THE BOT WILL SEE YOU NOW: USE OF CHATBOTS IN MENTAL HEALTH

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BACKGROUND

- Over 1 billion people are affected by mental health disorders, contributing to a global economic burden of $5 trillion USD (Arias et al., 2022; Wu et al., 2023)
- 75% of U.S. counties face shortages of mental health workers, with 96% lacking prescribers (American Psychiatric Nurses Association, 2019).
- AI chatbots replicate human-like interactions, offering potential for delivering structured therapies like Cognitive Behavioral Therapy (CBT) (Ströhle et al., 2018)
- AI chatbots offer transformative potential to address mental health care gaps, particularly in the context of nursing shortages.

METHOD

PubMed and Google Scholar were searched to address the PICO question: In adults aged 18–65 with mild to moderate anxiety or depression, do AI-based chatbots, compared to other support methods, improve symptoms?

PubMed searches ("mental health" + "chatbot": 18; "anxiety" + "chatbot": 19, 9 duplicates) for RCTs (2018–2025) yielded 27 studies. Abstract review excluded 21 with anxiety/depression as secondary outcomes, leaving 6 RCTs. Google Scholar search ("chatbot" + "anxiety" + "randomized controlled trial," 2018–2025, English) yielded 14,000 results. First 100 reviewed, excluding 48 duplicates, 28 non-RCTs, and 18 with secondary outcomes, leaving 17 studies. Eight high-quality RCTs selected from combined searches.

SUMMARY OF EVIDENCE

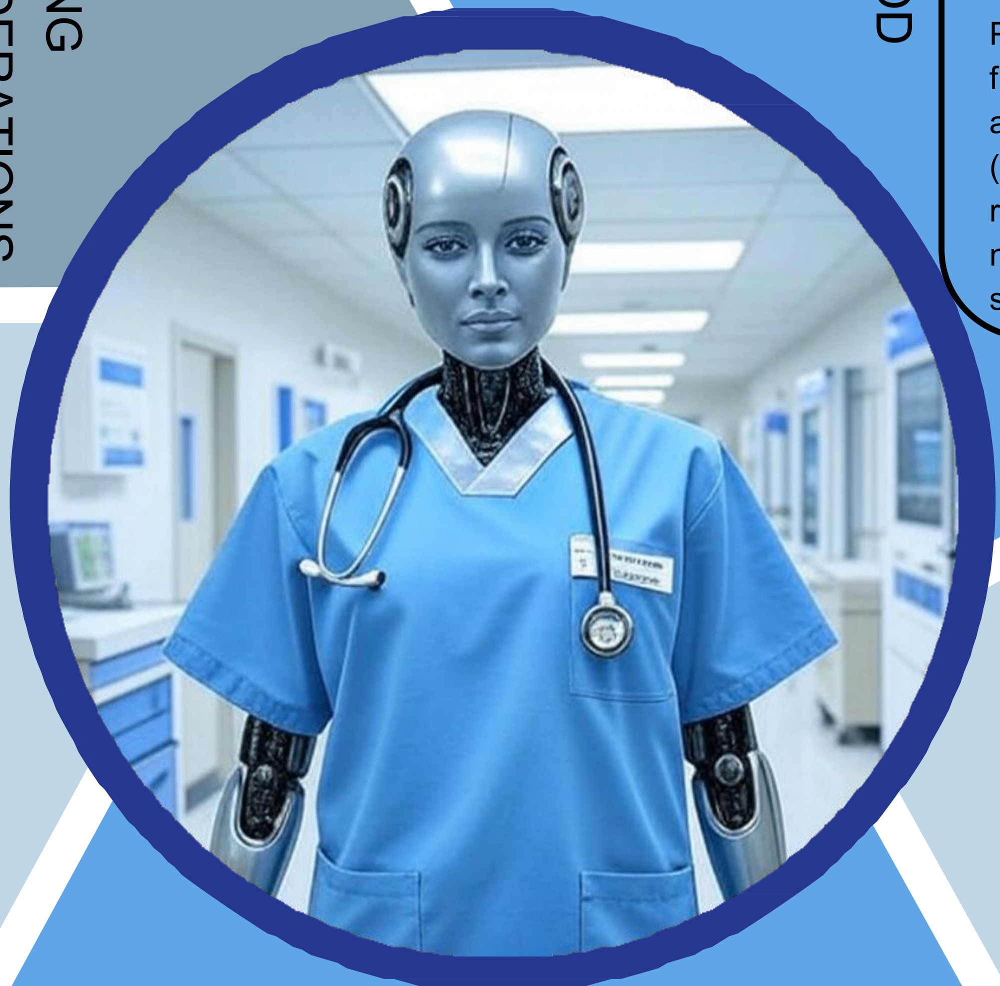
- Yahagi et al. (2024): ChatGPT-3.5 reduced preoperative anxiety in general anesthesia patients via significant group-time interaction. Mixed satisfaction and response inaccuracies (4/59 inquiries) highlight needs for algorithm refinement.
- Chen et al. (2025): Locally developed AI chatbot matched nurse hotline in reducing anxiety (GAD-7) and depression (PHQ-9), with comparable patient satisfaction.
- Spytska (2025): Friend chatbot reduced anxiety (30–35%) in Ukrainian war zone women, less than traditional therapy (45–50%). Scalable but less effective, suggesting hybrid models.
- Gutu et al. (2021): Woebot (CBT-based) matched psychoeducational emails in reducing anxiety and depression (DASS), showing no superior benefit.
- Daneli et al. (2022): TEO (AI healthcare agent) with CBT improved stress, depression, and well-being in aging workers, with highest satisfaction in combined group.
- Liu et al. (2022): XiaoNan (CBT chatbot) outperformed self-help literature in reducing depression (PHQ-9) and anxiety (GAD-7), with stronger therapeutic bonds.
- He et al. (2023): Tailored CBT chatbot reduced depression in Chinese students more than general chatbot or e-book, with high engagement.
- Karkosz et al. (2024): Fido (Polish CBT chatbot) matched bibliotherapy in reducing anxiety (STAI) and depression (CESD-R), with less engagement time (79.44 vs. 117.57 minutes) and notable loneliness reduction.

