

Research Article

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AI-Simulated Doctor's Rounds in a Memory Ward with Alzheimer's Patients: Using Simulation and Mind Genomics Thinking to Explore and to Teach the Doctor-Patient Interaction

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ABSTRACT

This paper focuses on AI simulations of the “rounds” made by doctors in a facility devoted to dementia in general and to Alzheimer's Disease in particular. The paper is divided into three distinct steps: the “town hall,” the junior doctor rounds, and the creation and exploration of minds-sets among doctors and, in turn, among their patients. These simulations provide guidance, enabling students to learn diagnostic skills in a risk-free, education-based environment. The simulations capture the complexities of human thought and behavior, enhancing empathy and communication with patients and their families. Generative AI simulations have the potential to transform the way medical students learn about and interact with patients with dementia, enhancing their understanding, diagnostic and communication skills, and ultimately improving the quality of care they provide.

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Abbreviations

1. AI: Artificial Intelligence
2. ChatGPT: Chat Generative Pre-Trained Transformer

Introduction

Open rounds in clinics provide a social and comfortable environment for patients and students to interact and learn from each other, reducing stigma and improving patient care. The structured format of asking and answering questions helps students learn how to communicate effectively with patients with cognitive impairments, ultimately improving the quality of care. Identifying different mind-sets and understanding their thought processes can further help students develop empathy and adapt their communication style accordingly [1-3].

During rounds, doctors and medical students should demonstrate sensitive and respectful approaches to patients with Alzheimer's, recognizing at the same time the confounding and frustrating challenges involved regarding communication. Current practice is that as the disease evolves, students are encouraged to ask more open-ended, person-centered questions, considering each patient's unique experiences and preferences. Students are taught to observe body language, facial expressions, and tone of voice as alternative messages to simple verbal communication so much easier in other cases.

A dementia clinic associated with medical and nursing students can provide practical experience in interacting with and caring for dementia patients. This hands-on approach fosters empathy and understanding for the challenges faced by Alzheimer's patients. The open rounds format fosters relaxed communication between patients, doctors, and students, resulting in more meaningful interactions. The students are trained in effective communication, patient-centered care principles, empathy-building exercises, role-playing scenarios, and supervised clinical experience in clinical settings [4,5].

A structured approach to communication improves patient interactions, ensuring all parties feel heard and supported. Encouraging patients to ask questions and engage in conversation empowers them and gives them a sense of agency in their care. The structured approach of repeating and prefacing questions ensures clear communication and understanding, reducing the risk of misunderstandings or confusion.

Strategies to make patients feel more comfortable include maintaining a calm demeanor, using nonverbal cues, providing sensory stimulation, ensuring privacy and dignity, offering emotional support, and promoting a sense of security and familiarity. Individual needs and preferences are addressed by conducting thorough assessments, creating personalized care plans, offering choices, utilizing familiar routines, providing specialized support services, and involving patients in decision-

making processes. Family members or caregivers play a crucial role in the process by providing insights, emotional support, assisting with daily care tasks, advocating for the patient's needs, participating in care planning meetings, and collaborating with the healthcare team. The process can be tailored for patients' different stages of Alzheimer's by adjusting communication methods, simplifying instructions, using visual aids, providing structured routines, offering memory aids, and tailoring care plans [6-8].

The open rounds process for Alzheimer's patients may not be suitable for all patients due to potential limitations such as discomfort, confusion, and inability to fully address individual needs and preferences. Some patients may require personalized communication and care, which may not be fully addressed in a group setting. Additionally, the process may not adequately prepare students for the challenges and complexities of working with Alzheimer's patients in a clinical setting [9].

The biggest challenges faced by Alzheimer's patients include communication barriers, behavior management, cognitive decline, emotional distress, resistance to care, and difficulty building trust and rapport. Using a structured format of questions and answers may limit the ability to adapt to the unique needs and behaviors of individual patients [10,11].

