



Assessment of Artificial Intelligence Chatbots in Responding to Supraventricular Tachycardia Related Questions

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Abstract

Introduction: Supraventricular tachycardia (SVT) is the most prevalent arrhythmia among young adults. With the rapid advancement of artificial intelligence technologies, natural language processing models (NLPs) such as ChatGPT, Gemini, and Bing Chat are becoming increasingly widespread in the field of medicine. We aim to assess the precision and consistency of responses produced by ChatGPT-4o, Gemini, and Bing Chat to frequently asked questions regarding SVT.

Methods: A list of fifty commonly asked questions regarding SVT was inquired twice, with a one-week interval, to ChatGPT-4o, Gemini, and Bing Chat. Two cardiologists assessed the responses from each NLP without knowledge of each other's evaluations. The content was rated using the following scale: totally correct (1), incomplete (2), and incorrect (3).

Results: Most of the responses from all models were rated as either 'totally correct', 'incomplete', or 'incorrect'. Even though ChatGPT-4o did not generate any 'incorrect' answers, Bing Chat and Gemini produced some incorrect responses. Regarding the accuracy of responses, ChatGPT achieved a score of 92%, Gemini obtained 70%, and Bing Chat reached 58%. ChatGPT-4o also achieved the highest 'reproducibility' score at 90%, followed by Gemini at 86%, and Bing Chat at 72%.

Discussion and Conclusion: Our study highlighted that ChatGPT-4o is capable of generating valuable answers to patients' questions related to SVT. As NLPs—especially ChatGPT-4o—continue to improve, they hold great potential for the management of chronic conditions like SVT.

Keywords: Artificial intelligence; Bing Chat; ChatGPT; digital health; Gemini; natural language processing chatbots; supraventricular tachycardia.

Supraventricular tachycardia (SVT) is the most prevalent non-sinus tachyarrhythmia in young adults, with an incidence of approximately 3.5 per 1,000 person-years or 2.29 per 1,000 individuals^[1]. Clear communication is vital for assisting patients in understanding their conditions and ensuring accurate diagnosis, treatment, and follow-up care. Better patient awareness of SVT management has been associated with a decrease in symptoms^[2].

With the rapid advancement of artificial intelligence technologies, natural language processing models (NLPs) such as Chat Generative Pre-Trained Transformer (ChatGPT), Gemini, and Bing Chat are becoming increasingly widespread in the field of medicine^[3]. These models are being integrated into various healthcare applications, ranging from the analysis of patient records to clinical decision support systems, contributing significantly to

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critical processes such as diagnosis, treatment planning, and patient management. NLPs have the potential to process vast amounts of medical data, providing healthcare professionals with faster and more accurate information. In this context, the use of natural language processing techniques in medicine enhances the efficiency of healthcare services while also offering a significant opportunity to improve the quality of patient care. While this transition highlights the positive role AI can play in enhancing health literacy, it has also raised concerns about the potential for misuse and misinformation. The widespread utilization and growing dependence on AI applications by patients lead to important concerns about misinformation^[4,5].

Several studies have previously investigated ChatGPT's responses to common questions about heart failure, coronary artery disease, hypertension, hyperlipidemia, and atrial fibrillation^[6–10]. However, no comparative study has yet been conducted on chatbot responses specifically related to SVT. In our study, we seek to evaluate the precision and consistency of responses provided by ChatGPT-4o, Gemini, and Bing Chat regarding SVT.

Materials and Methods

Data Collection

In this study, we compiled a list of fifty frequently asked questions about SVT, sourced from the websites of the Mayo Clinic, Medline, Cleveland Clinic, and the National Health Service (NHS) UK. We compiled the most common questions asked by patients from independent and reliable sources, aiming to eliminate any potential bias that may arise from popular websites. In this way, we aimed to provide patients with accurate, scientific, and impartial information. These questions were categorized into five groups. Table 1 presents these questions related to basic content about the disease, diagnosis, treatment-procedure related risks/complications, follow-up, and lifestyle modification/dietary management recommendations.

