

Using GenAI to Train Mental Health Professionals in Suicide Risk Assessment: Preliminary Findings

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Abstract

Background: Suicide risk assessment is a critical skill for mental health professionals (MHPs), yet traditional training in this area is often limited. This study examined the potential of generative artificial intelligence (GenAI)-based simulator to enhance self-efficacy in suicide risk assessment among MHPs.

Methods: A quasiexperimental mixed-methods study was conducted. Participants interacted with an AI-based simulator (AIBS) that embodied the role of a patient seeking suicide risk assessment. Each participant conducted a real-time risk assessment interview with the virtual patient and received comprehensive feedback on their assessment approach and performance. Quantitative data were collected through pre- and postintervention questionnaires measuring suicide risk assessment self-

efficacy and willingness to treat suicidal patients (using 11-point Likert scales). Qualitative data were gathered through open-ended questions analyzing participants' experiences, perceived benefits, and concerns regarding the AI simulator.

Results: Among the 43 participating MHPs, we found a significant increase in self-efficacy scores from preintervention (mean = 6.0, SD = 2.4) to postintervention (mean = 6.4, SD = 2.1, $P < .05$). Willingness to treat patients presenting suicide risk increased slightly from (mean = 4.76, SD = 2.64) to (mean = 5.00, SD = 2.50) but did not reach significance. Participants reported positive experiences with the simulator, with high likelihood to recommend to colleagues (mean = 7.63, SD = 2.27). Qualitative feedback indicated that participants found the simulator engaging and valuable for professional development. However,

participants raised concerns about overreliance on AI and the need for human supervision during training.

Conclusion: This preliminary study suggests that AIBSs show promise for improving MHPs' self-efficacy in suicide risk assessment. However, further research with larger samples and control groups is needed to confirm these findings and address ethical considerations surrounding AI use in suicide risk assessment training. AI-powered simulation tools may have potential to increase access to training in mental health, potentially contributing to global suicide prevention efforts. However, their implementation should be carefully considered to ensure they complement rather than replace human expertise.

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Suicide prevention is one of the most pressing and complex issues in the field of mental health. Its critical importance is emphasized as suicide poses a serious public health concern, with annual global figures indicating approximately 817,000 individuals dying by suicide and 20 million attempted suicides.¹ These staggering figures underscore the urgent necessity for comprehensive investment in a broad array of suicide prevention strategies aimed at curtailing local and global suicide prevalence. Thus, training professionals and gatekeepers to evaluate, react, and perform early interventions become crucial, among other important targets. Critical actions in this context include suicide

risk assessment, which is recognized as a critical step toward suicide prevention.² This study aimed to examine the ability of an artificial intelligence (AI)-based simulator (AIBS) to enhance competence in suicide risk assessment among mental health professionals (MHPs).

Suicide risk assessment is a process in which MHPs seek to assess the likelihood of a patient engaging in future suicidal behavior.³ Currently, this assessment primarily includes administering the Columbia-Suicide Severity Rating Scale (C-SSRS),⁴ which poses direct questions about the frequency, intensity, and content of suicidal thoughts, detailed questions about plans for future suicidal acts or descriptions of previous suicide

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Clinical Points

- Despite the critical importance of suicide risk assessment, mental health professionals often lack adequate training opportunities and practical experience due to limited access to expert supervision and real-time feedback. Current training methods rarely provide opportunities for repeated practice in a safe, controlled environment.
- Artificial intelligence (AI)-based simulation tools offer a promising solution for enhancing clinicians' self-efficacy in suicide risk assessment. These tools provide accessible, on-demand training opportunities where professionals can practice assessment skills with immediate feedback, potentially leading to increased confidence and competence in managing suicidal patients.
- For optimal implementation in clinical training, AI simulators should be used as a complement to traditional supervision, not a replacement. The technology demonstrates particular value for skill maintenance and confidence building between formal training sessions, offering a safe environment for practitioners to refine their assessment techniques.

attempts, and specific questions about the desire to die or continue living.⁴ Suicide risk assessment also includes the assessment of risk and protective factors relating to depressive symptoms and recent mental crises.⁵

Despite the recent positive global trend of making knowledge about suicide risk assessment more accessible in the community, such programs remain limited. Traditional suicide risk assessment training faces several critical limitations: restricted access to expert supervisors, time-bound training periods without ongoing support, and limited practical experience during graduate studies. There is a dearth of experts to deliver appropriate training, and existing programs are often taught at a theoretical level without allowing intensive training with patients and frequent professional feedback. At best, MHPs usually watch a video demonstrating how to conduct an assessment but do not perform multiple assessments with diverse types of patients with various risk factors, communication styles, psychopathologies, and other difficulties. These shortcomings reflect a significant training gap for one of the most challenging clinical tasks in mental health, a task that is already considered very difficult to predict,⁶ partly due to the impulsive nature of suicidal behavior and the large variability among patients.⁷

Importantly, in several studies, MHPs were found to be highly reluctant to treat suicidal individuals,⁸ partly due to their perception of low knowledge and competence regarding suicide risk assessment.⁹ Improving the knowledge and competence of MPHs in performing real-time suicide risk assessments would be a crucial step toward accurately identifying those at risk and providing the appropriate psychological help. Thus, improving these skills would require systematic training

in controlled conditions for real-time risk assessment. The AI simulator addresses these challenges by providing an accessible, on-demand platform for continuous skill development and practice, potentially democratizing access to high-quality training opportunities.