For patients at more advanced stages of Alzheimer's, alternative methods of communication, such as gestures or visual aids, may be more appropriate. The open rounds format can create a supportive environment but may be time-consuming and not practical for all clinical settings [12,13].

The Value of Generative AI

Generative AI can be used in medical training to simulate rounds with Alzheimer's patients, providing young doctors with a controlled environment, allowing repetitive practice. The repetition with unexpected modifications to maintain interest helps students gain confidence in their communication skills and familiarize themselves with real-life scenarios. AI-generated responses can provide immediate feedback, allowing doctors to refine their approach and improve patient interactions. It exposes young doctors to a wide range of possible patient responses and behaviors, helping them develop empathy and a deeper understanding of Alzheimer's patients' challenges. Generative AI can also help doctors tailor their questions and responses to individual preferences, leading to more meaningful interactions and improved patient outcomes. However, over-reliance on AI simulations could create overconfidence and raise ethical concerns, particularly regarding patient privacy and autonomy. Despite these drawbacks, AI simulations can be a valuable tool to prepare young doctors and nurses to interact with Alzheimer's patients [14-16].

Part 1-Simulating Rounds

Simulating rounds with young doctors before they enter the wards is an invaluable step in their training. By participating in these simulations, doctors and nurses can practice communication skills, gain insight into the unique needs and behaviors of patients with Alzheimer's, and develop problem-solving and critical thinking skills in a safe and controlled environment. They can also develop observational skills and recognize non-verbal cues and signs of distress in patients with Alzheimer's [17-19].

Emotional intelligence and empathy can also grow through simulations. By experiencing the challenges of patients firsthand, doctors gain a deeper understanding of the emotional impact of Alzheimer's on both patients and their families. This can help them to provide more compassionate and holistic care for their patients in the future.

Whereas some may argue that playing with computers in simulations is not as valuable as going directly into the wards and working with real patients, it is important to recognize the benefits of this preparatory step. Simulations provide a safe space for doctors to practice and refine their skills without the pressure of getting everything right the first time. It allows them to make mistakes, learn from them, and ultimately become more confident and competent in their abilities to care for patients with Alzheimer's [20-22].

The value of simulating rounds with Alzheimer's patients appears obvious. By engaging in these simulations, young doctors and nurses develop a deeper understanding and empathy for the patients with whom they will be working. Novice medical professionals end up with a deeper grasp of the communication challenges which come with Alzheimer's, ranging from recognizing these challenges to knowing how to effectively navigate them. Doctors can tailor their approach by getting into the mind of both the person, whether the person is asking a question or answering one posed [23-25].

Table 1 shows the first part of the process, simulated rounds. The process provides the question, then shows who asked the question, why the question was asked and a "good," meaningful answer. Such questions can be generated in seconds, with sets of five questions generated in about 15 seconds. Table 1 shows only a small percentage of the many questions that could be asked. Of course, we assume that with the beyond 100 or so questions, we are likely to get repeat questions more frequently, or questions that differ minimally from questions already asked.

Table 1: Part 1 of the process showing questions asked of patients on rounds, asked by the doctor, the nurse, or students

Part 1: Questions and Answers Emerging with Rounds

I manage a clinic where we work with Alzheimer's patients. In my clinic, many students come for a four-week rotation as they learn about the world of medicine. These students are newly graduated students around the ages of [AGE RANGE]. My clinic is often the first specialized clinic they encounter dealing with dementia.

When I introduce them to patients who have Alzheimer's, often these patients present in different ways when I ask them questions.

To help my students learn what to say in the clinic, I hold open rounds. In the rounds, the patients and doctors meet each other in a socially comfortable situation with food and breakfast. At that time, the patients can ask the students or the attending physician different questions, and vice versa, answer the following:

For the question, repeat the question. Preface by the phrase: Question Asked:

Who asked the question? Preface by the phrase: Who Asked:

Why did the person ask the question, whether patient or doctor? Preface by the phrase: Why Question Asked:

What is a good, meaningful answer to the question? Preface by phrase: Good Answer?

