

Nursing Students' Experiences with Large Language Models in Academic Writing: A Qualitative Systematic Review Based on the Technology Acceptance Model

Xiaoyu Wang

Zhengzhou University

Xin Wang

wangxinsfyy@126.com

Zhengzhou University

Lele Yang

Zhengzhou University

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Abstract

Background

Large language models are increasingly used in healthcare. Nursing students need to strengthen academic writing with such technologies, but existing qualitative evidence is fragmented. To synthesize qualitative evidence on nursing students' experiences using large language models for academic writing to inform future education.

Methods

PubMed, Embase, CINAHL, Web of Science, Cochrane Library, CNKI, Wanfang Data, VIP Database, and SinoMed were searched for relevant qualitative studies from database inception to January 22, 2026. The JBI Critical Appraisal Checklist for Qualitative Research was used to evaluate study quality, and findings were synthesized using the JBI meta-aggregation approach.

Results

A total of 11 studies were included. Thirty-nine findings were extracted, grouped into 13 categories, and further synthesized into 5 synthesized findings: perceived usefulness; perceived ease of use and usage practices; perceived risks and limitations; external factors; and the formation of behavioral intention.

Conclusion

Nursing students generally hold positive attitudes toward using large language models for academic writing, while expressing concerns about content quality and ethical risks. Future efforts should include systematic training and standardized usage guidelines, as well as measures to emphasize the irreplaceable role of humanistic care and clinical judgment in nursing.

Introduction

The Technology Acceptance Model (TAM) is a classic theoretical framework for explaining users' technology acceptance behavior [1]. It aims to explain and predict individual acceptance of information technology and to analyze various factors influencing users' decisions to adopt or reject new technologies. According to the model, external variables influence an individual's behavioral intention by affecting perceived usefulness and perceived ease of use, thereby predicting actual usage behavior. Large language models (LLMs), a significant branch of artificial intelligence (AI), leverage deep learning techniques to systematically process and learn from vast amounts of multi-source textual data, thereby building powerful language understanding and generation capabilities [2]. In recent years, LLMs have been increasingly applied in various medical fields [3]. Nursing students are the future cornerstone of

nursing research and clinical practice. Therefore, they must not only master solid professional knowledge but also become adept at utilizing transformative technologies such as AI. Academic writing is a core competency for nursing students but often presents numerous challenges [4]. AI has shown significant potential in enhancing academic writing efficiency [5]. A thorough exploration of nursing students' experiences in using LLMs for academic writing is crucial for refining nursing curricula, developing targeted training programs, and enhancing students' adaptability and professional competence within the digital healthcare environment. Although several qualitative studies have explored these experiences among nursing students, individual studies are often insufficient to fully capture their authentic perceptions. Therefore, this study adopts the JBI meta-aggregation approach with the aim of more comprehensively examining nursing students' experiences of using LLMs for academic writing, in order to provide a reference for future training and the development of digital health.

Methods

This qualitative systematic review was conducted using the JBI meta-aggregation approach, in accordance with the JBI guidelines for qualitative evidence synthesis [6].

Search Strategy

A comprehensive literature search was conducted across nine electronic databases: PubMed, Web of Science, Embase, Cochrane Library, CINAHL, CNKI, Wanfang Data, VIP, and SinoMed. The search period spanned from the inception of each database to January 22, 2026 [see Additional file 1] .

Eligibility Criteria

Inclusion and exclusion criteria were formulated based on the PICoS framework. The inclusion criteria were: (1) Population: Undergraduate and postgraduate nursing students; (2) Phenomena of Interest: Students' experiences, perceptions, attitudes, and views regarding the use of LLMs in academic activities; (3) Context: Contexts within higher nursing education that explicitly involve academic writing, scientific research, or research-related tasks; (4) Study design: Qualitative studies, including descriptive qualitative studies, grounded theory, phenomenology, ethnography, as well as the qualitative components of mixed-methods studies.

The exclusion criteria were: (1) Duplicate publications; (2) Articles not written in English or Chinese; (3) Full text unavailable; (4) Qualitative data that could not be separated or extracted from mixed-methods studies.

Study Selection

Two researchers, both trained in evidence-based methodology, independently screened literature and extracted data, then cross-checked. Disagreements were resolved by consulting a third researcher.