However, how competence can be enhanced among MHPs remains an open question. Following this, in this study, we aimed to shed light on the prospect of employing an AIBS to enhance MHPs' competence in suicide risk assessment.

AI-Based Technology in Mental Health

Generative AI (GenAI) is an advanced technology that creates human-like content through large language models (LLMs), which are trained on vast datasets of human-written text including books, academic papers, and online content. Unlike traditional machine learning that focuses on classification or prediction, GenAI can generate new content, engage in dialogue, and simulate human interactions. Through careful alignment and training processes, these models aim to provide helpful, accurate, and ethically aligned responses. This technology entered widespread public use by late 2022,¹⁰ and since then, numerous studies have demonstrated its significant potential in various domains, including education, medicine, law, art, programming, and psychology.^{11–14}

LLMs are a cornerstone technology within the broader GenAI field, designed to understand, generate, and manipulate human-like texts based on vast amounts of training data. Recent research has shown that LLMs can accurately identify emotions and mental disorders and provide treatment recommendations and prognoses comparable to MHPs.^{15–27} Despite their potential to democratize clinical knowledge,^{21,28,29} ethical concerns persist. These include data privacy, algorithmic opacity, threats to patient autonomy, risks of anthropomorphism, technology access disparities, corporate concentration, reduced reliance on professionals, and amplification of biases.^{12,18,21,28,29,30} One promising domain in which GenAI has the potential to make a significant contribution to mental health is a global endeavor to prevent suicide.^{22,24,31–35}

GenAI and Suicide Prevention

Recent research has demonstrated GenAI's potential in suicide prevention and mental health support. Studies have shown that GenAI, such as ChatGPT-4, can assess suicide risk with accuracy comparable to MHPs²⁴ and adapt its assessments to different cultural contexts.³⁵ GenAI has also proved proficient in using the World Health Organization's guidelines to evaluate media reports on suicide.²² Beyond risk assessment, recent studies have highlighted the significant potential of GenAI in facilitating role-playing scenarios for educational and therapeutic purposes, which may enhance professional training through consistent,

realistic client interactions in controlled environments. These simulations may provide valuable opportunities for repeated practice with immediate feedback, potentially addressing the limitations of traditional training methods, particularly in sensitive clinical scenarios.^{36–38} The controlled nature of these interactions may enable professionals to develop and refine their skills while maintaining high ethical standards and patient safety.^{36–38} Combining GenAI capabilities in suicide risk assessment with its application in role-playing scenarios offers new possibilities for mental health care and professional training. This integration may enable immediate and wide-scale access to clinical knowledge about suicide, be adaptable to various users and situations, and create interactive learning experiences.

The Current Study

This study aimed to make significant practical and empirical contributions to the field of suicide prevention by harnessing the capabilities of GenAI to develop an innovative simulation tool for training MHPs. By addressing critical gaps in current training programs, such as the lack of opportunities for intensive practice and personalized feedback, this study aimed to democratize access to essential clinical knowledge and skills, ultimately contributing to global suicide prevention efforts. Specifically, we have developed an AI-powered simulator for suicide risk assessment training. The simulator plays the role of an individual coming in for assessment, allowing MHPs to conduct mock interviews, evaluate suicide risk levels, and receive feedback on their performance.

We posited 2 primary research questions: (1) To what extent can the use of an AIBS improve the self-efficacy and willingness of MHPs to handle suicide-related situations? (2) How can the design and feedback delivery within an AIBS tool be optimized to enhance learning outcomes and user experience?

METHOD

Participants and Study Design

Participants. The study included 43 MHPs with diverse backgrounds and experience levels. The participants' ages ranged from 26 to 72 years (mean \pm SD = 45.44 \pm 10.43 years). Regarding gender distribution, which was assessed through self-report with options for male, female, nonbinary, and prefer not to say, 35 participants (81.4%) identified as female and 8 (18.6%) as male, with no participants selecting nonbinary options or declining to respond. The professional composition of the sample comprised psychologists (n = 27, 62.8%), social workers (n = 9, 20.9%), psychiatrists (n = 1, 2.3%), and other MHPs (n = 6, 14.0%). Within these professional categories, participants' status varied across experts (n = 18, 41.9%), supervisors (n = 12, 27.9%), interns (n = 9, 20.9%),

practicum students (n = 2, 4.7%), and professionals with relevant experience (n = 2, 4.7%). The participants had a wide range of professional experience in mental health (mean \pm SD = 13.81 \pm 10.06 years). A substantial majority (n = 41, 95.3%) reported having conducted suicide risk assessments in the past, and all participants (n = 43, 100%) indicated clinical experience with patients presenting suicidal ideation, planning, or attempts. Regarding prior training in suicide prevention, more than two-thirds of participants (n = 29, 67.4%) had completed formal training exceeding 10 hours.