What did the person who asked the question think when getting the answer? Preface by phrase: Thoughts by the Asker about the Answer

Question 1: How has Alzheimer's impacted your daily life?

Who Asked: Doctor asks patient to get the patient to talk.

Why Question Asked: Patient wants to share their experience with the students and doctors.

Good Answer: A meaningful answer would involve discussing specific challenges the patient faces and how they cope with them on a daily basis.

Thoughts by the Asker about the Answer: Patient may feel relieved to share their experience and hopeful that the students and doctors will gain a better understanding of their condition.

Question 2: What are some strategies you use to help manage your symptoms?

Who Asked: Doctor ask patient directly.

Why Question Asked: Doctor wants to learn about effective coping mechanisms that can be shared with other patients.

Good Answer: A good answer would involve discussing strategies such as creating a daily routine, using memory aids, and staying physically active.

Thoughts By The Asker About The Answer: Doctor may feel inspired by the patient's proactive approach to managing their symptoms.

Question 3: How do you feel about your diagnosis?

Who Asked: Student asks the patient.

Why Question Asked: Student wants to understand the emotional impact of Alzheimer's on the patient.

Good Answer: A meaningful answer would involve discussing the patient's emotions, fears, and acceptance of their diagnosis.

Thoughts By The Asker About The Answer: Student may gain a deeper understanding of the patient's emotional journey with Alzheimer's.

Question 4: How long have you been experiencing symptoms of Alzheimer's?

Who Asked: The attending physician asks the patient.

Why Question Asked: To understand the progression of the disease in the patient

Good Answer: Patient responds, "I first noticed symptoms about [NUMBER] years ago."

Thoughts by the Asker about the Answer: The doctor now has a better timeline of the patient's disease progression.

Question 5: How do you feel about being in a specialized clinic for Alzheimer's patients?

Who Asked: A student asks the patient.

Why Question Asked: To gauge the patient's comfort level and emotions.

Good Answer: Patient says, "It's comforting to be surrounded by others who understand what I'm going through."

Thoughts by the Asker about the Answer: The student gains insight into the patient's perspective on their care environment.

Question 6: What challenges do you face on a daily basis due to Alzheimer's?

Who Asked: A student asks the patient's family member.

Why Question Asked: To understand how to better support the patient.

Good Answer: Patient responds, "I struggle with remembering names and get easily confused."

Thoughts by the Asker about the Answer: The family member now has a clearer picture of the patient's daily struggles.

Question 7: How long have you been experiencing symptoms of Alzheimer's?

Who Asked: Doctor asks the patient, based upon the patient's expressed curiosity in the disease.

Why Question Asked: The patient is curious about their own disease progression and wants to understand more about their condition.

Good Answer: I have been experiencing symptoms for about [NUMBER] of years now.

Thoughts by the Asker about the Answer: The patient may feel validated in their own experiences and more prepared for the future.

Question 8: What treatment options are available for Alzheimer's patients?

Who Asked: Patient's family asks the doctor.

Why Question Asked: The patient's family wants the doctor to provide the patient with information on potential treatment plans and solutions.

Good Answer: Treatment options for Alzheimer's may include medication, therapy, and lifestyle changes to help manage symptoms.

Thoughts by the Asker about the Answer: The doctor may be considering the best course of action for the patient and evaluating potential next steps.

Question 9: How has Alzheimer's affected your daily life and relationships?

Who Asked: Doctor asks the patient in response to patient's questions.

Why Question Asked: The patient may be seeking advice or support on managing the impact of their disease on their personal life.

Good Answer: Alzheimer's has affected my memory and ability to perform daily tasks, which has put a strain on my relationships with loved ones.

Thoughts by the Asker about the Answer: The patient may be feeling isolated or overwhelmed by the changes in their life and may be looking for understanding and empathy from others.

Question 10: What are the common symptoms of Alzheimer's that I should be aware of?