Once the questions were finalized, they were entered into the online chat interface of three different NLPs: ChatGPT-4o (GPT-4, OpenAI, California, United States), Gemini (PaLM 2, Google, California, United States), and Bing Chat (Microsoft, Washington, United States). Each question was asked twice to ChatGPT-4o, Gemini, and Bing Chat on September 2, 2024, and again on September 9, 2024. All questions were asked in English within a separate new chat session.

Two cardiologists independently assessed the responses from each NLP, without knowledge of each other's evaluations. The responses were analyzed based on current

supraventricular tachycardia guidelines^[11]. The content was rated using the following scale: totally correct (1), incomplete (2), and incorrect (3). In cases where there were notable discrepancies between the two reviewers' assessments, a third reviewer was consulted to resolve inconsistencies.

Additionally, the responses were evaluated for consistency by classifying them as either reproducible or non-reproducible. If inconsistencies or variations were detected in the answers, the response was classified as non-reproducible, indicating a lack of reliability or stability.

The study strictly followed the ethical guidelines of the Declaration of Helsinki.

Statistical Analysis

Microsoft Excel (version 16.68; Microsoft Corporation, United States) was utilized for all statistical analyses. Data interpretation, which included proportions, was expressed in terms of frequencies and percentages.

Results

Most of the responses from all models were rated as either 'totally correct' or 'incomplete'. Even though ChatGPT-4o did not generate any 'incorrect' answers, Bing Chat and Gemini produced some incorrect responses.

For ChatGPT-4o, 46 out of the 50 answers (92%) were rated as 'totally correct', while 4 out of the 50 answers (8%) were deemed 'incomplete'. When evaluated by category, ChatGPT-4o achieved the highest performance in the areas of 'diagnosis', 'follow-up', and 'lifestyle modification/dietary management', delivering 'correct' responses at rates of 100%, 100%, and 100%, respectively. ChatGPT-4o also produced 'correct' answers for 91.7% of questions related to 'basic content about the disease' and 83.3% of those concerning 'treatment-procedure related risks/complications'. A summary of the evaluation of ChatGPT-4o's answers by category is presented in Table 2.

For Gemini, 35 out of 50 responses (70%) were assessed as 'totally correct', while 13 out of 50 responses (26%) were deemed 'incomplete', and 2 out of 50 responses (4%) were regarded as 'incorrect'. Gemini demonstrated the highest performance in the areas of 'lifestyle modification/dietary management', 'basic content about the disease', and 'diagnosis', providing correct responses in 83.3%, 75%, and 75% of cases, respectively. Additionally, Gemini produced 'correct' answers to 70% of 'follow-up' questions and 61.1% of 'treatment-procedure related risks/complications' questions. A summary of the evaluation of Gemini's answers by category is displayed in Table 3.

Table 1. Stratification of questions**Basic content about the disease:**

1. What is SVT (supraventricular tachycardia)?
2. What are the SVT (supraventricular tachycardia) types?
3. How common is SVT (supraventricular tachycardia)?
4. What are the symptoms of SVT (supraventricular tachycardia)?
5. What causes SVT (supraventricular tachycardia)?
6. Is SVT (supraventricular tachycardia) genetic?
7. What are the risk factors for SVT (supraventricular tachycardia)?
8. Can SVT (supraventricular tachycardia) be cured with lifestyle changes?
9. Can SVT impair heart function?
10. Who does SVT (supraventricular tachycardia) affect?
11. Can smart watches detect all SVTs?
12. Can SVT (supraventricular tachycardia) be reversed?

Diagnosis:

13. How is SVT (supraventricular tachycardia) diagnosed?
14. What tests will be done to diagnose SVT (supraventricular tachycardia)?
15. I have palpitation and they don't show up on the holter. What can I do?
16. What is implantable loop recorder?