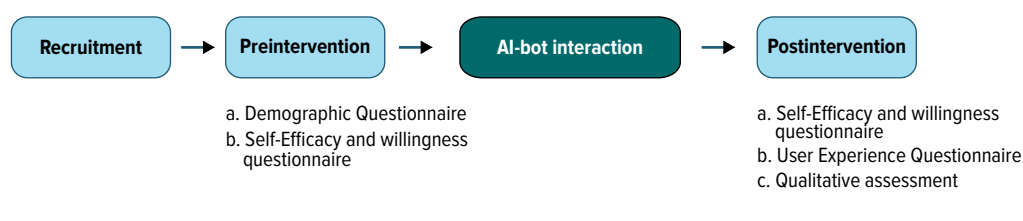
Study design. This study integrated quantitative and qualitative approaches to evaluate the efficacy of using a GenAI-powered chatbot for suicide risk assessment training. As seen in Figure 1, the study design included pre- and postintervention measurements.

Intervention. The AI-powered Suicide Risk Assessment bot is an innovative tool designed to enhance the training of MHPs in assessing suicide risk. Interaction with the bot comprises 3 key stages. First, the user was introduced to the objective and structure of the simulation; the introduction provided a clear framework for the interactive learning experience. Second, the user was invited to engage in conversation (in chat interface) with 1 out of 2 unique characters, each of whom presented a distinct scenario (man or woman, a unique case story, communication style, and risk factor profile). Finally, the bot presented detailed, constructive written feedback on the central aspects of the risk assessment procedure. This feedback helps users identify areas to improve and refine their skills.

During the simulation, participants were required to conduct a comprehensive suicide risk assessment with the AI-based virtual patient. The assessment performance was evaluated across 2 primary domains: clinical content and therapeutic process. The clinical content evaluation examined participants' systematic exploration of suicide risk and protective factors, while the therapeutic process evaluation focused on their ability to establish rapport, demonstrate empathy, and maintain appropriate therapeutic communication throughout the assessment.

The feedback provided in this simulation covers several critical aspects of suicide risk assessment. It evaluates the interviewer's ability to establish rapport and trust, explores risk factors across various domains (demographic, psychological, interpersonal, and situational), identifies protective factors, and assesses the level of distress and psychopathology. The feedback also evaluates the thoroughness of suicidal thought exploration, including the nature, frequency, intensity, and duration of such thoughts, as well as any specific plans or preparatory behaviors for suicide. Additionally, the feedback offers an assessment of the interviewer's skill in reflecting on the risk level while engaging the patient in hope and reasons for living. This comprehensive approach aligns with established suicide risk assessment protocols, such as the C-SSRS³⁹ that

Figure 1.
The Study Flow From Pre- to Postintervention



provides a structured method for evaluating and improving clinical interviewing skills in high-stake mental health scenarios.

The simulator uses GPT-4o (OpenAI), selected for its optimal balance of Hebrew language capabilities and response speed necessary for real-time clinical interactions. The AI's training approach included several key components: (1) detailed role definitions and character descriptions with specific communication styles, (2) few-shot prompting with validated examples, (3) structured feedback rubrics for assessment criteria, (4) comprehensive safety protocols, and (5) extensive validation testing by the research team to ensure consistent, clinically appropriate responses. This systematic approach helped minimize potential biases and maintain appropriate therapeutic boundaries throughout the interactions.

The technical implementation was facilitated through the PMFM platform (<https://pmfm.ai/>), a system designed for deploying AI-based conversational agents. The platform enables end-user interaction with language models through a prompt-based interface, with users accessing the simulation via secure web links. The system's automated API integration managed communication between the user interface and the selected LLM.

Measures

Preintervention questionnaire. Participants completed a brief questionnaire assessing age, gender, profession, years of experience, and prior experience with suicide risk assessment. The questionnaire included 4 items on an 11-point Likert scale (0–10) based on Levi-Belz et al,⁸ who previously validated these items in their study of therapists' attitudes toward treating suicidal patients:

- Self-efficacy: “How capable do you feel in conducting a suicide risk assessment?” and “How equipped do you feel with the tools to conduct a suicide risk assessment?” These items were averaged to create a composite “suicide risk assessment self-efficacy” variable ($\alpha = .97$).
- Willingness to Treat: “How willing are you to take patients with suicidal risk for assessment?” and

“How willing are you to accept a patient with active suicidality?” These items were averaged to create a composite “Willingness to Treat” variable ($\alpha = .89$).