Who Asked: Student asks the doctor.

Why Question Asked: To educate themselves on the signs and symptoms of Alzheimer's for future reference.

Good Answer: Common symptoms include memory loss, confusion, difficulty completing familiar tasks, and changes in mood or behavior.

Thoughts By The Asker About The Answer: The student may feel more knowledgeable and equipped to identify potential Alzheimer's symptoms in future patients.

Question 11: How do you feel about attending this clinic for Alzheimer's patients?

Who Asked: A student on rotation asks the patient.

Why Question Asked: To gauge the patient's comfort level and experience in the clinic.

Good Answer: The patient appreciates the care and support provided by the clinic staff.

Thoughts by the Asker About the Answer: The student wants to ensure the patient feels welcomed and valued in the clinic.

Question 12: What do you enjoy participating in at the clinic?

Who Asked: The nurse at the clinic asks the patient.

Why Question Asked: To encourage patient engagement and social interaction.

Good Answer: The patient enjoys attending art therapy sessions and music therapy classes.

Thoughts by the Asker about the Answer: The nurse is assessing the patient's interests to create a more personalized care plan.

Question 13: What type of treatments have you tried for managing Alzheimer's symptoms?

Who Asked: A student on rotation asked the doctor.

Why Question Asked: To learn about different approaches to managing the disease.

Good Answer: The patient has tried medication, cognitive therapy, and lifestyle modifications.

Thoughts by the Asker About the Answer: The student is interested in understanding the effectiveness of different treatment options.

Part 2-Opening the Approach up to Five Doctors, to Learn, Do, Teach

The SEED QUESTION approach is a method used to stimulate memory and cognitive functions in patients with dementia. It encourages recall of specific details and active thought processes, slowing cognitive decline and improving brain function over time. Doctors tailor the SEED QUESTION to each patient's needs, considering their interests, personal history, and cognitive abilities. While research on its effectiveness is limited, some studies suggest it may stimulate cognitive abilities and promote meaningful activities. However, potential drawbacks include the need for individualized approaches due to varying cognitive function levels, challenges in consistent implementation,

and frustration for patients struggling with answering questions. Despite these challenges, the SEED QUESTION approach improves the quality of life and emotional well-being in dementia patients by promoting social interaction, stimulating cognitive function, providing self-expression opportunities, and fostering a sense of accomplishment and empowerment. Table 2 shows three SEED QUESTIONS interpreted by student doctors. Each question is initially asked by an instructor, and the student doctors reframe the question before asking it to different patients. The table highlights the thought process behind each doctor's variation of the question, the patient's answer, and the doctor's interpretation of the answer.

Table 2: Seed questions and the modification of each seed question by five doctors, along with the question-and-answer session with the patient

PART 2: Seed Questions and their Interpretation by Student Doctors
We are seeing patients who are suffering from dementia. The practice is that I ask a relevant question to the five doctors. Then each of my five doctors tries to ask the same question to one of the next five patients. Each doctor goes to a room and asks the patient the doctor's version of the Seed Question.
Please give me my question, and the five versions of my question, each version from a different doctor. And then explain each question what the doctor who asked the question was thinking when the doctor asked the question. And explain what the patient answered. And finally, show what the doctor interpreted the answer to mean.

