AI chatbots and students' mental health support: An efficacy review

American Journal of Education and Learning
Vol. 10, No. 2, 207-225, 2025
e-ISSN:2518-6647

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ABSTRACT

Mental health challenges affect every facet of student life. The potential of AI tools, such as chatbots in mental health support, is particularly compelling given their ability to overcome traditional barriers to care. The study aimed to determine the effectiveness of AI chatbots in supporting students' mental health. The study employed a systematic review following the guidelines of PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses). Relevant studies were identified through a comprehensive literature search across EBSCO (ERIC), Web of Science, and JSTOR. The study revealed that AI chatbots have the potential to reduce stress through automation. They increased engagement, cognitive achievement, self-efficacy, learning autonomy, and decreased frustration among students. Additionally, leveraging advanced machine learning models like GPT-based architecture combined with emotional AI could enhance the accuracy of emotional assessments to improve students' learning outcomes. The "how" of chatbots in supporting students' mental health, as explored in the present study, provides valuable insights for stakeholders in education. It highlights the various aspects of mental health issues that chatbots can support and guides the development of necessary chatbot tools for educators. Furthermore, the study aims to inform government and educational stakeholders about how advanced AI chatbots can impact students' emotions toward learning. The recommendation is that AI chatbots should be integrated into school platforms or applications already in use by students to maximize their impact on mental health.

Keywords: *AI chatbots, challenges, efficacy, students' mental health, support.*

DOI: 10.55284/ajel.v10i2.1554
Citation | Konadu, B. O., & Kusi, E. (2025). AI chatbots and students' mental health support: An efficacy review. *American Journal of Education and Learning, 10*(2), 207–225.

Funding: This study received no specific financial support.
Institutional Review Board Statement: Not applicable.
Transparency: The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.
Competing Interests: The authors declare that they have no competing interests.
Authors' Contributions: Both authors contributed equally to the conception and design of the study. Both authors have read and agreed to the published version of the manuscript.
History: Received: 26 July 2025/ Revised: 26 August 2025/ Accepted: 1 September 2025/ Published: 8 September 2025
Publisher: Online Science Publishing

Highlights of this paper

- The study investigated into the effectiveness of AI chatbots in supporting students' mental health.
- AI chatbots have the potential to reduce stress through automation. Chatbots increased engagement, cognitive achievement, self-efficacy, learning autonomy, and decreased frustration among students.
- AI Chatbots should be embedded into school platforms or apps already in use by students to increase their impact on their mental health.

1. INTRODUCTION

Good mental health fosters achievement in life. The Centers for Disease Control and Prevention (CDC) defines mental health as encompassing our emotional, psychological, and social well-being. It influences our cognition, emotions, and behavior. It also aids in ascertaining our stress management, interpersonal relations, and health-related decision-making. Mental health is crucial at all life stages, from childhood and adolescence to adulthood (Centers for Disease Control and Prevention, 2021). Independent School Management (ISM) (2023) asserts that mental wellness is a crucial element of student achievement. Students experiencing mental health challenges will encounter suboptimal academic performance. Mental health and academic success are evidently interconnected. Schools must take action to uphold their dedication to students' holistic well-being and academic achievement.

Independent School Management (ISM) (2023) reported that mental health issues significantly impact student life, including low self-esteem, anxiety, and depression. These issues can hinder motivation, focus, and academic performance. If not addressed, students with mental health difficulties may face negative consequences such as difficulty forming friendships, poor academic performance, frequent absences, and the risk of suspension or expulsion. Addressing these issues is crucial for a student's overall well-being and academic success.

When a student's distinct requirements are acknowledged, comprehended, and facilitated, they can exhibit their strengths and attain their full potential. The mental health requirements of students are integral to their overall well-being, and it is the responsibility of educators to understand the consequences of mental health on learning. Over the past ten years, numerous programs for mental health promotion in schools have been evaluated, yielding various levels of success (O'Reilly, Svirydzenka, Adams, & Dogra, 2018). Numerous mental disorders result in life issues that necessitate assistance, rendering adolescence a pivotal period for mental health promotion, prevention, early detection, and intervention. The urgency of the issue is paramount, as mental health significantly influences students' social and emotional growth and their academic achievement.

Examining the correlation between students' mental health and academic performance is a primary concern for educators, policymakers, and community stakeholders. Previously seen as separate areas, data suggests that mental health (or social-emotional competence) and academic achievement are interconnected (Jones, Brown, & Lawrence Aber, 2011; Moilanen, Shaw, & Maxwell, 2010). Promoting positive mental health in students has been demonstrated to improve academic development, and various curricula are designed to enhance academic skills through social and emotional learning (Brackett, Rivers, Reyes, & Salovey, 2012; Denham & Brown, 2010; McCormick, Cappella, O'Connor, & McClowry, 2015).

There is a need to find support for students with mental health problems. One way is using AI tools. The efficacy of AI tools, such as chatbots, in mental health support is particularly compelling due to their capacity to surmount conventional obstacles to care. In contrast to in-person treatment, AI chatbots are accessible around the clock, may connect with persons in rural or underserved regions, and provide a degree of anonymity that may diminish stigma and promote help-seeking behavior (Molli, 2022). Furthermore, AI chatbots can provide interventions at scale, thereby alleviating the pressure on mental health systems overwhelmed by rising demand. AI chatbots are interactive software applications engineered to replicate dialogue with users, employing natural language processing and machine learning algorithms to comprehend and react to user inputs. These chatbots can facilitate tailored dialogues,

furnish psychoeducational content, present coping mechanisms, and administer therapeutic interventions (Molli, 2022).