Treatment- procedure related risks/complications:

17. How is SVT (supraventricular tachycardia) treated?
18. What medications are used to treat SVT (supraventricular tachycardia)?
19. How long does it take to recover from this treatment?
20. Are there complications or side effects to treatment for SVT (supraventricular tachycardia)?
21. How can I reduce my risk of experiencing symptoms from SVT (supraventricular tachycardia)?
22. I suffer from SVT which is the best: medical treatment or catheter ablation?
23. How do I take care of myself if I have SVT (supraventricular tachycardia)?
24. What is electrical cardioversion and how is done?
25. When to use electrical cardioversion in SVT (supraventricular tachycardia) patient?
26. What are the risks of cardioversion?
27. What is electrophysiology study (EPS) and how is it done?
28. When to electrophysiology study (EPS) use in SVT (supraventricular tachycardia) patient?
29. What is catheter ablation and how is done?
30. When to use catheter ablation SVT (supraventricular tachycardia) patient?
31. What are the risks of catheter ablation?
32. SVT (supraventricular tachycardia treatment): medical treatment or catheter ablation?
33. When to use implantable loop recorder SVT (supraventricular tachycardia) patient?
34. I suffer from SVT, which is better: cryoablation or radiofrequency ablation?

Follow-up:

35. What are the complications of SVT (supraventricular tachycardia)?
36. How long does it take to recover from SVT (supraventricular tachycardia) treatment?
37. What can I expect if I have SVT (supraventricular tachycardia)?
38. How do I take care of myself if I have SVT (supraventricular tachycardia)?
39. When should I see my healthcare provider? When to see a doctor/How long do I need to wait to see a cardiologist?
40. When should I go to the emergency room (ER)?
41. What questions should I ask my doctor about SVT (supraventricular tachycardia)?
42. I suffer from SVT, should I use anticoagulation?
43. What kind of exercises are better for a patient with a history of SVT (supraventricular tachycardia)?
44. I suffer from SVT how long should I continue antiarrhythmic treatment?

Lifestyle Modification/ Dietary Management:

45. I suffer from SVT (supraventricular tachycardia), Can I drink energy drink?
46. I suffer from SVT (supraventricular tachycardia). Should I avoid alcohol?
47. I suffer from SVT (supraventricular tachycardia). Should I avoid tobacco?
48. I suffer from SVT (supraventricular tachycardia). What should I eat?
49. I suffer from SVT (supraventricular tachycardia). What should I not eat?
50. I suffer from SVT (supraventricular tachycardia). Should I avoid coffee? Can I drink coffee and how much?

Table 2. Evaluation of ChatGPT 4o's answers on supraventricular tachycardia

	Totally correct		Incomplete	
	n	%	n	%
Basic content about the disease (n=12)	11	91.7	1	8.3
Diagnosis (n=4)	4	100	0	0
Treatment- procedure related risks/complications (n=18)	15	83.3	3	16.7
Follow-up (n=10)	10	100	0	0
Lifestyle modification/ dietary management (n=6)	6	100	0	0
Total (n=50)	46	92	4	8

For Bing Chat, 29 out of 50 responses (58%) were graded as 'totally correct', whereas 20 out of 50 responses (40%) were classified as 'incomplete', and 1 out of 50 responses (2%) as 'incorrect'. Bing Chat demonstrated the highest proficiency in the categories of 'follow-up', 'basic content about the disease', and 'lifestyle modification/dietary management', by delivering 'totally correct' responses in 80%, 66.6%, and 66.6% of questions, respectively. Furthermore, Bing Chat also produced 'totally correct' answers to 50% of 'diagnosis' questions and 38.9% of 'treatment-procedure related risks/complications' questions. A summary of the evaluation of Bing Chat's answers by category is displayed in Table 4.