EndNote was used to remove duplicates and conduct initial title/abstract screening. Potentially relevant full texts meeting inclusion criteria were retrieved and underwent a second screening to finalize included studies.

Quality Appraisal

Two researchers independently assessed the methodological quality of the included studies using the Joanna Briggs Institute (JBI) Critical Appraisal Checklist for Qualitative Research [6]. Only studies graded as Level A or B were included in this synthesis. Discrepancies in the appraisal results between the two researchers were resolved through discussion or by consulting a third reviewer.

Data Extraction and Analysis

Data extraction was performed independently by two authors, and a third author subsequently verified the completeness and accuracy of the extracted data. Any disagreements were resolved through iterative discussions among the three authors until a consensus was reached.

Members of the research team repeatedly read the included studies to grasp the overall context and understand the original authors' analyses and interpretations. The JBI process was strictly followed: findings were aggregated, categorized, and synthesized based on the original study data, without introducing subjective interpretations.

Results

Study Selection Results

Eleven studies met the inclusion criteria and were incorporated into this systematic review [7-17]. The screening and selection process is illustrated in Figure 1.

Study Characteristics

The characteristics of the included studies are summarized in Table 1.

Quality Assessment

Based on the JBI Critical Appraisal Checklist for Qualitative Research,⁶ the quality scores of the 11 included studies ranged from 6 to 9. And two studies were rated as Level A, while the other nine studies were rated as Level B (Table 2).

Main review findings

Category formation adhered strictly to the JBI aggregative synthesis method, with categories emerging naturally from the similarity of the original findings. The TAM served as an organizing framework for presenting the results, rather than as a guiding framework for coding or aggregation. The dimensions of

TAM were applied after the categories had been formed to aid in understanding and presenting the findings. The analysis results are shown in Table 3.

Synthesis of Findings

Perceived Usefulness

This synthesized finding reflects nursing students' positive perceptions of LLM usefulness for academic writing, including academic functional support, enhanced research efficiency and writing quality, and cognitive and emotional empowerment. It comprises 3 categories derived from 10 findings.

Academic Function Support

Large language models provide multi-scenario, full-process support for academic writing for nursing students. These tools offer precise language translation and analysis, effectively reducing barriers in reading foreign-language literature. For complex theoretical systems and professional concepts within the nursing discipline, LLMs can provide structured explanations and logical clarifications, assisting students in deepening their understanding and establishing knowledge connections. In addition, through literature summarization and information extraction functions, they help students quickly grasp the main arguments and logical structure of papers, thereby enhancing reading efficiency.

"It can extract keywords from my questions and explain complex concepts from different angles, helping me grasp knowledge points more quickly." [8]

"When reading literature, I might ask it to read on my behalf, analyze the structure of the article, and extract the content of the literature, which really speeds up my reading." [16]

Enhancing Efficiency and Output

Building on the aforementioned academic support functions, LLMs enhance research efficiency and writing quality. These tools can assist with literature screening, content summarization, and format standardization, enabling students to focus more on research design and content refinement, thereby optimizing time allocation and improving research efficiency. Regarding writing quality, LLMs can polish text and strengthen logical flow, particularly benefiting non-native English speakers by correcting grammatical errors and refining expressions, thus enhancing overall academic writing quality.

"For my research topic, I would first ask generative AI to provide an overview, and then look for research gaps to explore." [7]

"When writing papers, AI helps me organize my thoughts and build a framework." [8]

"After using AI tools, my time utilization efficiency significantly improved... (AI tools) check spelling errors in academic writing and correct English expressions using grammar checking tools." [13]

Cognitive and Emotional Empowerment

Large language models contribute to cognitive expansion and provide emotional support during the academic writing process. When students encounter mental blocks or unclear logic, LLMs can provide diverse perspectives and structural suggestions, helping them overcome thinking limitations and clarify their argumentation framework. Simultaneously, they offer immediate academic guidance on specific research questions. Additionally, to address the common sense of isolation in academic writing, LLMs can provide sustained psychological support, alleviating negative emotions to some extent and maintaining students' research motivation.

