feedback is absent. However, integration of ChatGBT in hospitals and health systems todayis implemented really fast. Thus, ethical considerations, algorithmic transparency, excessive dependence on AI-generated information and protection of personal data should be taken intoserious consideration.

Keywords: ChatGPT; Nurses; Patients; AI; Communication; Hospital

Introduction

ChatGPT (Chat Generative Pre-Trained Transformer), powered by a deep neural network (DNN) is a free chatbot built by OpenAI which has disrupted the healthcare landscape since November 2022. GPT-3.5 (provides text analysis), and GPT-4 (a multimodal that accepts both text inputs and images), are ChatGPT's backbones. GPT-3.5 offers data up to 2021, GPT-4 up to 2022 while GPT-4 Turbo provides replies up to April 2023 [1]. In general, digital health (DH) is categorized into four types: Artificial Intelligence (AI), Machine Learning (ML) Deep Learning (DL) by means of natural language processing (NLP) and Large Language Models (LLMs). ChatGPT belongs to LLM category and has the potential to perform a great variety of natural language tasks, to improve diagnostics and patient disease risk prediction as well as to enable drug discovery [2,3].

Even if it is a pretty attractive new tool, health systems as well as hospitals are intensively working on testing out this particular technology to be sure whether it could be implemented on hospital setting [4]. The role of nurses is of crucial importance in the hospital environment,as they handle chronic conditions and physical needs, prevent injuries and illness, provide expert care and promote the well-being and health of patients. The nurse-patient relationship is shaped on reciprocal respect, understanding, trust and empathic and compassionate communication. ChatGPT can be incorporated into the field of nursing to assist nursing staff members to ameliorate patient care and improve their clinical decisions as regard to sick people. Thus, they should stay informed and adjust themselves to contemporary technologies and recent developments in order to be more productive and efficient on account of the arrival of AI health technologies (AIHTs) [5]. Nevertheless, owing to its very new and different nature, it is necessary to examine and analyze their contribution and use in healthcare sector. Critical evaluation is essential as AIHTs can validate and upgrade not only the quality of nurses'decision-making strategy but also affect the traditional nurse-patient interaction and relationship [6,7].

In this nursing healthcare perspective paper, we refer to the impact of ChatGPT on the healthcare system giving special emphasis on the nurse-patient relationship. In this day and age, the

integration of ChatGPT in nurse-patient relation is currently under discussion from many aspects, as its success depends on many factors. If it is a real blessing or curse mostly depends on the long-term benefits which will possibly outweigh the challenges.

Definition of the Nurse-Patient Relationship

The nurse-patient relationship is a major aspect in the advancement of nursing care as well as a key factor for holistic care combined with physical, psychological and social dimensions. It is based on the Fundamentals of Care Theory by Kitson (2018) and inherently associated with the nursing discipline [6]. The nurse-patient relationship involves complex attitudes and behaviors with ethical and deontological implications. It has also been linked to improvements in patient health outcomes. In addition, it is considered as a kind of necessary intervention in itself, which needs a particular training process similar to any other significant nursing skill. The fundamental characteristics of this specific relation are presence, confidence, contact (social interaction), sincerity, empathy, and mutuality. The nurse-patient relationship is a therapeutic, helping relation that is built with the patient and their family and relied on reciprocal influence, communication, active listening and respect for ethical values, tolerance as well as empathy with the aim of urging introspection and changing attitudes. Moreover, discretion and bioethical values are required so as to ensure the relationship is healthy and constructed on fairness and intimacy [8].

Nurse-Patient Relationship in Hospitals Confront Critical Challenges due to ChatGPT

However, ChatGPT should not be used in the form of primary data source. In addition, it would be possible to lead to depersonalization of care on behalf of nurses or even of the patients. Also, instead of communicating effectively, a distance can be established leading patients or nurses feel belittled and experience dissociation because of misunderstandings [9]. The rapid reproduction of ChatGPT content might contribute to infobesity (information overload) and inability to manage ambiguous queries, which can also have negative effects on nurse-patient relationship. Linguistic and cultural bias could become a big threat and contempt for healthcare systemsin favor of stereotypes and biased decision-making attitudes, erosion of trust, accountability and transparency of information due to overgeneralizationas well as quality inconsistency and explainability. Whilst data cannot be verified for accuracy and personalized feedback is absent, likewise emotional intelligence and self-awareness, this can negatively influence both nurses and patients' trust in science and the quality of their relationship [10,11].