Table 5 emphasizes the reproducibility of responses produced by ChatGPT-4o, Gemini, and Bing Chat to

Table 3. Evaluation of Gemini's answers on supraventricular tachycardia

	Totally correct		Incomplete		Incorrect	
	n	%	n	%	n	%
Basic content about the disease (n=12)	9	75	2	16.7	1	8.3
Diagnosis (n=4)	3	75	1	25	0	0
Treatment- procedure related risks/complications (n=18)	11	61.1	6	33.3	1	5.6
Follow-up(n=10)	7	70	3	30	0	0
Lifestyle modification/ dietary management (n=6)	5	83.3	1	16.7	0	0
Total (n=50)	35	70	13	26	2	4

Table 4. Evaluation of Bing Chat's answers on supraventricular tachycardia

	Totally correct		Incomplete		Incorrect	
	n	%	n	%	n	%
Basic content about the disease (n=12)	8	66.6	4	33.4	0	0
Diagnosis (n=4)	2	50	2	50	0	0
Treatment- procedure related risks/complications (n=18)	7	38.9	10	55.6	1	5.5
Follow-up (n=10)	8	80	2	20	0	0
Lifestyle modification/ dietary management (n=6)	4	66.6	2	33.4	0	0
Total (n=50)	29	58	20	40	1	2

Table 5. Comparative reproducibility of ChatGPT, Gemini, and bing responses to supraventricular tachycardia questions by subgroup

Question subgroup	Number of responses (%)					
	ChatGPT		Gemini		Bing	
	n	%	n	%	n	%
Basic content about the disease (n=12)	9	75	11	91.7	11	91.7
Diagnosis (n=4)	4	100	4	00	3	75
Treatment- procedure related risks/complications (n=18)	16	89	14	77.8	11	61.1
Follow-up (n=10)	10	100	8	80	6	60
Lifestyle modification/ dietary management (n=6)	6	100	6	100	6	100
Total (n=50)	45	90	43	86	37	74

Table 6. Analyzing Chatbots' answers and precision in responding to two example queries

Question: How do I take care of myself if I have SVT (supraventricular tachycardia)?	
ChatGPT's response	Totally correct
Taking care of yourself if you have supraventricular tachycardia (SVT) involves a combination of lifestyle adjustments, regular medical care, and self-awareness. Here are some detailed steps to help manage SVT:	
1. Follow Your Treatment Plan: - Medications: Take all prescribed medications exactly as directed by your healthcare provider. - Procedures: If you've undergone a procedure like catheter ablation, follow your post-procedure care instructions closely. 2. Lifestyle Changes: - Diet: Eat a heart-healthy diet rich in fruits, vegetables, whole grains, lean proteins, and healthy fats. Avoid excessive salt, sugar, and processed foods. - Exercise: Engage in regular physical activity. Choose moderate exercises such as walking, swimming, or yoga. Consult your healthcare provider before starting any new exercise regimen. - Hydration: Drink plenty of water throughout the day to stay hydrated. 3. Avoid Triggers: - Caffeine and Alcohol: Limit or avoid beverages that contain caffeine or alcohol. - Smoking: Quit smoking and avoid exposure to secondhand smoke. - Stress: Practice stress management techniques such as deep breathing exercises, meditation, or mindfulness. 4. Regular Monitoring: - Track Symptoms: Keep a diary of your symptoms, noting their frequency, duration, and any potential triggers. - Medical Appointments: Attend regular follow-up appointments with your cardiologist or healthcare provider to monitor your condition. 5. Learn Vagal Maneuvers: - Techniques like the Valsalva maneuver, coughing, or cold-water face immersion can sometimes stop an SVT episode. Learn and practice these under the guidance of your healthcare provider. 6. Weight Management: - Maintain a healthy weight through a balanced diet and regular exercise. 7. Avoid Stimulants: - Avoid over-the-counter medications containing stimulants, such as certain decongestants. - Avoid recreational drugs that can trigger SVT. 8. Sleep Hygiene: - Ensure you get adequate and restful sleep. Maintain a regular sleep schedule. 9. Manage Other Health Conditions: - Keep conditions like hypertension, diabetes, and thyroid disorders under control with appropriate treatment and lifestyle modifications. 10. Emergency Plan: - Know when to seek emergency medical attention. If you experience severe symptoms such as chest pain, fainting, or difficulty breathing, contact emergency services immediately. 11. Stay Informed: - Educate yourself about SVT and stay updated on new treatments and management strategies. By incorporating these practices into your daily routine, you can effectively manage SVT and maintain a good quality of life. Always consult your healthcare provider before making significant changes to your lifestyle or treatment plan.	
Gemini's response	Totally correct
Taking care of yourself when you have SVT involves a combination of lifestyle changes, medication adherence, and understanding your condition.	
Lifestyle modifications:	
• Manage stress: Practice relaxation techniques like meditation, deep breathing, or yoga. • Regular exercise: Aim for moderate-intensity workouts most days of the week, but avoid overexertion. • Healthy diet: Focus on fruits, vegetables, and whole grains. • Limit stimulants: Reduce or avoid caffeine, nicotine, and alcohol as they can trigger SVT episodes. • Adequate sleep: Ensure you get enough restful sleep.	

