

# ROBOTIC AI DRIVEN CARE OF SELF CARE DEFICIENT PATIENTS

## Abstract

In the article we discussed about the AI robot how well get participate to take care of self deficit patient ; those who can't do there daily activity including doing for toilet ; it very difficult for nurse to handle it by clean the spoil bed without assistance to left the patient to chance the bed sheet. The robotic AI design like supporting arm with lifting the patient + handle.

The wire which attached with patient's body . It's a good technology which really helps hospitals management.

**Keywords:** AI robot how well get participate to take care of self deficit patient AI design like supporting arm.

## Author

**Ms. Akhileshwari Mallar**  
GNM 2nd year  
MGM F.N.Institute of Nursing Education  
Vashi, Navi Mumbai, India.  
akhileshwarimallar@gmail.com

Nurses face critical challenges in taking care of self care deficient patients. Coma patients, leg amputated, aged patients, bed sore patients and patients with fractures are some examples of self care deficient patients. One main task is to remove the spoiled bed and prepare a new bed. Perineal care is the crucial issue. Physiotherapy is another aspect of nursing. The paper highlights how robots and AI can meet the challenges in this aspect of nursing. The paper is composed using chatgpt.

## I. INTRODUCTION

Nurses face many critical challenges in care of self care deficient patients. In this paper, we highlight how a student pursuing nursing course can explore this context using modern AI tools and arrive at a research proposal to probe further.

### Section 1: Basics of Nursing

Given below is a summary of the textbook on Nursing.  
Nursing Textbook 11th Edition

Default (GPT-3.5)

User

Give a summary of the book "Fundamentals of Nursing : Concepts, Process, Practice", 11th Edition.

### ChatGPT

The 11th edition of "Fundamentals of Nursing: Concepts, Process, Practice" is a comprehensive textbook that serves as a foundational resource for nursing students. It covers essential topics in nursing, including nursing theory, patient care processes, and clinical skills. The book emphasizes the importance of critical thinking, clinical reasoning, and evidence-based practice in nursing care. It provides a solid understanding of the nursing process, health promotion, and patient-centered care. Additionally, it discusses contemporary issues and challenges in nursing practice. Overall, this edition continues to be a vital resource for nursing education, offering a strong foundation for future nurses.

### Section 2: Self Care Deficit Patients

In the text book, there is no separate chapter about self care deficient patients. We take the help of chatgpt, as given below.

User

Give a brief idea of self care deficient patients.

### ChatGPT

Self-care deficient patients, often referred to as "self-care deficit" patients, are individuals who have difficulty or are unable to meet their basic self-care needs due to

various factors, including physical limitations, cognitive impairment, or a lack of knowledge and skills. Here are key characteristics of self-care deficient patients

- **Dependency:** They rely on others, such as family members, caregivers, or healthcare professionals, to perform essential activities of daily living (ADLs), including bathing, dressing, eating, and toileting.
- **Impaired Mobility:** Physical disabilities, injuries, or illnesses may limit their ability to move independently, making it challenging to perform self-care tasks.
- **Cognitive Impairment:** Patients with cognitive disorders like dementia may struggle with decision-making, memory, and recognizing their own self-care needs.
- **Lack of Knowledge:** Some individuals may lack the knowledge or understanding of how to manage their health conditions, take medications, or follow prescribed treatments.
- **Chronic Illness:** Patients with severe chronic illnesses may require specialized care and monitoring, making self-care difficult without external assistance.
- **Vulnerability:** Self-care deficient patients may be more susceptible to complications and health deterioration due to their inability to meet basic self-care needs.
- **Need for Support:** They often need comprehensive care plans and support systems in place to address their specific self-care deficits and maintain their overall well-being.

Healthcare professionals, including nurses and caregivers, play a crucial role in assisting self-care deficient patients by assessing their needs, developing care plans, and providing the necessary support to help them achieve the highest level of independence possible.

### **Section 3: Robots assisting Nursing for Self Care Deficit Patients**

We will focus on one nursing skill related to self care deficient patients: Changing the occupied bed for a self care deficit patient. Here the nurse will need another assistant. Sometimes assistants may not be available, leading to delayed change of the bed. If it is spoiled bed, it can lead to infections. Here the necessity of robot is evident. The patient may be connected various treatment related tube (IV infusion types, oxygen supply, nasal cannula, tracheostomy tube, NG tube, drainage tube, urine catheter ). The robot should be intelligent enough to understand the specific conditions of the patient and coordinate with the nurse.