1.1. Problem Statement

According to Independent School Management (ISM) (2023) one in six children in the United States suffers from a mental health issue. Mental health illnesses impacting students may include melancholy, anxiety, stress, rage, sorrow, conduct issues, emotional and behavioral problems, and attention deficit hyperactivity disorder (ADHD). Students afflicted by these illnesses face substantial obstacles in their education and are less likely to attain graduation. An increase in mental health challenges is associated with a decreased likelihood of academic success or timely graduation for students (Dilley, 2009). Educators have acknowledged the influence of a student's mental health on learning and performance, recognizing the significant measures that can be used to assist students with mental health challenges (Barile, 2020). To tackle these difficulties, there is an increasing interest in utilizing technological breakthroughs, especially artificial intelligence (AI), to offer creative solutions for mental health care. AI-based chatbots have emerged as useful, accessible, and scalable platforms for providing mental health interventions. Notwithstanding their potential, the efficacy of AI chatbots in mental health assistance continues to be a subject of ongoing investigation and discussion (Molli, 2022). Although several research studies indicate favorable outcomes related to user engagement, symptom alleviation, and treatment compliance, others emphasize obstacles such as insufficient personalization, absence of empathy, and apprehensions surrounding data privacy and ethical considerations. Considering these, this systematic review aims to determine the effectiveness of AI chatbots in supporting students' mental health. The study therefore addresses the questions: how does AI chatbot support the mental health care of students? And what are the future prospects and innovations of AI chatbots on students' mental health care?

2. CONCEPTUAL FRAMEWORK

AI chatbots have the potential to support the mental health care of students and can be done ideally through mediating pathways such as.

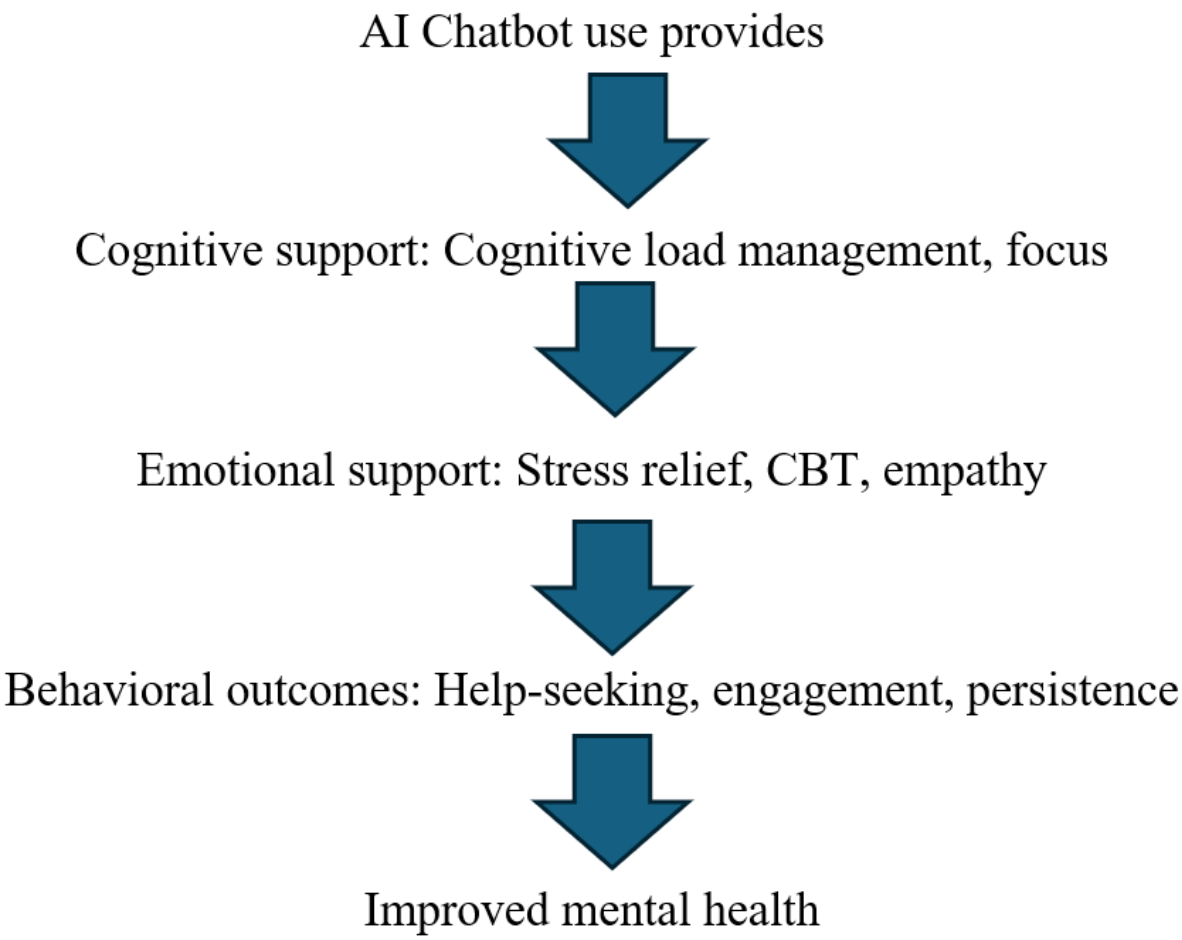

Figure 1. Researchers own construct (2025).

The integration of AI chatbots in educational settings presents implications for students' cognitive, emotional, and behavioral well-being, which are critical components of mental health (Figure 1). From a cognitive perspective, chatbots possess the capacity to mitigate cognitive load and enhance information processing through the provision of real-time, personalized feedback (Uddin, Rahman, Khan, & Ahmed, 2023). In terms of emotional support, these tools, leveraging Natural Language Processing (NLP) and Machine Learning (ML) capabilities, can deliver psychoeducational interventions and therapies informed by Cognitive Behavioral Therapy (CBT) principles, potentially leading to reductions in stress, anxiety, and depressive symptoms (Ayanouz, El-Khattabi, & Benali, 2020). Also, good mental health is often associated with student social-emotional learning (SEL). The social and emotional well-being of teachers further determines students' SEL (Konadu, 2025) which can positively or negatively affect their mental health, leading to poor or improved academic performance. Behaviorally, the 24/7 availability, anonymity, and accessibility of AI chatbots serve to diminish stigma and foster help-seeking behaviors, thereby positioning them as a scalable solution for mental health support within academic environments.