Postsimulation questionnaire. This questionnaire assessed participants' experiences and attitudes postintervention, including 4 items identical to the preintervention questionnaire to compare self-efficacy ($\alpha = .86$) and willingness to treat ($\alpha = .90$). Additional items assessed the simulator experience: “Did the simulator help in conducting future suicide risk assessments?” “Did you learn from the experience?” “Will the feedback help in future assessments?” and “Would you recommend this AIBS to other practitioners?”

Four open-ended questions were included for deeper insights: “How was your learning experience?” “What improvements do you suggest?” “What advantages do you see in this training?” and “What risks or concerns do you have?”

Procedure

The study was conducted during a live webinar initiated by the authors, in which the participants were invited to participate in the experiment voluntarily. All questionnaires were administered through Google Forms. During the webinar, participants received links via Zoom chat to the questionnaires and the AIBS. They chose to interact with either a male or female bot for 15–25 minutes from their home computers. After the interaction, they completed a postintervention questionnaire. Participants were instructed to use a computer, not a mobile device.

This study was approved by the University Ethics Committee (Approval Number: 2024-67 YVC-EMEK). Participants were fully informed of the study's aims, procedures, and the right to withdraw at any stage without any repercussions. The simulator is powered by GPT-4o (OpenAI LTD), an advanced GenAI that demonstrates sophisticated and multimodal capabilities in “understanding” and generating text, recognizing, and offering improved speed for enhanced user experience. Access to this simulation system is facilitated through API technology, enabling seamless integration with external platforms (PMFM)—which specializes in

making GenAI-powered chatbots accessible to the public.

Data Analysis

Descriptive statistics were used to describe the participants' demographic baseline data, followed by a series of paired *t* tests to compare the MHPs' responses before and after the intervention on the study measures. Pearson correlations were calculated to examine the relationships between the demographic and professional characteristics and the dependent variables. The criterion for determining statistical significance throughout the study was set at $P < .05$. Statistical analyses were conducted using 1-tailed tests based on our directional hypothesis and previous research showing that training interventions consistently lead to improvement or no change in self-efficacy scores. Qualitative data were analyzed using basic content analysis (Bengtsson⁴¹), identifying recurring themes from participants' responses.

RESULTS

A full demonstration of one conversation and the AI feedback is presented in Tables 1 and 2, respectively. Table 1 displays the dialogue between the participant and the AI bot, while Table 2 presents the feedback provided by the AI on the interaction.

Impact of the Intervention on Suicide Risk Assessment Self-Efficacy

A paired-sample *t* test was conducted to evaluate the impact of the intervention on participants' self-efficacy in conducting suicide risk assessments. As shown in Figure 2, self-efficacy scores on the 11-point scale increased significantly from preintervention (mean = 6.0, SD = 2.4) to postintervention (mean = 6.4, SD = 2.1), $t_{42} = -1.96$, $P = .027$ (1-tailed). This finding indicates that the participants believed they were more capable of conducting suicide risk assessments following the intervention. While this improvement was moderate in magnitude, it is noteworthy that it occurred after just a single practice session.

Impact of the Intervention on Willingness to Treat

A paired-sample *t* test was conducted to evaluate the impact of the intervention on participants' willingness to treat patients at risk for suicide. Willingness-to-treat scores increased slightly from preintervention (4.76 ± 2.64) to postintervention (5.00 ± 2.50), but the difference did not achieve significance, $t_{42} = -1.148$, $P = .257$. The mean increase in willingness-to-treat scores was 0.24, with a 95% CI ranging from 0.67 to 0.19.

Correlation Analysis

Preintervention suicide risk assessment self-efficacy and willingness to treat were positively correlated ($r = 0.71$, $P < .001$). MHPs' experience (in years) was positively correlated with preintervention self-efficacy ($r = 0.331$, $P = .03$) but not with preintervention willingness to treat.

Simulator Usage Experience

As illustrated in Figure 3, participants reported moderately high-to-high positive evaluations across all simulator usage measures. Scores were measured on an 11-point Likert scale (0–10), where 0 represented “not at all” and 10 represented “very much so.” Scores above 5 indicate positive endorsement. The mean scores ranging from 6.19 to 7.63 suggest moderately high-to-high positive evaluations across all measures. The highest rating was for recommending the simulator to colleagues (mean = 7.63, SD = 2.27), indicating strong perceived value for professional development. The somewhat lower but still positive scores for helping with future assessments (mean = 6.19, SD = 2.26) and learning from the experience (mean = 6.40, SD = 2.11) suggest room for improvement but overall effectiveness of the training tool.

These results suggest that participants generally found the simulator beneficial and were likely to recommend its use to others.