Seed Question 1: What is your favorite memory from your childhood?
Doctor 1: What is a happy moment from when you were a kid?
Doctor 1's thinking: Trying to spark a positive memory from the patient's past.
Patient's answer: The patient smiles and recalls a family picnic at the beach.
Interpretation: The patient likely values time spent with loved ones and finds joy in outdoor activities.
Doctor 2: Can you tell me about a special moment from when you were younger?
Doctor 2's thinking: Eliciting a specific memory that stands out in the patient's mind.
Patient's answer: The patient nostalgically talks about receiving a special toy for their birthday.
Interpretation: The patient may find comfort in familiar objects and attachments from their past.
Doctor 3: Do you have a favorite childhood memory that you enjoy thinking about?
Doctor 3's thinking: Encouraging the patient to reflect on a memory that brings them happiness.
Patient's answer: The patient recalls playing with their siblings in the backyard. Interpretation: The patient values time spent with family and the sense of camaraderie it brings.
Doctor 4: Tell me about a happy moment from when you were a child that you still remember fondly.
Doctor 4's thinking: Prompting the patient to recall a specific memory that has stuck with them over the years.
Patient's answer: The patient talks about winning first place in a school talent show.
Interpretation: The patient may find pride in their accomplishments and appreciate recognition for their talents.
Doctor 5: Can you share a special memory from your childhood that brings a smile to your face?
Doctor 5's thinking: Encouraging the patient to focus on positive experiences from their past.

Patient's answer: The patient reminisces about baking cookies with their grandmother. Interpretation: The patient finds joy in bonding with family members and engaging in familiar activities.

Seed Question 2: What year is it?
Doctor 1: What year do you think it is?
Thinking: Doctor 1 is trying to assess the patient's current awareness and cognitive functioning based on their understanding of time.
Patient's answer: Patient answers correctly, stating the current year.
Interpretation: Doctor 1 interprets the answer as a sign that the patient is still in touch with reality and has a good grasp of time.
Doctor 2: Can you tell me the current year?
Thinking: Doctor 2 is looking to see if the patient can recall specific details and demonstrate their memory skills.
Patient's answer: Patient struggles to remember the current year.
Interpretation: Doctor 2 interprets the answer as a possible sign of memory impairment and difficulty in maintaining a sense of time.
Doctor 3: Do you know what year we are in?
Thinking: Doctor 3 is trying to prompt the patient to provide a clear and direct answer without giving away too much information.
Patient's answer: Patient confidently states the current year.
Interpretation: Doctor 3 interprets the answer as a positive sign that the patient is still able to retain important information and communicate effectively.
Doctor 4: Can you tell me the year you think it is currently?
Thinking: Doctor 4 is trying to gauge the patient's subjective perception of time and their ability to make accurate judgments.
Patient's answer: Patient gives a vague answer and is unsure of the current year.
Interpretation: Doctor 4 interprets the answer as a potential indicator of confusion and disorientation about time.
Doctor 5: What year do you believe we are in right now?
Thinking: Doctor 5 is trying to assess the patient's level of insight and awareness by asking a more open-ended question.
Patient's Answer: Patient provides an incorrect year but seems confident in their answer.

Doctor Interpretation: Doctor 5 interprets the answer as a sign of possible memory difficulties and confusion about the current time.

Seed Question 3: Do you remember where you grew up?

Doctor 1: How long did you live in your hometown before moving?

Thinking: This doctor wants to gauge the patient's memory and ability to recall past information.

Patient's Answer: The patient hesitates for a moment before remembering they grew up in a small town.

Interpretation: The patient's delayed response may indicate some mild memory issues, but overall, their ability to recall past information is intact.

Doctor 2: Can you tell me about your childhood home?

Thinking: This doctor is looking to prompt the patient to share specific memories or details about their upbringing.

Patient's Answer: The patient eagerly begins describing their childhood home, recalling vivid details.

Interpretation: The patient's ability to recall specific details about their childhood home suggests good memory function.

Doctor 3: What was your favorite memory growing up?

Thinking: This doctor is attempting to engage the patient in a positive, nostalgic conversation to stimulate memory recall.

Patient's Answer: The patient smiles and shares a heartwarming memory from their childhood.

Interpretation: The patient's ability to recall and share a specific favorite memory indicates good long-term memory function.

Doctor 4: Can you tell me about your childhood friends?

Thinking: This doctor is hoping to trigger the patient's memory by asking about social relationships from their past.

Patient's Answer: The patient struggles to recall specific names but shares general memories of playing with friends.

Interpretation: The patient's difficulty in recalling specific names may suggest some mild memory issues, but their ability to remember general interactions with friends is preserved.