Nurses are in charge of the patient information and communication with healthcare teams, having the ethical and legal obligation to constantly secure its integrity and availability. Allowing this information to ChatGPT, it may put the nurse–client relationship into great risk, while patients' lack of trust towards healthcare systems will possibly increase as they could feel threatened [12]. Emotion perception, compassion, commitment and empathy, which are central set of values to the discipline of nursing, may not be realized by ChatGPT due to lack of ability to get adapted to nursing disciplinary unique perspectives. Over-reliance on chatbots like ChatGPT could also result in skill loss from the nurses' side and pre-prepared

responses that could lead to more impersonal but less therapeutic communication. AI driven consultation as well as decision making could be a heavy burden on nurses' shoulders, as they always remain accountable for giving biased or not accurate information to patients- no matter if these answers belong to a chatbot [13].

Moreover, the data that people shared with ChatGPT is not permanently stored in the servers of OpenAI and as a result is not so safe. Consequently, it is of crucial importance nurses should protect any kind of confidential or classified information with respect to their patients. In addition, any ChatGPT implementation can bring a number of challenges, as the relationship of ChatGPT and GDPR (General Data Protection Regulation) regarding privacy laws is yet unclear. As responses are not evidence based, clinical practice should not be relied on the usage of chatbots. Even if it may enhance the efficiency and effectiveness of nurses, it is not in the position to replace the human communication and the therapeutically secure and supportive environment that nurses establish [14,15]. Also, the use of artificial intelligence in the health sector could favor the risk of automation bias which arises from over-reliance on the application of ChatGTP, undermine proper nurse-patient communication and encourage patient self-diagnosis [16].

How ChatGPT Can Improve the Nurse-Patient Relationship

The rise of ChatGPT in healthcare rings the bell not only for opening new horizons in the sector of e-health but also for the redefinition of the role of nursery staff. Its impact shapes the relationship between nurses and patients; a result that can be also depicted on the efficiency and accessibility of nursing staff, as its workload and administrative burden is diminished. As a real-time conversational model, its success absolutely depends on the effective training and education of staff nurses as well as patient educational support. Therefore, it is essential that language translation and cultural awareness be seriously considered to ensure that the instantly accessible information will be disseminated responsibly [17].

Balancing technology and patient-centered careChatGPT can enhance the nurse-patient relationship in hospitals with the application at first of virtual assistants. The usage of virtual assistants helps patients to get educated and manage their health issues is very significant via telemedicine. In this way, medical appointment scheduling, handling health information management or receiving treatment are available anytime, while ChatGPT gives responses to patient questions, facilitating the communication between patients and nurses while decreasing at the same time the burden on nurses' shoulders [12].

ChatGPT as a trustworthy triage assistant can help a lot throughout medical emergencies, in order to classify the patients, provide appropriate and understandable answers to both nurses and physicians regarding the seriousness and urgency of their condition, decrease waiting times and human errors as well as the burden on personnel. In that way, the nurse-patient relationship becomes stronger, as it allows nurses to have effective time management to improve patient care quality. The usage of ChatGPT can facilitate the increase of human judgement and the reduction ofnurses' burnout in hospital environment. Furthermore, making its performance more accurate about specific medical knowledge, such as mass casualty incidents,ChatGPT

can become a necessary and achievabletool for the near future [18,19].

Concerning clinical decision support (CDS) that entails perplex clinical logic, as ChatGPT is an AI-powered LLM, it can tackle a large number of duties of different natures when specifying a prompt to interact. This is very beneficial for accurate intelligent diagnostics in the field of radiology via standardized clinical images and insights as regards to cancer screening decisions that are based on gender, age and sensitivity of patient. Providing real-time, evidence-based recommendations clinical guidelines and highlighting potential drug interactions, clinicians have the opportunity to make fewer mistakes, save valuable time and promote quality patient care quality [20,21].

Paving the way for medical recording keeping management, ChatGPT can be used to make automatic text summary of patient interactions and medical histories, thereby transforming the medical recordkeeping process into a more optimal tool for nurses and doctors, as well. Medical professionals could make use of ChatGPT to automatically sum up key components, like diagnoses, treatments, symptoms and information extract that stems from patient records, like lab test results or diagnostic imaging reports. The nurse-patient relationship could be more benefited by helping patients to proper and safer handle their medications via reminders, dosage directions, potential side effects of drugs, and other significant considerations [17]. Additionally, medical recordkeeping would presumably have a positive impact on nurse-patient communication, whether both technical and medical terms could be translated fast and with precision.