"When I really have no ideas, it can give me some inspiration." [14]

"Its answers are often more comprehensive than what I think of myself, and can inspire me to think about problems in new ways." [8]

"ChatGPT gave me a sense of comfort, making me feel like I'm not alone." [9]

Perceived Ease of Use and Usage Practices

This synthesized finding reveals students' positive perceptions of LLM ease of use and how these perceptions translate into actual use. LLMs were considered easy to operate with a low learning curve, prompting trial and adoption; as usage accumulated, they became integrated into daily academic workflows, leading to high usage stickiness. It comprises 2 categories derived from 4 findings.

Ease of Operation

Nursing students generally perceive LLMs as having a low barrier to entry. Their intuitive interfaces and natural language-based interaction methods make operation simple and straightforward, requiring no professional background or specialized training. These tools also support cross-device and cross-platform access [12], enabling integration into diverse learning environments. Meanwhile, they respond rapidly and can handle complex tasks fluently through multi-turn dialogues, providing an efficient, human-like interactive experience.

"Most large language models are quite easy to use and don't require any specialized knowledge... Large language models can handle complex problems in a more interactive, concrete, and human-like way." [12]

Usage Stickiness

In actual academic activities, LLMs have demonstrated high usage frequency and user dependence, with many students viewing them as normalized auxiliary tools in the academic writing process. In core areas such as thesis writing, literature review, and research design, these tools are widely and frequently applied, exhibiting a normalized, throughout the entire process usage pattern.

"It's very popular and super convenient to use... I use it (AI) almost every day." [7]

"I still actively use it (ChatGPT) today, whether for content creation or daily life, I can't do without it." [13]

Perceived Risks and Limitations

This synthesized finding reflects students' vigilant attitudes toward LLM technical limitations and potential risks even while actively using them. It comprises 3 categories derived from 9 findings.

Content Quality Risks

Students express concerns about the credibility of content generated by LLMs. Some LLM outputs are of low quality, and generated content may contain factual errors [11], fabricated references, or information inaccuracies [17], which can significantly compromise their usability in academic writing. In addition, deviations in the model's understanding of instructions can lead to outputs that do not meet expectations [13], increasing the cost of manual verification and correction, diminishing students' trust in the tools and their willingness to use such technologies.

"The answers given were not grounded in reality; they were all generalities." [14]

"The long texts it generates have strange writing styles and messy formatting." [8]

Systemic Knowledge Limitations

Existing LLMs have limitations in their knowledge bases, including outdated databases and incomplete coverage of specialized fields, resulting in outputs lacking timeliness and disciplinary specificity. In addition, the current lack of LLMs specifically designed for the nursing discipline [8] means that general-purpose models have limited utility when addressing highly specialized academic needs.

"The examples generated by AI included clinical guidelines that have been superseded." [9]

"When I ask it some more academic questions, I feel it can't answer them... Its answers are very general and don't meet my requirements." [16]

Irreplaceability of Humans

Over-reliance on LLMs may weaken students' academic abilities, independent thinking skills, academic innovation, and critical thinking [11,14]. Core cognitive activities required for academic research, such as critical thinking and logical reasoning, must still be performed by humans [9,17]. Additionally, the humanistic care unique to nursing relies on subtle observation of and empathetic interaction with patients' emotions, cultural backgrounds, and non-verbal cues-elements that current technology cannot truly understand or replicate.

"Its answers are so fast and comprehensive that they stop me from thinking actively." [8]

"Face-to-face communication allows nurses to capture the deeper meaning in conversations, the subtext of patients' words, and non-verbal signals." [17]

External Factors

This synthesized finding reveals external contextual factors influencing LLM use, including facilitating influences, normative ethical constraints, and resource and technical barriers. It comprises 3 categories derived from 11 findings.

Social Environmental Influence

Nursing students' exposure to and use of LLMs are significantly influenced by their academic and social environment. The rapid development of AI technology and its widespread media coverage have created a positive atmosphere for technology adoption. Meanwhile, the practical application and recommendations of peers and mentors in academic activities serve as important references and direct drivers for students adopting these tools, promoting their prevalence in academic writing scenarios.