2.1. Mental Health and Students' Academic Success

Mental health is crucial at all life stages, including childhood, adolescence, and adulthood (What Is Mental Health, 2019). At least one in three adolescents across all grades has reported experiencing sadness or hopelessness, which has affected their daily activities (Mertens, Caskey, & Flowers, 2016; Walsh, 2019). Globally, depression ranks as the fifteenth leading cause of sickness and disability among those aged 10 to 14 years, whereas anxiety is the ninth leading cause for the same age group (Office of Adolescent Health, 2019). Approximately one in five youths had a

mental illness prior to the age of 25 (Walsh, 2019). O'Reilly et al. (2018) indicated that 50% of people with mental problems had encountered these symptoms before the age of 15. In this context, Barry, Clarke, Jenkins, and Patel (2015) indicated that 10-20% of youth globally have encountered mental health issues.

Adolescence is a crucial phase for establishing the foundations of healthy development and optimal mental health. Given these challenges, educational institutions play a vital role in recognizing adolescents with emotional and behavioral issues and facilitating their treatment. Fazel, Hoagwood, Stephan, and Ford (2014) indicated that the predominant challenges faced by school-age children are disruptive behavior and anxiety disorders, with generalized anxiety, conduct disorder, and depression being more prevalent among secondary school students (aged 11-18 years). For certain students, it may induce stress, anxiety, and discontent, thereby impacting their academic performance (Walsh, 2019).

In the United States, for the school year 2015 to 2016, public schools reported that 71 percent of their students had access to diagnostic assessments for mental health illnesses, while 64 percent of schools reported the availability of treatment (Editor, 2018). Additionally, 3.2 million adolescents accessed services, including counseling or engagement in a behavioral health program within an educational context (Office of Adolescent Health, 2019). Furthermore, in 2016, 3.6 million teenagers used mental health treatments, including consultations with psychiatrists, psychologists, or counselors in specialized mental health facilities (Office of Adolescent Health, 2019). If mental health issues remain untreated, they may result in detrimental and enduring consequences, encompassing significant emotional and economic burdens for individuals with the disease, as well as their families, educational institutions, businesses, and communities (Office of Disease Prevention and Health Promotion, 2020).

Adolescents with mental health issues have diminished academic performance and achieve significantly lower educational attainment compared to their peers (McLeod, Uemura, & Rohrman, 2012). This applies to various indicators of mental health issues, encompassing internalizing problems (i.e., psychopathology) and externalizing problems (i.e., ADHD symptoms, aggression, and risk-taking behaviors) in young children, psychological distress and depression in preadolescents and adolescents, as well as specific disorders such as attention deficit hyperactivity disorder (ADHD) (Galéra, Melchior, Chastang, Fombonne, & Bifulco, 2009; McLeod et al., 2012). This also applies to behavioral issues strongly linked to mental health, such as delinquency and substance abuse (McLeod et al., 2012). Consequently, the management and identification of adolescent emotional behavior and well-being are essential, as this facilitates the analysis of stress-inducing factors and the implementation of strategies to attain personal and academic objectives, including parental involvement in their child's education (Centers for Disease Control and Prevention, 2012).

2.2. AI Chatbots and Mental Health Care of Students

Several studies have investigated the feasibility and acceptability of AI chatbots in delivering psychoeducation and self-help interventions for a range of mental health conditions, including depression, anxiety, and stress.

Xie, Li, Chen, and Wang (2019) conducted a study investigating the application of an AI chatbot for administering cognitive-behavioral therapy (CBT) procedures to people with anxiety disorders. Findings demonstrated increased user engagement and satisfaction, with participants indicating reductions in anxiety symptoms post-intervention. A study conducted by Zhang, Zhao, and Liu (2016) assessed the efficacy of an AI-driven chatbot in delivering mindfulness-based stress reduction (MBSR) exercises to college students facing elevated stress levels. The findings indicated substantial decreases in self-reported stress levels and enhancements in psychological well-being among those who consistently interacted with the chatbot.

The efficacy of AI chatbots may fluctuate based on variables including user attributes, intervention material, and technological specifications. A study by Lee, Kim, and Park (2012) indicated that users' prior technological experience and their expectations of human-like interaction influenced their perception of the utility of an AI chatbot for mental health care. AI tutoring systems offer prompt feedback, mitigating feelings of frustration and inadequacy, thereby enhancing pupils' self-efficacy and confidence (Yang & Xia, 2023). Moreover, AI has facilitated substantial progress in mental health support by offering tools like automated feedback, virtual teaching, and real-time evaluations. Furthermore, a notable strength of AI is its capacity to discern patterns in mental health data that may elude human practitioners. Machine learning algorithms can examine linguistic variations to forecast mental health disorders, providing an accurate and scalable method for diagnosis and intervention (Olawade et al., 2024). AI models have demonstrated potential in forecasting disorders such as depression and anxiety through the analysis of electronic health records (EHRs) (Nemesure, Heinz, Huang, & Jacobson, 2021) and social media data (Santos, de Oliveira, & Paraboni, 2024). Ettman and Galea (2023) Highlighting the significance of AI in enhancing access to mental health care through online programs, including mindfulness-based cognitive therapy, which have been successful in improving depression outcomes (Small et al., 2020).

However, many existing literature primarily discuss the cognitive and academic advantages of AI applications as well as the impact of AI tools on students' academic performance. Few studies have been conducted on how these AI chatbots can support student mental health. Therefore, this systematic review firstly sought to find out how AI chatbots support the mental health care of students. Also, the study sought to determine the future prospects and innovations of using AI chatbots to improve the mental health of students.

3. METHOD

A systematic review was conducted following the guidelines of PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) (Moher, Liberati, Tetzlaff, & Altman, 2009). The literature search aimed at finding answers to the questions; i) how does AI chatbot support the mental health care of students? ii) what are the future prospects and innovations of AI chatbots on students' mental health care? This was achieved through the data search bases; ERIC (EBSCO), Web of Science, and Jstor. Chatbots and ChatGPT were used interchangeably as ChatGPT serves as a commonly used chatbot in education. The search terms used were "AI tools and Students' Mental Health" OR "AI tools and Students' Mental Health care" OR "AI tools and Students' Mental Health support" OR "Chatbot and Students' Mental health" OR "Chatbot and Students' Mental health care" OR "Chatbot and Students' Mental Health support" OR "ChatGPT and Students' Mental Health", "ChatGPT and Students' Mental Health care", "ChatGPT and Students' Mental Health support".