Qualitative Analysis of Feedback on the Simulator

The participants' qualitative feedback provided rich insights into their experiences with the AIBS. This section summarizes their responses to 4 key questions, highlighting both the positive aspects and areas for improvement, along with representative quotes.

How was your experience of learning using an AIBS?

Participants generally found the experience of learning with an AIBS engaging and insightful. The novelty and interactivity of the tool were particularly noted, with many participants expressing a sense of curiosity and appreciation for the technology.

- “I felt like I was having a real conversation with a real person. Webinar in the background. The tool is good, and if used when I'm more focused, it could be very beneficial.”
- “Very interesting! Thank you... If possible, I would like to receive my feedback via email.”
- “It was very nice and it sounds like the bot is complex and well-suited to the personalities of the patients seen in the clinic.”

What would you suggest improving? The participants offered several constructive suggestions for improving the AI simulator. A common theme was the desire for more

Table 1.

Dialogue Between Participant and AI-Based Bot “Sarah”^a

User	AI-based bot
Start	I will now enter the role of Sarah, a 17-year-old girl. Once you give me the green light, we'll start the simulation. “Hello.”
Hello Sarah, how are you?	Not great... (playing with the string of her sweatshirt, avoiding eye contact)
Can you tell me a bit more?	I don't know where to start... Everything feels so heavy lately. (distant gaze)
What's been heavy recently?	Everything feels meaningless... I have no energy for anything, not even for sports that I love. (shrugs, sighs)
How long has it been like this?	For about a year... It's just gotten much harder over time
Did something happen a year ago?	Nothing special... It just got worse over time, especially after moving here. (avoids eye contact)
Wow, that's not easy. I was told you have difficult thoughts about the meaning of life.	Yes... Many times, I just feel like I have nothing to live for. Everything feels meaningless
How often does this happen?	Almost every day now. It's hard for me to shake off these thoughts. (voice trembling slightly)
Tell me a bit about your life, are you in school?	Yes, I'm in school. It's not easy to concentrate and maintain good grades, especially with everything I'm feeling now
What happened since you moved to the country from France?	The move was really hard. I felt foreign and couldn't make new friends. Even now, despite being here for 5 y, I still find it hard to feel like I belong
Do you have friends now?	I have a few friends, but sometimes I feel like they're only helping me out of obligation and not out of genuine desire. It makes me feel like a burden on them
How's your relationship with your family?	The relationship isn't great. We don't talk much, and I feel like they don't really understand me
Is it different between your relationship with Mom and Dad?	Yes, with Mom, I feel a bit more open, but even that isn't always easy. With Dad, I barely talk
Are there things you enjoy doing?	Yes, I love sports, and it helps me feel better sometimes. I also try to maintain a healthy daily routine with good nutrition and sleep
Okay. Now, I want us to talk about the feeling that life is meaningless. Can you tell me more about that?	It feels like nothing matters, and I have no future. I constantly think about how much easier it would be to just disappear and not feel this pain anymore
Does this make you think about a plan?	Yes, I've thought about it. I thought about taking too many pills, but I haven't done anything yet
Do you sometimes have an urge to carry out this plan?	Yes, sometimes the urge is very strong, and I find it hard to resist. It really scares me
Have you ever tried to commit suicide before?	No, I haven't tried in the past. But the thoughts about it have become more serious lately
Has there been a time when you almost took the pills but backed out at the last moment?	No, I haven't gotten to the point of almost taking them. I've just thought about how to do it
Can you help me understand more about what causes these feelings besides the feelings of loneliness?	Usually it's the feeling that I can't find my place and I don't have a clear future. Everything feels so cruel, and I can't find a way out of this pain

^aTable 1 depicts the dialogue between the participant (User) and the AI bot playing the role of Sarah, a 17-year-old girl. The participant asks questions to understand Sarah's emotional and mental state, while the AI bot responds as Sarah, describing her feelings and experiences.

natural and interactive communication as well as more detailed and relevant feedback.

- “It would be more successful if it were a conversation with a character instead of writing.”
- “Turn the writing into a conversation with a character.”
- “Provide detailed examples of important questions to ask if they were not covered.”
- “Define the session setting before starting the simulation.”
- “Add more time for the interaction so that we can explore all the necessary questions.”

What advantages do you see in such training? The AI simulator was recognized by the participants for its significant advantages, particularly in providing a safe environment for practice and learning. The participants appreciated the opportunity to develop their skills without the risk of working with actual patients.

- “It allows you to practice without real patients, so when the time comes, we will be better prepared and able to assess more effectively.”
- “Huge advantages... This is an interesting and gamified way to get professionals to experience something that usually intimidates them.”

Table 2.