Table 6. Cont.

Understanding and managing your condition:

- **Learn about SVT:** Understand your specific type of SVT and its triggers.
- **Communicate with your doctor:** Keep your doctor informed about any changes in your symptoms or condition.
- **Carry identification:** Consider wearing a medical alert bracelet or necklace.
- **Identify triggers:** Keep a journal to track your activities, diet, and symptoms to identify potential triggers.
- **Avoid triggers:** Once you identify triggers, try to minimize exposure to them.

Medication adherence:

- **Take medications as prescribed:** Follow your doctor's instructions for any prescribed medication.
- **Regular check-ups:** Schedule regular appointments with your healthcare provider.

Emergency preparedness:

- **Learn vagal maneuvers:** Practice techniques like the Valsalva maneuver (bearing down as if having a bowel movement) or splashing cold water on your face to potentially stop an episode.
- **Know when to seek medical attention:** Understand the signs of a serious SVT episode and when to call for emergency help.

Remember: Everyone's experience with SVT is different. What works for one person might not work for another. It's essential to work closely with your doctor to develop a personalized management plan.

Bing Chat's response**Totally correct**

If you've been diagnosed with **supraventricular tachycardia (SVT)**, here are some self-care tips to manage your condition:

1. **Avoid triggers:** Identify and avoid factors that can trigger SVT episodes. Common triggers include stress, caffeine, alcohol, and certain medications.
2. **Stay hydrated:** Dehydration can worsen SVT. Drink plenty of water throughout the day.
3. **Manage stress:** Practice relaxation techniques such as deep breathing, meditation, or yoga to reduce stress and anxiety.
4. **Quit smoking:** Smoking can exacerbate heart conditions. If you smoke, consider quitting.
5. **Follow your doctor's advice:** Take medications as prescribed and attend regular follow-up appointments.
6. **Learn vagal maneuvers:** These maneuvers can help slow down your heart rate during an SVT episode. Examples include the Valsalva maneuver (bearing down as if having a bowel movement) or splashing cold water on your face.
7. **Know when to seek help:** If you experience severe symptoms (such as chest pain, shortness of breath, or fainting), seek immediate medical attention.

Remember, always consult with your healthcare provider for personalized advice and to create a tailored management plan.