Doctor 5: What do you miss most about your childhood?

Thinking: This doctor is trying to elicit emotional memories from the patient to engage their memory recall.

Patient's Answer: The patient wistfully talks about missing the carefree nature of childhood and the innocence of youth.

Interpretation: The patient's emotional response and ability to articulate feelings about their childhood suggests intact emotional memory function.

Part 3-Mind-Set, Different Ways of Thinking about the Same Topic

In order to provide appropriate care and therapy, it is essential to understand and then use mind-sets. A mind-set is a systematic pattern of what a person thinks to be the most important aspects of an issue. Mind-sets emerge at the level of the granular, where we live. Examples of mind-sets are differences in what a person feels is the way that they interact with their doctor, with one mind-set thinking that the doctor stands next to God, whereas another mind-set thinks that the doctor is a paid professional to do what is best for the person's health.

Mind-sets are ubiquitous. They appear in topics ranging from shopping for food to response to legal issues in a trial [26-28]. They are important for medicine as well. Doctors' mind-sets and perspectives affect how they diagnose and treat patients. Doctors' views regarding Alzheimer's disease and their own prejudices can affect the standard of care they offer. Since the patient may find it difficult to express their thoughts and feelings owing to cognitive impairments, it is crucial to understand the patient's mind-set in order to communicate effectively and satisfy their requirements. One may better care for their patients and achieve better results by identifying these mind-sets and using that knowledge to analyze their actions. By analyzing the unique mind-sets of both parties involved, healthcare providers can tailor their approach to better meet the needs of their patients. By recognizing the different perspectives and biases physicians may have, healthcare providers can better understand the cognitive impairments and challenges faced by Alzheimer's patients. This understanding can lead to more compassionate and person-centered care, improving the quality of care and overall treatment experience for patients.

By using Mind Genomics to analyze the mind-sets of physicians and patients in dementia interactions, healthcare providers can gain valuable insights into how best to approach diagnosis, treatment, and communication. This personalized approach can lead to more effective care, improved patient outcomes, and greater overall satisfaction with the healthcare experience [29].

Understanding the unique mind-sets of Alzheimer's patients can help healthcare providers navigate challenging behaviors and communication barriers, leading to more positive outcomes. By recognizing and addressing these mind-sets, healthcare providers can create a more supportive and understanding environment for individuals with dementia. Additionally, understanding the mind-set of patients is essential, as their cognitive impairments may make it difficult for them to communicate their needs effectively.

With the foregoing introduction to mind-sets, we can better understand the questions and the three dialogues emerging from the seven simple questions asked by the doctor. Table 3 shows the dialogue, which may come from the doctor or from the patient. The purpose of these dialogues is to suggest the different "shadings" of what can be communicated to patients.