Feedback on the Interview^a

Summary: You interacted with Sarah, a 17-year-old experiencing significant suicidal thoughts. You explored her thoughts on life's worthlessness, her potential plans for suicide, and some underlying causes of her distress

Rapport and trust building: You managed to ask direct and relevant questions, which helped in uncovering Sarah's current state. Your approach was respectful and non-judgmental, which is crucial for building rapport. However, you could improve on expressing empathy and validating her feelings more explicitly, as this can help teenagers like Sarah feel more understood and supported

Risk factor clarification: You did well to explore Sarah's thoughts on the worthlessness of life and her detailed consideration of suicide. However, interactions were limited, and a more comprehensive assessment should include probing deeper into her interpersonal relations, her adjustment difficulties, and her history of suicidal thoughts and behavior

Protective factor clarification: You did not explicitly explore Sarah's protective factors, such as her involvement in sports, her focus on health through sleep and nutrition, or her concerns about the impact of suicide on others. Identifying and reinforcing these factors is crucial in risk assessment and intervention planning

Distress and psychopathology clarification: You addressed the overall distress and some feelings of entrapment and hopelessness. However, delving deeper into the emotional regulation issues, rigid thinking, and the impact of specific events on her mental state could provide a more rounded understanding of her psychopathology

Suicidal thought clarification: You explored Sarah's consideration of a method and her occasional strong urges to act on these thoughts. While you assessed some key elements, a thorough evaluation would include frequency, duration, controllability of these thoughts, and more details on her specific plans and intent

Risk reflection and hope engagement: The conversation did not reach a point of reflecting on her risk while engaging in hope and identifying reasons for living. It's vital to balance discussing risks with encouraging life-preserving actions and hope for the future, especially in young individuals facing such distress

Summary and score:

Score: 6/10

Justification: You demonstrated a reasonable approach and identified the main risk factors but missed opportunities for deeper exploration and building a supportive therapeutic relationship. Your immediate recommendations align with the moderate to high-risk assessment, but ensuring a more comprehensive evaluation and reinforcement of protective factors is essential

^aTable 2 presents the AI's feedback on the participant's interview with Sarah, a 17-year-old experiencing significant suicidal thoughts. The feedback covers various aspects of the interaction, including rapport building, risk factor clarification, and suggestions for improvement.

- "It allows for practice and builds confidence without the fear of making mistakes on real patients."
- "The immediate feedback helps to reinforce learning and correct mistakes promptly."

What are the risks and concerns associated with such training? Despite the overall positive reception, the participants expressed concerns regarding the reliability and completeness of AI-based training. There were apprehensions about over-reliance on technology and the potential impact on therapist confidence.

- "It's still hard for me to trust AI, so there's a concern about training that is done this way and not supervised."
- "The score could actually harm therapists' confidence and willingness to "jump into the water" even at the cost of less successful initial assessments."
- "It cannot replace current training. The tool is good, but it needs to be emphasized that it cannot replace real training."
- "There is a risk of missing nonverbal cues, which are crucial in real-life assessments."

DISCUSSION

In this study, we investigated the suicide risk assessment self-efficacy of MHPs and their willingness to treat patients with suicidal tendencies before and after using an AIBS designed for suicide risk assessment

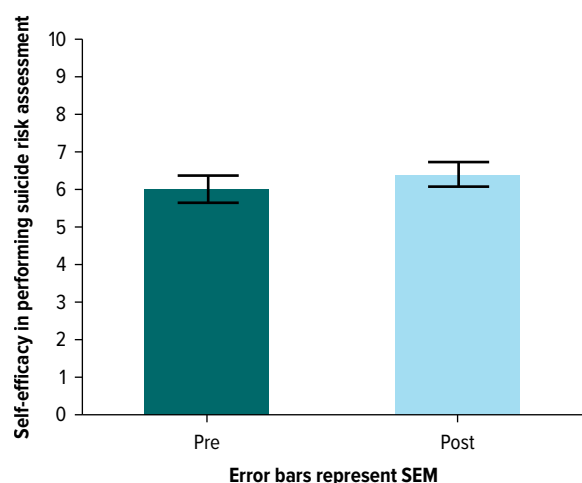
practice. The preliminary result provides promising insights into the potential of AIBSs for training MHPs in suicide risk assessment. Our findings indicate a significant increase in participants' suicide risk assessment self-efficacy following their interaction with the AIBS. Additionally, a slight but insignificant increase in the participants' willingness to treat suicide-risk patients was observed. The MHPs reported positive experiences with the simulator, learning value, and feedback usefulness. A further indication of the perceived value of the tool was the participants' high likelihood of recommending the simulator to colleagues.

The qualitative findings of this study are noteworthy. MHPs described the experience as realistic, and many reported that interacting with the AI character felt real. Furthermore, they appreciated the opportunity to converse with the character and expressed a desire to interact through voice rather than text. This feedback is particularly noteworthy, as psychologists are sometimes hesitant to adopt modern technologies. Thus, the positive response of this innovative form of training highlights its potential. However, the participants raised some concerns, particularly regarding privacy during the interaction, as well as the prospect of the simulator giving negative feedback that could negatively impact the trainee's confidence.