Question: What are the risks of catheter ablation?**ChatGPT's response****Incomplete**

1. **Vascular Damage:**
 - Damage to blood vessels during catheter insertion or removal.
2. **Heart Damage:**
 - Injury to the heart muscle, heart valves, or the heart's electrical system, possibly requiring a pacemaker.
3. **Cardiac Tamponade:**
 - Fluid accumulation around the heart, which can affect its function and requires immediate treatment.
4. **Stroke or Heart Attack:**
 - Blood clots can form, leading to a stroke or heart attack.
5. **Pulmonary Vein Stenosis:**
 - Narrowing of the veins that return blood from the lungs to the heart.
6. **Infection:**
 - Infection at the catheter insertion site or within the heart.
7. **Bleeding:**
 - Significant bleeding, especially if on blood thinners.
8. **Death:**
 - Very rare but serious complications can lead to death.

Please consult with your healthcare provider for detailed information and to address any concerns you may have. They can provide more personalized information based on your medical history and condition.

Table 6. Cont.

Gemini's response	Incomplete
Unfortunately, there is currently no cure for coronary artery disease (CAD) that completely reverses the existing plaque buildup in the arteries. Once plaque accumulates and hardens on the artery walls, it cannot be fully removed [Mayo Clinic, National Institutes of Health (.gov)]. However, this doesn't mean there's no hope! Here's the good news: • Management and improvement: Even though complete reversal isn't possible; CAD can be effectively managed and its progression slowed significantly. Through lifestyle changes, medications, and sometimes procedures, you can improve blood flow to the heart, prevent complications like heart attacks, and live a long and healthy life. • Lifestyle changes: Maintaining a heart-healthy diet, regular exercise, weight management, and stress management can significantly improve your heart health and slow the progression of CAD. • Medications: Medications like statins can help lower cholesterol levels and reduce the risk of further plaque buildup. • Procedures: In some cases, procedures like angioplasty and stenting can open blocked arteries and improve blood flow. Here are some studies showing progress in managing CAD: • High-dose statins: A 2006 study called ASTEROID found that high-dose statins might be able to reverse some plaque buildup in arteries, though it highlights the need for very low LDL cholesterol levels [WebMD]. • Research on plaque reversal: There's ongoing research into new methods to potentially reverse plaque buildup, but these are still under investigation [MedicalNewsToday]. If you have CAD, the focus should be on managing the condition to prevent complications and improve your heart health. Talk to your doctor about the best course of treatment for your individual situation.	
Bing Chat's response	Incomplete
Catheter ablation is a safe and effective treatment for various heart arrhythmias, including atrial fibrillation (AFib) and supraventricular tachycardia (SVT). However, like any medical procedure, it does carry some risks. Here are the potential complications: Bleeding and Bruising: Occur at the catheter insertion site. Infection: Although rare, there's a risk of infection where the catheter was placed. Blood Clots: Rarely, blood clots can form and potentially travel to the lungs or brain, causing a stroke. Damage to Blood Vessels: The catheter may inadvertently damage blood vessels during the procedure. Remember that these risks are infrequent, and your healthcare provider will carefully assess the benefits versus potential complications before recommending catheter ablation.	

inquiries. ChatGPT-4o achieved the highest 'reproducible' score at 90%, followed by Gemini at 86%, and Bing at 74%. The NLPs' answers and accuracy for two example questions are demonstrated in Table 6.

Discussion

In this study, we assessed the dependability, usefulness, and potential misapplication of information produced by ChatGPT-4o, Gemini, and Bing Chat in response to patient inquiries about SVT. ChatGPT-4o has the potential to provide important answers to frequently asked patient questions about SVT compared to Gemini and Bing Chat. Recent technological advancements have enabled the development of state-of-the-art AI systems, such as ChatGPT-4o, Bing Chat, and Gemini. Natural language processing models are proficient in executing a variety of linguistic tasks and generating responses that mimic human-like communication. Significant advancements in NLPs have enabled them to produce answers to numerous healthcare-related inquiries. The growing trust and dependence on these models by patients could contribute