Table 3: A doctor's question and the answer in the form of an ensuing dialogue

<p>PART 3: Doctor asking Questions and Dialogue Ensuing with three Mind-Sets of Patients</p> <p>I manage a clinic where we work with Alzheimer's patients. In my clinic many students come for a four-week rotation, as they learn about the world of medicine. These students are newly graduated students around the ages of [AGE RANGE]. My clinic is often the first specialized clinic they encounter, dealing with dementia.</p> <p>When I introduce to them patients who have Alzheimer's, often these patients present in different ways when I ask them questions.</p> <p>To help my students learn what to say in the clinic, I hold open rounds. In those rounds, the patients and doctors meet each other, in a socially comfortable situation, with food and breakfast. At that time, the patients can ask the students or the attending physician different questions, and vice versa, answer the following:</p> <p>For the question, repeat the question. Preface by the phrase: Why Doctor Asked this Question:</p> <p>For each question asked, provide the dialogue which might ensue as the doctor and the patient interact with each other. The dialogue may come from the doctor, from the patient, or from a synthesis of both, as appropriate for the topic and for the mind-set of the particular patient.</p> <p>There are three mind-sets of patients:</p> <ul style="list-style-type: none">Patient seeking validationPatient seeking informationPatient seeking reassurance <p>Question 1: Can you tell me about your experience living with Alzheimer's?</p> <p>Why Doctor Asked this Question: The doctor is trying to encourage the patient to open up about their feelings and experiences.</p>
<p>Patient Seeking Validation: Living with Alzheimer's has been challenging, but I have learned to adapt and find joy in small moments. It can be frustrating at times, but I have a strong support system that helps me cope. Overall, I try to remain positive and focus on the present moment.</p> <p>Patient Seeking Information: Living with Alzheimer's can present many challenges, but there are resources and support available to help you navigate through them. It's important to stay informed about your condition and to communicate your needs to your healthcare team. Remember, you are not alone in this journey.</p> <p>Patient Seeking Reassurance: Living with Alzheimer's is a difficult journey but know that you are not alone. There are professionals and support groups that can help you cope with the challenges you may face. Remember to take each day as it comes and to lean on your loved ones for support.</p> <p>Question 2: What are some coping mechanisms you have found helpful in managing your symptoms?</p> <p>Why Doctor Asked this Question: The doctor wants to provide the patient with personalized recommendations for coping with their symptoms.</p> <p>Patient Seeking Validation: I have found that maintaining a routine and engaging in activities that stimulate my brain have been helpful in managing my symptoms. I also rely on the support of my family and friends to help me navigate through difficult moments.</p> <p>Patient Seeking Information: Some coping mechanisms that have been helpful for me include practicing mindfulness and staying physically active. I also find comfort in participating in support groups and connecting with others who understand what I am going through. It's important to find what works best for you and to reach out for help when needed.</p> <p>Patient Seeking Reassurance: Managing Alzheimer's symptoms can be challenging, but there are strategies that can help improve your quality of life. Connecting with others who are going through similar experiences, engaging in meaningful activities, and seeking professional support are all important in coping with the challenges that may arise.</p> <p>Question 3: How are you feeling today? Are there any changes in your symptoms that you would like to discuss?</p> <p>Why Doctor Asked this Question: The doctor is focused on monitoring the patient's progress and providing appropriate care for their symptoms.</p>

Patient Seeking Validation: Today, I am feeling a bit more fatigued than usual, and I have noticed some mild forgetfulness. I would like to discuss these changes with you to see if there are any adjustments that need to be made to my treatment plan.

Patient Seeking Information: I am feeling generally okay today, but I have been experiencing some difficulty with my sleep and occasional confusion. I would like to discuss these changes with you to see if there are any interventions or strategies that can help me manage these symptoms.

Patient Seeking Reassurance: I am feeling a bit overwhelmed today and have noticed an increase in my anxiety levels. I would like to discuss these symptoms with you to make sure that they are part of the normal progression of my condition and not something more concerning.

Question 4: How are you coping with the changes in your memory and cognition?

Why Doctor Asked this Question: The doctor is empathizing with the patient and trying to understand their emotional and psychological response to their diagnosis.

Patient Seeking Validation: Coping with the changes in my memory and cognition has been difficult, but I have found solace in expressing my thoughts and feelings through journaling and art. I also lean on my loved ones for support and encouragement during tough times.

Patient Seeking Information: I am still trying to figure out how to cope with the changes in my memory and cognition, and I am open to exploring new strategies. I have started to engage in cognitive exercises and mindfulness practices to help improve my focus and mental clarity.

Patient Seeking Reassurance: Coping with the changes in my memory and cognition has been challenging, but I am slowly learning to accept and adapt to my new reality. I find comfort in knowing that there are support systems in place to help me navigate through these changes, and I am committed to staying positive and resilient.

Question 5: Can you share a recent experience that made you feel connected or engaged with your surroundings?

Why Doctor Asked This Question: The doctor is interested in promoting activities that enhance the patient's sense of connection and engagement with their environment.