User

Is there a robot to assist nurse in care of patient of neurological disorders.

## ChatGPT

As of my last knowledge update in September 2021, there were ongoing developments and research in using robotics and artificial intelligence to assist in neurological disorders. These technologies have the potential to provide various forms of support in healthcare settings. Here are some ways in which robots can assist nurses and healthcare professionals in caring for patients with neurological disorders:

- **Physical Assistance:** Robots can assist patients with mobility issues due to neurological disorders by helping them with tasks such as getting out of bed, walking, or transferring from one place to another.
- **Rehabilitation:** Robotic devices are being used in neurorehabilitation to aid patients in regaining motor skills and improving muscle strength and coordination.
- **Medication Management:** Robots can assist in medication administration by ensuring patients take the right medications at the correct times. They can also help monitor and manage medication adherence.

We see from the reply given by Chatgpt, its knowledge is limited to timeline 2021.

We take help other gpt model.

We used Bing.

We came to know about six types of robots operational in this context.

For example,

MOXI is a robot that assist nursing care. It has been developed by Texas based Diligent Healthcare.

## Section 4 :Intelligent Beds

We explore about availability of intelligent beds for self care deficit clients.

We take help of scholar-ai chat

Welcome to Scholar-Chat,  
your dedicated AI companion for scholarly endeavors.  
intelligent bed for self care deficit clients

Based on the papers cited, it seems that there is limited research specifically on an intelligent bed for self-care deficit clients. However, there are several studies that explore the use of smart technology and information systems to support self-management and responsive care for individuals with various health conditions [1, 2, 3, 4, 5, 6, 9, 10]. These technologies range from mobile applications to smart home automation and have been used to improve glycemic control, emergency nursing management, and caring for individuals with Alzheimer's disease and related dementia. While there is no direct evidence on the use of intelligent beds for self-care deficit clients, these studies suggest that smart technology and information systems may have the potential to support self-management and responsive care in a variety of health conditions.

- Application of intelligent nursing information system in emergency nursing management
- M-Healthcare Model: An Architecture for a Type 2 Diabetes Mellitus Mobile Application
- Improving Glycemic Control via Diabetes Self-Management With a Smartphone Application
- A Smart Technology Intervention in the Homes of People with Mental Illness and Physical Comorbidities
- Smart home automation technology to support caring of individuals with Alzheimer's disease and related dementia: an early intervention framework
- Moving towards integrated and personalized care in Parkinson's disease: A framework proposal for training Parkinson nurses
- Reliability and Validity Testing of the ASSIST Functional Performance Index
- The Building Blocks of Bots
- Intelligent data processing to support self-management and responsive care
- Smart Homes

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## Section 5: Indian Situation

We try to access the indian situation.

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Robotic ai assistance for nursing for self care deficit clients : indian situation

Based on the papers cited, there are several studies that explore the use of robotic AI assistance for nursing and healthcare in general [4, 6, 7, 10]. However, there is limited research specifically on the use of robotic AI assistance for self-care deficit clients in the Indian context. One study focused on using AI to detect and manage diabetes mellitus, which could potentially be adapted for self-care deficit clients [1]. Another study explored the use of digital twins for emergency hospital services, which could potentially be used in the Indian context [9]. Overall, there is potential for the use of robotic AI assistance in nursing for self-care deficit clients, but more research is needed to explore its effectiveness and feasibility in the Indian context.

- Machine learning and artificial intelligence based Diabetes Mellitus detection and self-management: A systematic review
- Depression detection for elderly people using AI robotic systems leveraging the Nelder–Mead Method
- Ecosystem model for healthcare platform
- Artificial intelligence and Psychiatry: An overview
- The novel emergency hospital services for patients using digital twins
- Socially assistive robots helping older adults through the pandemic and life after COVID-19
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- Advanced Method of MOB-I App Used for Medical and Agriculture
- Redefining Industry 5.0 in Ophthalmology and Digital Metrology: A Global Perspective
- Depression detection for elderly people using AI robotic systems leveraging the Nelder–Mead Method
- [PDF][PDF] Artificial intelligence in bringing about a revolution in the healthcare industry
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## II. CONCLUSION

By systematic analysis, using AI tools, we have identified a research theme :design and development of intelligent beds for self care deficit patients. The paper demonstrates the way AI tools can benefit in a remarkable way nursing education and research.

Kozier & Erb's Fundamentals of Nursing: Concepts, Process, and Practice, Pearson, 11th Edition.