The inclusion criteria encompassed articles published in peer-reviewed journals or reputable internet databases, studies concentrating on the utilization of AI chatbots to assist students' mental healthcare, and review papers providing an exhaustive and systematic overview, analysis, or integration of current material published in English were included. Additionally, papers published between 2020 and 2025 were considered. Studies documenting both favorable and unfavorable effects of AI on mental health treatment were also incorporated. Articles published beyond the designated time frame were omitted. Furthermore, papers concentrating on the mental health care of patients rather than students utilizing AI chatbots were excluded. Additionally, articles were removed if they were conference abstracts. Figure 2 illustrates the summary of the process in retrieving the final articles for the review.

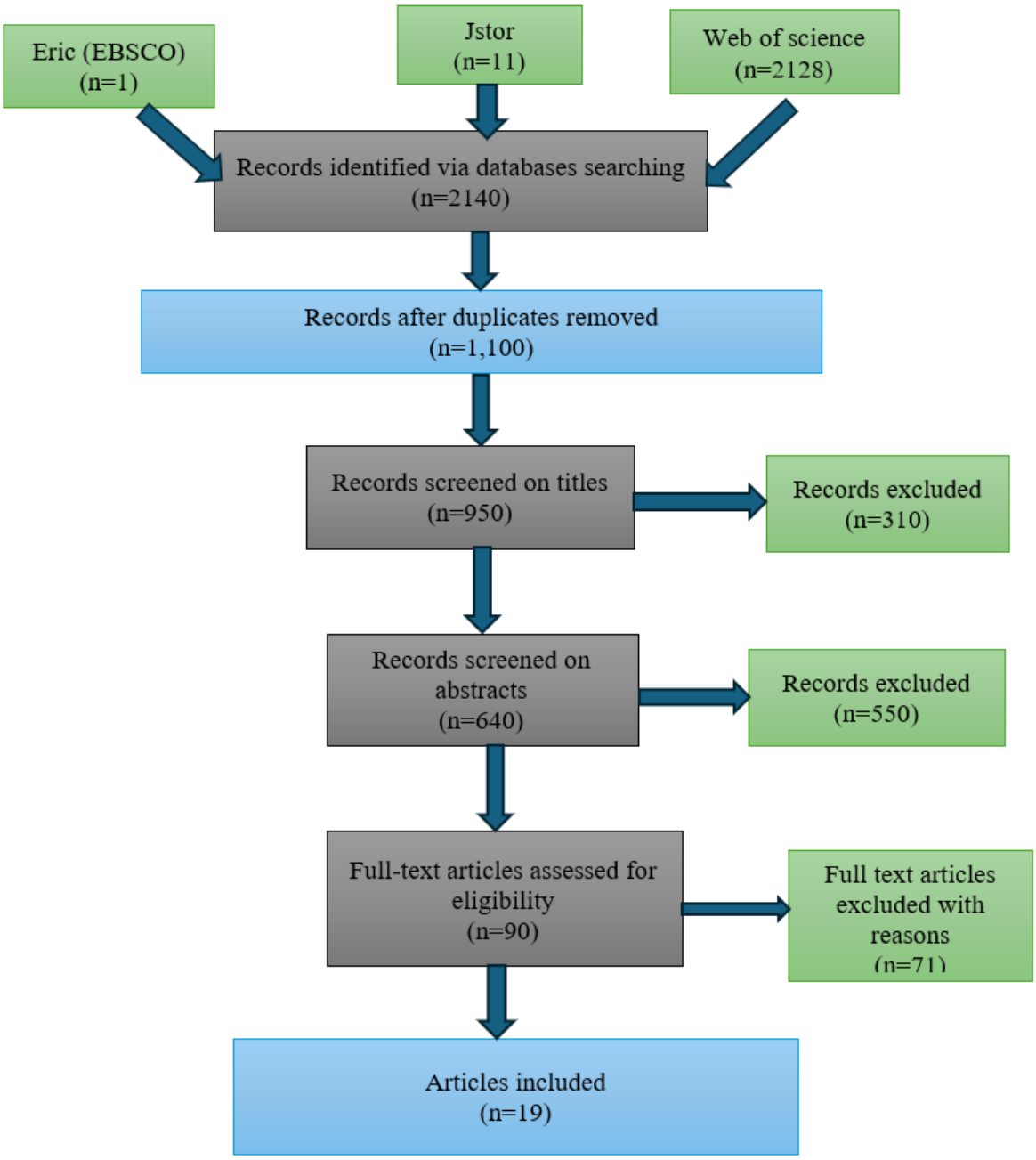

Figure 2. PRISMA flow diagram of the systematic literature review search adapted from Moher et al. (2009).

The database searches retrieved a total of 2,140 articles (Figure 2). The duplicate articles were manually removed, leaving 1,100 articles. These articles were then screened for eligibility. Upon reviewing the titles, 950 articles were obtained. A further 310 articles were excluded after assessing the titles, resulting in 640 articles. An additional 550 articles were excluded after reading the abstracts because they did not focus on the relationship between chatbots and mental health care of students, leaving 90 articles for eligibility assessment. The full texts of these articles were read and assessed by two independent reviewers. The reviewers used Microsoft Excel as a data management tool to classify and analyze the full-text articles. Through discussion, consensus was reached on which analyses to include in the review. As a result, 71 articles were excluded based on the exclusion criteria, and 19 articles were finally included in the present systematic review.

4. RESULTS

The search retrieved 2,140 articles. Nineteen of the articles were finally included in the review. The remaining studies were excluded after passing through the stages in Figure 2. The characteristics of the 19 peer-reviewed articles were presented in Table 1. Also, the number of articles retrieved from the various years was shown in Figure 3.