Apropos medication management, ChatGPT can assist patients in understanding their medication routine as well as verifying their information with nurses who write down the medication schedule, and track any medicine changes to ensure patients' medication adherence-particularly those individuals with multiple and difficult prescriptions to follow-which are of vital importance for their health. ChatGPT can play a significant role in medication administration helping patients to handle their medication regimens and chronic conditions efficiently while decreasing the danger of medication errors via medicine reminders and directions for patient well-being and protection. If the nurse-patient relationship becomes more meaningful and dynamic, positive cooperation and health results will be encouraged, as well [21,22].

ChatGPT can contribute to personalized medicine and precision healthcare via: a) genomic data analysis, by identifying potential genetic markers or mutations that affect drug response or disease susceptibility, to ensure treatment recommendation as well as patient education and compliance [23].

In the field of clinical trial recruitment, ChatGPT could be used to provide guidance with regard to protocols and medical procedures to both nurses and patients. As a result, participants could be more easily enrolled for the purpose of the advancement of healthcare system and medical sciences. Clinical trials are a determining factor as for preventive strategies, medical diagnostic equipment and contemporary treatments. As recruitment is a pretty challenging situation, ChatGPT could also assist in identifying patients who actually meet the inclusion criteria protecting simultaneously both patients and nurses and their decision to cooperate by building a strong relationship for

nurses and patients in order to achieve their full potential [12]. Another fast, easy and much accurate promising tool for identifying and interpreting possible health troubles as well as symptoms for patients and health professionals is the symptom checker. Developed with the help of ChatGPT, potential diagnoses and recommendations are offered with a view to deciding on the best action plan at first to meet the needs of patients who are interested in staying motivated and informed and secondly to help reduce the workload of nursing staff [23]. In this way, nurse-patient relationship in hospitals would be more protected against poor communication, as more fine-tuned guidance and healing results could be realized.As a supplement, ChatGPT can also be used for applications that concentrate on offering mental health support. However, it cannot diagnose perplex mental health issues, prescribe drugs, or make personalized recommendations for treatment [23].

Integration of ChatGBT in Hospitals and Health Systems Today
The first hospital that announced its decision to integrate the ChatGPT chatbot into its triage process in emergency department is Tel Aviv Sourasky Medical Center. With the help of a short-formed questionnaire, chatbot at first assists patients in clearly expressing their health problems, and secondly nurses in having a pretty fast condition summary to help doctors to evaluate patient's issues, make diagnostic suggestions and initiate treatmentmore efficiently [25]. Today, many other clinics and hospitals are on the same path to discover ways to incorporate ChatGPT in the regular heath care. Mayo Clinic is testing out various use cases with the aim of creating a search tool which is called Enterprise Search on Generative AI App Builder, to classify and interpret patients' data and decrease the administrative overload [25]. A medical chatbot Med-PaLM 2, a Google's AI tool to give replies regarding medical information, is being tested at Mayo Clinic and is not released yet.

Other hospitals that try to leverage the new technology horizons to apply to the hospital setting for daily tasks and real medical care [27]. The Vanderbilt University Medical Center in USAtries to accelerate computer assisted alerts to provide significant clinical decision-making and make top suggestions [28]. Chapel Hill, N.C.-based UNC Health as well as Palo Alto, Calif.-based Stanford Health Care have started their cooperation with Microsoft and Epic to decrease the great amount of time that is spent from nurses and clinicians to reply patients' messages in computer, and increase patient experience and satisfaction [29]. Boston Children's Hospital also follows the same path of technological innovations to develop prompts to efficiently collect data from generative AI programs improving models for healthcare particular implementations [30]. Furthermore, Mount Sinai Health System is experimenting with AI chatbots, such as ChatGPT, to help patients to clearly decide if they are in need of real medical care (e.g., emergency care) or scheduling a doctor's appointment [31].

Conclusion
As a state-of-the-art language model, ChatGPT has already started to make a tremendous impact on hospital setting, especially on the nurse-patient relationship [17]. Apart from limitations and ethical considerations which should be definitely evaluated and addressed, ChatGPT, as a virtual tutor focus on nursing education, patient monitoring and decision-making, can facilitate the daily communication of nurses and patients on a daily basis. By keeping providing holistic and patient-cen-

tered care, ChatGPT can help nurses in real time to ensure not only timely interventions, but also the well-being and safety of patients in hospital environment. Provided that ethical considerations, algorithmic transparency, excessive dependence on AI-generated information and the protection of personal data should be taken into seriously consideration, the burden is on the global community in order to guide this brave new world in the most responsible way.

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