CONCLUSIONS

- AI chatbots significantly reduce mental health symptoms, outperforming static informational controls and similar to interactive controls.
- Chatbots show equivalent or slightly lower efficacy compared to nurse-mediated or psychotherapy interventions, while still achieving symptom reduction.
- Findings suggest caution but affirm chatbots' potential for delivering Cognitive Behavioral Therapy

NURSING CONSIDERATIONS

- Artificial Intelligence (AI) is rapidly transforming healthcare, with significant implications for nursing practice (Wei et al., 2025).
- Nurses will be forced to confront the use of AI, both facilitating its introduction into practice, and deciding where to "hold the line" against its use.
- Nurses will feel the impact of the rising use of these applications; understanding their strengths and limitations is of paramount importance.



[Patricia Zack]. (2025). Edited Robotic Nurse Image [Digital Image]. Created and modified using Grok 3 by xAI, May 01, 2025.

CNL CONSIDERATIONS

- AI is an unavoidable advancement in nursing, with Clinical Nurse Leaders (CNLs) pivotal in guiding its ethical and effective integration
- Redesign workflows to incorporate chatbots for triage, follow-up care, and patient education, reducing nurse workload and burnout (Hoelscher et al., 2024).
- Mitigate risks like chatbot inaccuracies (Yahagi et al., 2024) and ensure safeguards for crises (e.g., suicide risk), collaborating with developers to refine AI for medical use (Coghlan et al., 2023).
- Develop training programs to familiarize nurses with chatbots, addressing concerns about dehumanization and fostering enthusiasm for automating routine tasks
- Lead RCTs to validate chatbot efficacy and integration into nursing workflows

> "The rise of powerful AI will be either the best, or the worst thing, ever to happen to humanity. We do not yet know which.
>
> *- Steven Hawking*

References

University of Maryland School of Nursing