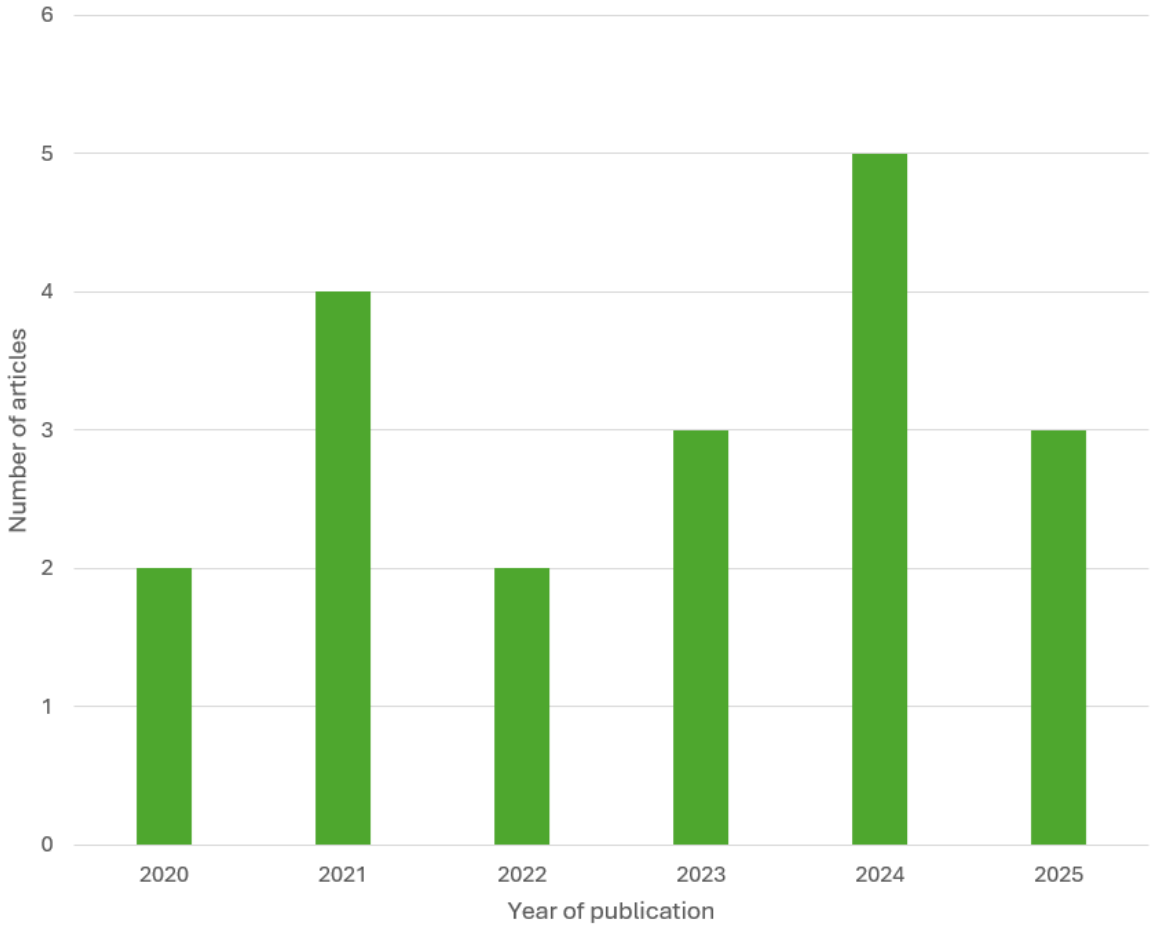

Figure 3. Number of articles retrieved from the time frame (2020 to 2025).

There was an increased number of publications in 2024 (Figure 3). Five articles were retrieved in that year, accounting for the highest number of articles reviewed in the present study. Four were retrieved from 2021. In 2023 and 2025, three articles were retrieved, whilst two each were retrieved in 2020 and 2022, respectively (Figure 3).

Table 1. Data Extraction Table of Studies.

Authors and year	Title	Study design	Sample	Result
Molli (2022)	Effectiveness of AI-Based Chatbots in Mental Health Support: A Systematic Review	A systematic search	20 relevant studies	Several studies have shown substantial enhancements in user-reported symptoms based on quantitative analysis of intervention results. Following interactions with AI chatbots, subjects indicated reduced stress levels, diminished symptoms of anxiety and sadness, and an increased sense of contentment. The qualitative analysis of user experiences emphasized the perceived advantages of AI chatbots, such as accessibility, convenience, and anonymity.
Casu, Triscari, Battiato, Guarnera, and Caponnetto (2024)	AI Chatbots for Mental Health: A Scoping Review of Effectiveness, Feasibility, and Applications	Scoping review	15 studies were included in the final analysis	AI chatbots exhibited potential advantages in facilitating behavioural change, addressing certain mental health illnesses, and improving mental and emotional well-being. Nonetheless, the existing healthcare systems were recognized to possess usability, engagement, and interaction deficiencies. AI chatbots possess the capacity to transform mental health interventions; nevertheless, their widespread use depends on enhancements in usability, engagement, and integration with healthcare systems.
Delello et al. (2025)	AI in the Classroom: Insights from Educators on Usage, Challenges, and Mental Health	Mixed-methods approach	334 educators	Some teachers recognized that AI may alleviate stress via automation, while others expressed apprehensions over heightened anxiety and social isolation due to diminished human contacts.
Kundu and Bej (2025)	Psychological impacts of AI use on school students: a systematic scoping review of the empirical literature	Systematic scoping review	24 relevant studies	The utilization of AI in educational environments may yield both beneficial and detrimental impacts on students' psychological well-being. This strategy not only reduces frustration but also enhances engagement, cognitive achievement, self-efficacy, and learning autonomy. Conversely, it has drawbacks such as over-dependence, anxiety, stress, social isolation, unstable mental health, and ethical dilemmas about privacy, partiality, and fairness.