Patient Seeking Validation: A recent experience that made me feel connected was when I participated in a painting class with other individuals living with Alzheimer's. It was a meaningful and enriching experience that allowed me to express myself creatively and connect with others who share similar challenges.

Patient Seeking Information: I recently attended a music therapy session at the clinic, and it brought back memories from my childhood that made me feel connected to my past. Music has always been a powerful tool for me to engage with my surroundings and evoke emotions that I may have forgotten.

Patient Seeking Reassurance: I recently volunteered at a local community center, and it made me feel engaged and connected with others in a meaningful way. Despite my Alzheimer's diagnosis, I find purpose and fulfillment in giving back to my community and helping others, which brings me a sense of connection and joy.

Question 6: How has your social support system been helping you cope with your Alzheimer's diagnosis?

Why Doctor Asked this Question: The doctor is interested in understanding how the patient's social network influences their coping mechanisms and overall quality of life.

Patient Seeking Validation: My social support system has been instrumental in helping me cope with my Alzheimer's diagnosis. My family and friends provide me with emotional support, encouragement, and a sense of belonging that helps me navigate through the challenges of my condition.

Patient Seeking Information: My social support system has been a mixed bag in terms of coping with my Alzheimer's diagnosis. While some members of my family are understanding and supportive, others seem to struggle with accepting and accommodating my condition. I am exploring other support networks and resources to supplement my existing social support system.

Patient Seeking Reassurance: My social support system has been a source of strength and comfort as I navigate through my Alzheimer's diagnosis. My loved ones have been compassionate, patient, and understanding, which has made a significant difference in my ability to cope with the challenges of my condition. I am grateful for their unwavering support and dedication to my well-being.

Question 7: In what ways have you found joy and fulfillment despite living with Alzheimer's?

Why Doctor Asked This Question: The doctor wants to encourage the patient to focus on the positive aspects of their life and to explore activities that bring them joy and fulfillment.

Patient Seeking Validation: Despite living with Alzheimer's, I have found joy and fulfillment in spending time with my grandchildren, taking walks in nature, and engaging in creative pursuits like painting and writing. These activities bring me a sense of purpose and connection to the present moment.

Patient Seeking Information: I am still exploring ways to find joy and fulfillment despite living with Alzheimer's. I have found solace in music, reading, and gardening, but I am open to discovering new activities and hobbies that can bring me happiness and a sense of purpose. It's an ongoing journey of self-discovery and exploration.

Patient Seeking Reassurance: Despite the challenges of living with Alzheimer's, I find joy and fulfillment in simple pleasures like spending time with loved ones, enjoying nature, and engaging in activities that bring me peace and contentment. These moments of joy help me stay positive and resilient in the face of adversity.

Discussion and Conclusions

Generative AI simulations offer a unique and innovative approach to medical education, particularly in the field of dementia care. These simulations provide instant feedback and guidance to students, allowing them to learn from their mistakes and improve their diagnostic skills in real time. Generative AI simulations capture the complexities of human thought and behavior. By interacting with virtual patients, students can gain insights into the emotional and psychological aspects of dementia, enhancing their ability to empathize and communicate effectively with patients and their families.

Generative AI simulations can understand and adapt to human thought processes, creating a more realistic and engaging learning experience. By incorporating AI-driven dialogue and behavior, students can interact with simulated patients in a way that closely resembles real-world interactions, enhancing their communication skills and empathy.

Personalized generative AI simulations cater to individual learning styles and preferences, allowing students to focus on specific aspects of dementia, such as memory loss or behavioral changes, and practice different diagnostic techniques and treatment plans accordingly. This flexibility allows students to tailor their learning experience to meet their unique needs and challenges, ultimately improving their competence and confidence in managing dementia patients.

Generative AI simulations have the potential to transform the way medical students learn about and interact with patients with dementia. They offer a realistic and immersive learning experience, allowing students to develop a deep understanding of the disease, enhance their diagnostic and communication skills, and ultimately improve the quality of care they provide to patients with dementia.

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