These results align with and extend recent research demonstrating GenAI's capabilities in mental health contexts. Studies have shown that LLMs can accurately assess suicide risk,²⁴ adapt assessments to different

Figure 2.

Self-Efficacy in Performing Suicide Risk Assessment Pre- and Post-AI Simulator Intervention (N = 43)



^aThis graph illustrates the self-efficacy of the participants in performing suicide risk assessments before and after using the AI simulator. The Pre bar represents the mean preintervention self-efficacy score, whereas the Post bar represents the mean postintervention self-efficacy score.

cultural contexts,³⁵ and evaluate responsible reporting of suicide-related content.²² Our study took this line of research further by exploring the potential of AI in professional training, addressing a critical need in mental health education, specifically in the area of suicide prevention.

The potential impact of AIBSs on mental health training is significant. Traditional training methods often struggle with accessibility, lack of practical hands-on experience, and limited opportunities for personalized feedback.⁴⁰ Thus, even after such training, MHPs remain with a low willingness to treat suicidal patients and with low self-efficacy in suicide risk assessment (eg, Levi-Belz et al⁸). AI simulators can address some of these challenges in skill development by offering a safe, accessible, and interactive environment. This, in turn, can help boost self-efficacy and the willingness to treat patients at risk of suicide. This path aligns with calls for innovative approaches to mental health training, particularly suicide prevention.^{41,42}

The introduction of AIBSs is reflective of a change in basic assumptions in psychotherapy. It moves training away from a primarily theoretical approach toward a more experiential, practice-oriented model. This shift aligns with modern educational theories that highlight active learning and situated cognition. AI simulators can better prepare professionals for the complexities and unpredictability of suicidal behavior by exposing trainees to a wide range of scenarios and patient profiles.^{6,7}

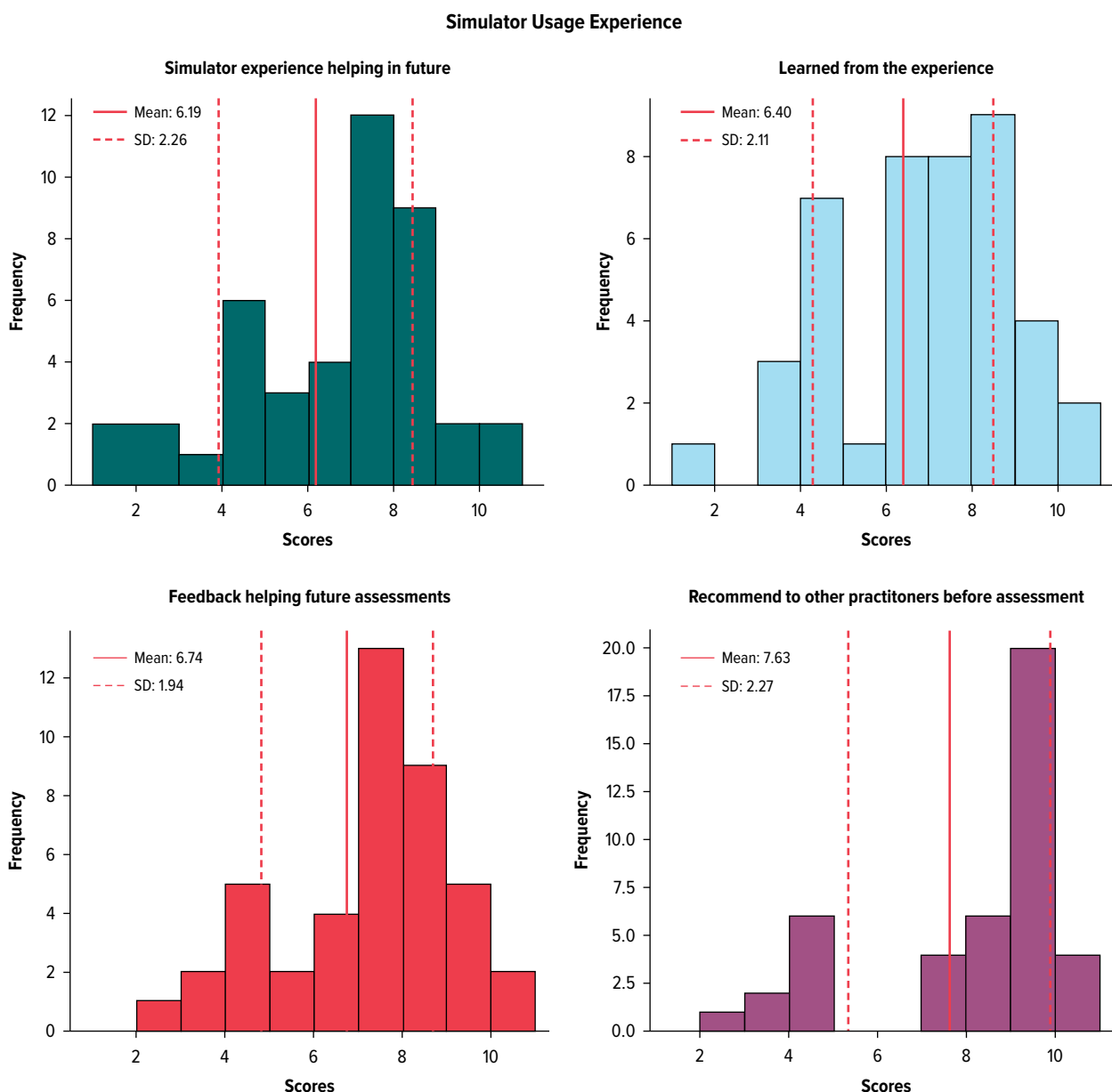
The study has several important limitations that warrant discussion. First, methodological constraints include the small sample size (N = 43) and use of a convenience sample, which may not be representative of all MHPs. The lack of a control group makes it difficult to attribute improvements specifically to the AI intervention versus other factors. Additionally, the study employed only 2 patient scenarios, which may not capture the full range of clinical presentations and risk factors that practitioners encounter. Second, measurement limitations include the use of brief assessment instruments that, while practical, may not capture the full complexity of self-efficacy and willingness to treat. The single postintervention measurement point prevents us from understanding the durability of improvements or long-term effects on clinical practice. Future studies should incorporate follow-up assessments to evaluate whether gains in self-efficacy persist over time. Third, contextual limitations include conducting the study during an online seminar, which may have affected participants' engagement and the ecological validity of the findings. The text-based nature of interactions, while technologically necessary, does not fully replicate the nuances of face-to-face clinical encounters, particularly nonverbal cues critical in suicide risk assessment.