Abdillah, Partino, and Madjid (2023)	Enhancing Student Well-being through AI Chat GPT in the Smart Education University Learning Environment: A Preliminary Review of Research Literature	Comprehensive literature review	10 articles	AI Chat GPT has the potential to enhance students' mental well-being. AI Chat GPT can identify early indicators of mental health concerns by examining student conversations. These chatbots can offer pertinent resources and information on mental health, in addition to functioning as virtual therapists accessible to always assist students with emotional support.
Li and Anila (2023)	Impact of Artificial Intelligence (AI) in Enhancing Productivity and Reducing Stress Among Students	A systematic literature review	15 articles were analyzed	Artificial intelligence-powered chatbots and virtual mentors are essential for providing emotional support, significantly alleviating students' anxiety levels.
Al-Sayed, Assayed, Alkhatib, and Shaalan (2024)	Impact of Artificial Intelligence Chatbots on Student Well-being and Mental Health: A Systematic Review	Systematic review	14 Articles were reviewed	The findings indicated that the primary mental health concerns influenced by conversational agents and chatbots are anxiety and depression.
Asimolowo (2025)	Leveraging AI-Powered Chatbots for Mental Health Support for High School Students	Case Study	2 case studies	The findings indicate that chatbots enhance mental health outcomes by augmenting accessibility, diminishing stigma, and promoting early interventions. AI chatbots possess the ability to recognize emotions, encompassing sarcasm, cultural variances, and intricate emotional states, owing to their emotional recognition capabilities. The precision of emotional evaluations may be enhanced by integrating emotional AI with sophisticated machine learning models, including GPT-based architectures.
Abd-Alrazaq et al. (2019)	Effectiveness and Safety of Using Chatbots to Improve Mental Health: Systematic Review and Meta-Analysis	A systematic review	12 articles	According to limited research, chatbots have demonstrated efficacy in alleviating acrophobia, anxiety, melancholy, and pain. In contrast, analogous data indicated that the utilization of chatbots did not have a statistically significant effect on individuals' subjective psychological well-being. The findings concerning the impact of chatbots on anxiety levels were inconclusive.
Saadati and Saadati (2023)	The role of chatbots in mental health	A qualitative research design	22 participants	Mental health chatbots serve as a significant resource for people seeking care, providing

	interventions: user experiences			advantages in engagement, tailored assistance, and perceived effectiveness. It is essential to confront identified obstacles, including technological constraints and emotional disconnection, to improve consumer satisfaction and trust.
Liu, Peng, Song, Xu, and Zhang (2022)	Using AI chatbots to provide self-help depression interventions for university students: A randomized trial of effectiveness	Randomized controlled trial	83 university students (41 in the chatbot group, 42 in the bibliotherapy control group)	The engagement of AI chatbots significantly reduced symptoms of sadness and anxiety in university students and improved the therapeutic alliance more successfully than bibliotherapy, highlighting its potential as a helpful self-help tool.
Oliveira, Matos, Junior, and Delabrida (2021)	An Initial Assessment of a Chatbot for Rumination-Focused Cognitive Behavioral Therapy (RFCBT) in College Students	Experimental study	105 college students	The chatbot may be able to lessen the symptoms of assessed mental illnesses, according to the results. A statistically significant improvement in symptoms following chatbot use was observed in one research. Rumination, worry, and depressed symptoms were significantly reduced, according to another study. The round-the-clock accessibility and cordial dialogue with the chatbot were valued by the participants.
Klos et al. (2020)	Artificial Intelligence–Based Chatbot for Anxiety and Depression in University Students: Pilot Randomized Controlled Trial.	Pilot study	Initial: 181 Argentinian college students	According to the results, most students thought the chatbot was useful and simple to use. After conversing with the chatbot over time, participants reported a statistically significant decrease in their anxiety and despair levels. According to the study, AI chatbots could be a useful tool for giving college students early and easily accessible mental health help, which calls for more research and larger-scale trials.
Rackoff, Zhang, and Newman (2025)	Chatbot-delivered mental health support: Attitudes and utilization in a sample of U.S. college students	Cross sectional survey study	428 undergraduate students	The results suggest that a small number of students utilized chatbots for mental health support, and the majority perceived them as less beneficial than traditional services. Nevertheless, chatbots encountered fewer obstacles, such as stigma, cost, and time, which indicates that there is potential for improvement if trust and perceived efficacy are enhanced.
Schei, Møgelvang, and Ludvigsen (2024)	Perceptions and Use of AI Chatbots among Students in Higher Education: A	Scoping review	24 empirical studies published between January 2022 and September 2023	According to the results, students usually have a high opinion of AI chatbots for writing and coding activities, but they also voice concerns about their accuracy and possible

	Scoping Review of Empirical Studies			detrimental effects on learning, creativity, and critical thinking. There are study deficits in various areas and fields, with the majority of studies concentrated on STEM disciplines. Effective AI integration in education requires addressing students' concerns.
Maples, Cerit, Vishwanath, and Pea (2024)	*Loneliness and Suicide Mitigation for Students Using GPT-3-Enabled Chatbots*	Cross-sectional survey study	1,006 student users of the Replika chatbot.	Despite students' pronounced feelings of loneliness, the findings indicate that the GPT-3-powered chatbot Replika provided them with a sense of support. Some users reported a reduction in suicidal ideation, while three percent indicated it prevented them from attempting suicide. In addition to serving as an intellectual companion, users perceived the chatbot as a therapeutic entity.
Sia, Yu, Daliva, Montenegro, and Ong (2021)	*Investigating the acceptability and perceived effectiveness of a chatbot in helping students assess their well-being.*	Experimental user study	25 senior high school students from the Philippines.	Students' well-being was positively impacted by the chatbot Abot, which was deemed acceptable and successful. Improved social connections, reduced device use, enhanced academic performance, and better sleep were among the benefits noted by participants. The performance and emotional engagement of the chatbot were highly praised by users in their feedback.
Gabrielli et al. (2021)	Engagement and Effectiveness of a Healthy-Coping Intervention via Chatbot for University Students During the COVID-19 Pandemic: Mixed Methods Proof-of-Concept Study	Mixed methods proof-of-concept study	71 first-year university students	Those students who started out with more anxiety were the ones whose anxiety and tension levels dropped the most after using the Atena chatbot. Emotional description and nonjudgment are two aspects of mindfulness that participants show improvements in. With an average of 78 interactions spread across four weeks, engagement was at a high level.
De Nieva, Joaquin, Tan, Marc Te, and Ong (2020)	Investigating students' use of a mental health chatbot to alleviate academic stress	Pilot Study	25 senior high school students	Students deemed the Woebot chatbot beneficial in alleviating academic stress, citing positive feedback regarding its instructional quality and empathy. Nonetheless, issues with erroneous responses were noted, suggesting that chatbot interactions may be enhanced.