to the widespread propagation of misinformation and detrimental guidance^[5]. ChatGPT-4o, among these NLPs, is extensively utilized and has been innovatively developed with a vast amount of information covering numerous topics. ChatGPT-4.0 was initially developed by OpenAI in 2018 and, through successive advancements, evolved over time, ultimately resulting in the launch of ChatGPT-4o in March 2023^[12]. Improvements in each new version of these models have expanded access to a more extensive dataset. While the adoption of NLPs by patients and healthcare professionals continues to grow, the likelihood of disseminating erroneous information must always be carefully appraised. This study emphasizes that ChatGPT-4o generated sufficient and precise responses to inquiries concerning fundamental aspects of the disease, diagnosis, treatment-related risks and complications, follow-up care, and lifestyle modifications, including dietary management of SVT. With ChatGPT-4o achieving the highest rate of 'totally correct' responses at 92%, followed by Gemini at 70% and Bing Chat at 58%, this suggests a greater degree of success in delivering precise

and thorough responses. While ChatGPT-4o delivered the most accurate and reproducible responses, Bing Chat exhibited the lowest performance in both categories. In terms of reproducibility, ChatGPT-4o attained the highest score at 90%, followed by Gemini at 86% and Bing Chat at 74%. Our findings suggest that ChatGPT-4o demonstrates competence in delivering precise and reliable responses to commonly asked questions about SVT. Furthermore, ChatGPT-4o has the potential to enhance patient education and facilitate improved communication between patients and healthcare professionals.

Natural language processing models such as ChatGPT, Gemini, and Bing Chat can assist in addressing questions that patients may hesitate to ask or require prompt answers to regarding their condition. The implementation of these technologies within healthcare services can substantially mitigate the workload of healthcare professionals and enhance overall time efficiency. Even though NLPs continue to evolve, a significant concern remains that excessive dependence on these tools by patients, without verifying the validity and consistency of their responses, may contribute to the dissemination of inaccurate medical information^[2–4]. It is crucial to demonstrate the precision and dependability of NLPs through more extensive research. Determining the trustworthiness of the responses generated by chatbot applications could assist in addressing this issue. Further research is necessary to substantiate the reliability and precision of these models.

In our study, we evaluated the trustworthiness and usefulness of responses to SVT-related inquiries produced by NLPs, including ChatGPT, Gemini, and Bing Chat. To the best of our knowledge, our study represents the first comprehensive investigation into the reliability, value, and potential risks associated with responses generated by NLPs to commonly asked questions concerning SVT.

Nevertheless, several limitations of this study should also be noted. Firstly, the reviewers are employed within the same facility, which may lead to common proficiency and viewpoints, potentially restricting the range of methodologies. While multiple reviewers were engaged in the study's assessment system, bias could still emerge due to the individual perspectives involved in the evaluation process. Although the questions included in our study were taken from the websites of esteemed organizations, they may not fully capture the concerns of all patients. In addition, in our study, the interpretation of the responses provided by NLPs was conducted from the perspective of physicians, which may have constrained the applicability of the evaluation from a patient's viewpoint.

In the future, multicenter studies that incorporate patient participation could facilitate the assessment of the utility and trustworthiness of information delivered by NLPs.

Conclusion

Consequently, our study highlighted that NLPs are capable of generating valuable answers to patient questions related to SVT. While ChatGPT-4o is a powerful tool, responses about SVT should be interpreted with caution due to the possibility of encountering misinformation. As NLPs—especially ChatGPT-4o—continue to improve, they hold great potential for the management of chronic conditions like SVT.

For patients, these models could assist with symptom tracking, medication reminders, or answering questions about their condition. For healthcare professionals, they could support the analysis of patient data, identification of trends, and even provide real-time decision support. The precision and reliability of information generated by NLPs are paramount in healthcare, and patients must be able to trust the accuracy of the information they receive.

In the future, as NLPs undergo further investigation and refinement, these models may offer substantial benefits for both patients and healthcare professionals in the management of chronic conditions such as SVT.

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