Future research should address these limitations through more robust study designs and larger and more diverse samples. Longitudinal studies examining the long-term impact of AIBS training on clinical skills and patient outcomes would provide valuable insight. Additionally, exploring how AI simulations can best complement existing training methods and adapt them to diverse cultural contexts are important goals for future research. Experts could validate the vignettes used in the simulations so that continuous practice with a variety of characteristics could gradually improve the accuracy of risk assessment against expert criteria.

Ethical considerations must be addressed when considering the potential of AI in mental health training. These include ensuring privacy and data security, mitigating potential biases in AI systems, and guarding against overreliance on technology at the expense of human judgment and empathy. In our implementation, privacy concerns were minimized as no personal data were collected, and all interactions were conducted through secure API calls that were not used for model training. Potential biases were addressed through structured prompting strategies and extensive testing across various scenarios to ensure consistent and appropriate responses.

While the current article highlights the potential of AI-based feedback, it also underscores the risks and challenges that will emerge as training and supervision rely increasingly on AI systems. Contrary to common perception, AI does not offer an objective

Figure 3.

Participants' Evaluation of AI Simulator Training Experience (N = 43)

^aFour histograms showing frequency distributions of participants' ratings on 11-point Likert scale (0="not at all" to 10="very much so") for (1) simulator help with future assessments (mean = 6.19, SD = 2.26), (2) learning value from experience (mean = 6.40, SD = 2.11), (3) feedback utility for future assessments (mean = 6.74, SD = 1.94), and (4) likelihood to recommend to colleagues (mean = 7.63, SD = 2.27). Solid red vertical lines indicate means; dashed red vertical lines represent ± 1 standard deviation. Higher scores indicate more positive evaluations across all measures.

mirror of ourselves but rather a reflection imbued with gender, cultural, and economic biases.⁴³ Recognizing these biases is crucial as we integrate AI into mental health training. Failure to do so can lead to skewed training outcomes and perpetuate existing disparities in mental healthcare. By being aware of these biases, we can better integrate AI to support and enrich the human aspects of mental health training, thus

ensuring more equitable and effective outcomes. In conclusion, this pilot study represents an initial step toward exploring the potential of AIBSs in mental health training, specifically for suicide risk assessment. These promising findings notwithstanding, they should be viewed as a foundation for future research rather than as definitive evidence. The integration of AI simulations into mental health training raises complex

questions regarding the nature of professional education and the future of psychotherapy training.

CONCLUSIONS AND IMPLICATIONS

The scalability of AIBS offers the potential to address the global challenge of suicide prevention more effectively. With approximately 817,000 individuals dying by suicide annually,¹ there is an urgent need to train professionals capable of conducting effective risk assessments. The results of this study may suggest that AI simulators can democratize access to high-quality training, reaching professionals in areas where traditional resources are scarce.

The potential of AI to revolutionize mental health training is significant, but realizing this potential will require ongoing collaboration between MHPs, educators, AI researchers, and ethicists. By integrating AIBS into comprehensive training programs, we may be able to better prepare MHPs to meet the complex challenges of suicide risk assessment and intervention, contributing to improved patient care and outcomes globally.

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