Recent evidence shown in Table 1 indicates that AI chatbots are utilized at various educational levels to provide mental health support to students. Research regularly demonstrates that students' mental health issues correlate with

diminished academic performance, underscoring the necessity for accessible solutions. An analytical analysis of current applications reveals that AI chatbot-driven help produces several promising results. This encompasses quantifiable decreases in symptoms of depression and anxiety, increased student autonomy in self-directed learning, and diminished levels of perceived stress and frustration. Moreover, chatbots enable the prompt identification of mental health issues, which is essential for appropriate management and the prevention of exacerbation. Their function as virtual counsellors facilitates ongoing emotional support, rendering mental health resources more accessible and less stigmatized for students who might otherwise be reluctant to seek assistance. These findings collectively underscore the potential of AI-based interventions to enhance students' psychological well-being and positively impact educational outcomes through continuous and personalized support. This is corroborated by other studies indicating statistically substantial decreases in concern, rumination, anxiety, and depression following the use of chatbots, especially among college students. Students value chatbots like Replika, Woebot, and Atena for their perpetual accessibility, amiable nature, and therapeutic advantages. Enhanced emotional awareness, mindfulness, greater sleep quality, heightened academic productivity, and the mitigation of suicidal ideation have all been associated with these attributes. AI chatbots improve accessibility, reduce stigma, and encourage proactive initiatives.

The findings further reveal that although AI chatbots present considerable potential, their use is accompanied by risks and unforeseen consequences. In certain instances, these tools may intensify anxiety and feelings of social isolation, especially when extended use diminishes interpersonal relationships or promotes psychological dependence. Moreover, claims of heightened stress levels and psychological instability highlight the necessity to investigate the cognitive and emotional compromises linked to prolonged chatbot encounters. Ethical problems, including privacy concerns, algorithmic bias, and procedural fairness, arise as essential aspects in assessing the wider societal implications of these technologies.

Adverse results were recorded concerning usability, prolonged student engagement, and the seamless integration of chatbot platforms with current healthcare services, indicating deficiencies in design and interoperability. Student responses also highlighted concerns over perceived correctness, the lack of emotional complexity, and possible detrimental consequences on higher-order cognitive skills, including critical thinking and creativity. These findings indicate a necessity for more sophisticated chatbot development that emphasizes trust-building, context-aware personalization, and feature augmentation to promote psychological safety and cognitive development. Mitigating these design and ethical constraints is crucial for AI chatbots to significantly enhance student mental health outcomes without compromising social, cognitive, or institutional welfare.

4.1. Discussion of Results

The review was conducted to determine the effectiveness of AI chatbots in supporting the mental health care of students. Students' mental health is important in contributing to their academic success. Students are the future leaders of society; thus, there is a need to consider their mental healthcare.

How does AI chatbot support mental health of students?

Research increasingly positions AI chatbots as valuable tools for supporting students' mental health across educational levels. A growing body of work suggests they can address some of the accessibility and stigma barriers common in traditional counseling. Delello et al. (2025) argue that automation through AI can reduce tension while improving cognitive performance, self-efficacy, learning autonomy, and engagement effects that align with findings by Kundu and Bej (2025), who also report decreases in student dissatisfaction. Other studies, such as those by Abdillah et al. (2023) and Asimolowo (2025), highlight chatbots' potential to enhance mental health through continuous interaction monitoring and early identification of issues. These findings contrast with (Abd-Alrazaq et al., 2019), who

found no statistically significant improvement in subjective psychological well-being from chatbot use. Overall, the literature points to AI chatbots as effective, timely, and nonjudgmental supports that can operate alongside existing services. Features like mood tracking, guided self-help exercises, and personalized coping strategies allow students to better manage stress and regulate emotions, offering benefits from primary through tertiary education. The evidence suggests their positive influence lies in their ability to combine immediacy, personalization, and confidentiality in ways that traditional support systems often cannot.

Recent empirical work provides substantial evidence for the role of AI chatbots in enhancing students' emotional well-being and mental health. Liu et al. (2022) found that chatbot interventions significantly reduced anxiety and depression symptoms in university students, while also fostering stronger therapeutic bonds than conventional bibliotherapy. Similarly, Oliveira et al. (2021) reported statistically significant reductions in depressive symptoms, anxiety, and rumination, with students highlighting the empathic tone and 24/7 accessibility of chatbot conversations as key factors that improved their sense of support. Klos et al. (2020) further underscored the value of these tools in early detection and management of mental health concerns, noting substantial decreases in anxiety and depression after chatbot implementation. Across these studies, the consistent pattern is that AI chatbots support emotional well-being by combining constant availability, empathetic communication, and personalized, immediate interventions. These features make mental health support more accessible and less stigmatized, while enabling timely detection and management of issues that might otherwise go unaddressed.

Some AI chatbots appear to exert a deeper emotional influence on users, extending beyond basic informational or coping support. Maples et al. (2024) reported that the GPT-3-powered chatbot Replika provided companionship and therapeutic support for students experiencing loneliness, with a small subset attributing their avoidance of suicidal actions to its presence, describing it as a buddy, therapist, and intellectual confidant. Similarly, Sia et al. (2021) found that the chatbot Abot improved student well-being by enhancing sleep patterns, reducing screen time, fostering positive social connections, and boosting academic performance. Together, these studies highlight the potential of AI chatbots to act as meaningful emotional anchors, capable of reducing loneliness, supporting healthier daily routines, and promoting academic success. Their impact appears to be strongest when design emphasizes empathy, personalization, and sustained engagement, allowing them to function as powerful complements to traditional mental health and wellness interventions.

Despite the advantages described above, several limitations remain. Rackoff et al. (2025) noted that while chatbot use among students reduced barriers related to cost, time, and stigma, overall adoption was relatively low. Concerns about dependability and effectiveness persisted among users. Schei et al. (2024) similarly found that students valued AI chatbots for both academic and practical purposes such as writing and coding, yet they also expressed reservations about the tools' accuracy and their possible negative impact on creativity and critical thinking. Taken together, these findings suggest that although AI chatbots hold promise, challenges related to trust, functionality, and broad adoption need to be addressed for successful integration. From our perspective, the benefits in accessibility and utility are clear, but limited adoption reflects deeper issues tied to perceived reliability and the role of these tools in learning. Students' recognition of chatbots' usefulness is tempered by concerns over accuracy and the risk of diminishing independent thought. Addressing these concerns will require design improvements that enhance transparency, strengthen accuracy, and incorporate features that support rather than replace creative and critical engagement. Without such refinements, the long-term integration and educational impact of AI chatbots will likely remain limited.

What are the future prospects and innovations of AI chatbots on students' mental health care?

The utilization of AI chatbots by students to enhance their mental health signifies an innovative solution to systemic deficiencies, particularly the increasing disparity between the number of mental health specialists and the

growing global need. Advanced technologies, including machine learning (ML) and natural language processing (NLP), are set to transform chatbots from mere information providers into platforms that offer highly customized assistance (Asimolowo, 2025; Seotan & Samuel, 2025). AI chatbots significantly enhance access to mental health support for students who may otherwise remain unsupported, by being perpetually available and unaffected by cost, geography, or social stigma. The continuous availability of services notably advantages individuals hesitant to seek assistance owing to apprehension of judgment or logistical challenges. With continuous advancements in machine learning and natural language processing, future AI chatbots are anticipated to offer not merely generic advice but also nuanced, personalized assistance. Intelligent adaptability to each user's learning style, emotional condition, and cultural context enables these tools to swiftly modify interventions in real time, hence enhancing their effectiveness as both academic and mental health aids. The integration of emotional AI enables the detection and response to emotional cues, including nuanced elements such as sarcasm or culturally specific expressions, hence enhancing the relevance and believability of chatbots. The integration of emotional recognition with advanced language models facilitates more compassionate and accurate evaluations of student needs and dangers, including indicators of depression.

The emergence of AI chatbots as an effective solution for scalable support systems originates from the convergence of two primary global challenges: the increasing incidence of student mental health concerns and the persistent deficit of mental health experts. This simultaneous demand creates a structural service deficit that traditional, resource-constrained institutions find challenging to address. AI chatbots effectively bridge this gap due to their scalability, perpetual availability, and minimal marginal delivery costs, making them particularly appealing in educational settings with extensive student populations. Emerging studies indicate that these tools are dynamic and possess the potential to develop into more advanced resources. This advancement is facilitated by developments in machine learning (ML), natural language processing (NLP), and emotional AI, which enhance personalization, emotional subtleties, and cultural adaptability. Gradually, iterative user feedback loops and data-driven design improvements can evolve existing chatbots from mainly reactive crisis-response instruments into proactive mental health companions that monitor well-being, identify early warning signs, and suggest targeted interventions. For example, Gabrielli et al. (2021) found that the Atena chatbot significantly reduced stress and anxiety, particularly in students with high initial anxiety. Additionally, the chatbot promoted improved self-reflection, emotional awareness, and mindfulness. The high user engagement rate (78 contacts on average over a four-week period) suggests strong receptivity and allows for further improvements in chatbot functionality and design.

The scalability of chatbots positions them as a strategic adjunct to human-delivered care, rather than a substitute, serving successfully as a triage and ongoing support mechanism that allows mental health experts to focus on high-severity situations. Furthermore, their anonymity and stigma-minimizing interface can enhance involvement among students who might otherwise refrain from seeking assistance. Nonetheless, actualizing this potential necessitates addressing enduring challenges in precision, emotional intelligence, ethical protection, and integration with current mental health systems. Additionally, De Nieva et al. (2020) investigated how the Woebot chatbot might be used to reduce stress associated with schoolwork. Students gave it positive reviews for its sympathetic responses and assisting strategies. However, some limitations were acknowledged, such as occasional errors in chatbot responses. These limitations highlight the need for ongoing innovation to improve contextual understanding and response accuracy in conversations mediated by AI. Students reacted favorably to Woebot's sympathetic conversations and helpful techniques, indicating that the chatbot may create a significant and therapeutic connection, a crucial element that enhances engagement and efficacy. This corresponds with extensive research demonstrating that Woebot may rapidly establish a robust emotional bond with users (Darcy, Daniels, Salinger, Wicks, & Robinson, 2021).

4.2. Implication of the Study

AI has significant potential in enhancing students' academic performance. However, student mental health has been proven to impact their performance. There is a need to support students' mental health. Therefore, this study explores the potential of chatbots in supporting students' mental health. The "how" of chatbots in supporting students' mental health, as examined in this study, will provide insights to stakeholders in education regarding the various mental health issues that chatbots can address, enabling the development of appropriate chatbot tools for educators. Teachers will be able to adapt their teaching strategies to accommodate students' diverse backgrounds using AI tools. Additionally, the future prospects of this research will inform government and educational stakeholders on how advanced AI chatbots can influence students' emotional well-being and engagement with learning.

4.3. Limitations

The search keywords were limited to the article title fields only. The systematic review included AI chatbots' effect on students' mental health care. Other limitations included publication bias (2020 to 2025) and language bias. Only articles written in English were selected and reviewed. The review was further limited to specific databases and did not include other important search databases, and this limitation was considered in the recommendations for future research.

5. CONCLUSION AND RECOMMENDATION

The study disclosed that students' mental health care can be supported with AI chatbots. The mental health of students has been positively impacted by a multitude of AI chatbots. AI chatbots have the potential to effectively manage specific disorders, such as depression, promote learning autonomy, reduce frustration, ameliorate anxiety symptoms, lower perceived stress levels, enhance well-being, and identify early indicators of mental challenges in students. These examples unequivocally illustrate the efficacy of AI chatbots in promoting the mental well-being of students. Consequently, to improve students' mental health, AI chatbots should be incorporated into existing school platforms or applications that students use. Additionally, to guarantee the confidentiality and effectiveness of students, educators must address ethical considerations associated with AI, such as data protection and permission. Stakeholders and policymakers should encourage the use of AI chatbots in schools by providing the necessary resources for teachers to implement them among students. Future research may explore the application of AI chatbots in the treatment of current mental health disorders among students and their enduring effects on this population. Furthermore, the validity of the effectiveness of AI chatbots in students' mental healthcare can be further established by researchers employing other significant databases to investigate their efficacy.

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