"Various media were reporting on the potential applications of large language models in different fields, which made me curious... Many of the outstanding classmates or role models around me were using ChatGPT and Bing Chat... When I encounter research difficulties, my graduate supervisor often suggests asking large language models." [12]

Normative and Ethical Constraints

As emerging academic tools, LLMs face underdeveloped policies and academic norms regarding their application, raising multiple concerns. Educators worry about potential fairness issues, which may exacerbate inequalities in educational resources and capabilities [14]. Some institutions [14], faculty members [12], and research organizations [12] explicitly restrict or prohibit the use of AI tools in academic output. Meanwhile, academia remains divided on whether their use constitutes academic misconduct and how to define reasonable boundaries. Additionally, issues such as data security, privacy concerns, and ethics have become significant considerations in decisions made by both students and faculty regarding LLM use.

"If an article is completely written by artificial intelligence, it might compromise originality and lead to misconduct." [7]

"I use AI to help write papers, but I don't know if the platform will store my content, or even if there's a risk of leakage... When using AI for decision-making, ethical issues must be considered-both protecting patient privacy and ensuring its suggestions comply with ethical norms." [8]

Resource and Technical Barriers

The use of LLMs faces practical constraints related to insufficient resources and technical support. Students commonly report a lack of systematic, professional training and guidance, which limits their

ability to apply LLMs effectively [9]. On the technical front, users face multiple obstacles including frequent tool updates, response delays [14], financial costs, poor internet connectivity, and access restrictions to mainstream models in some regions [12]. These factors collectively limit the scenarios in which LLMs can be used in academic practice.

"Although Peking University has released tutorials on using AI, the content is too general. I think there should be AI usage guidelines tailored for the nursing profession... AI tools update too quickly; we constantly relearn how to use new tools." [8]

"I think cost is an issue... The better the AI, the higher the cost... In rural areas, there's a significant gap in internet access." [11]

Formation of Behavioral Intention

This synthesized finding reveals complex and somewhat ambivalent behavioral intentions formed under the combined influence of the above perceptions and external factors. Positive benefit pursuit is a primary driver, while fear of falling behind technologically creates pressure, resulting in dual positive and anxiety-driven motivation that may contribute to higher behavioral intention. It comprises 2 categories derived from 5 findings.

Positive Drivers

Large language models enhance students' willingness to use them by providing substantial academic assistance and psychological support. Most students recognize their value in enhancing academic writing efficiency and quality, believing that mastering these tools helps strengthen their future competitiveness in the nursing field. Simultaneously, LLMs offer timely support in coping with heavy academic tasks, helping to alleviate stress and maintain mental health.

"I discovered that many healthcare institutions are recruiting talent capable of applying AI in nursing research." [8]

"AI makes me feel less stressed when completing assignments, protecting my mental health." [11]

Anxiety-driven Drivers and Stress Factors

Alongside positive drivers, an anxiety-driven mechanism stemming from external pressure was also identified. Some students experience anxiety about falling behind due to the rapid pace of technological change. Concurrently, the gradually forming usage norms within academic environments create implicit pressure, prompting students to use LLMs to avoid being placed at a disadvantage.

"If I don't use it (large language models), I might fall behind." [12]

"If everyone else is using these tools and you're not, it feels very stressful." [7]

Discussion

This qualitative systematic review synthesized the experiences of nursing students using large language models (LLMs) for academic writing.

Perceived usefulness and perceived ease of use as the foundation for positive experiences

The synthesized findings of this review indicate that the majority of nursing students recognized the positive role of LLMs in enhancing academic writing and perceived these tools as relatively convenient to use, expressing generally favorable attitudes toward them. The perceived usefulness and ease of use of a technology are key factors influencing user acceptance; efficient and user-friendly technologies tend to foster more positive usage attitudes [18], which is consistent with findings from other studies in health-related fields [19,20]. It is therefore suggested that efforts to promote LLMs could prioritize demonstrating and providing training on core functions that directly reflect their usefulness and ease of use, thereby helping students quickly develop an awareness of the tools' value and strengthening their behavioral intention to use them. In addition, nursing students described LLMs as a source of emotional support; the sense of companionship provided by LLMs during the often isolating and high-pressure academic writing process may also be an important factor influencing acceptance.

Examining the complex contexts and constraints surrounding LLM use

Although students held positive views on the practical value of LLMs, they expressed multiple concerns regarding the limitations of the technology, and some students exhibited tendencies such as over-reliance on the tools and insufficient awareness of data protection[21,22]. Because LLMs rely on large-scale training datasets with limited transparency [23], they may learn and reproduce biased and erroneous content [24], which is a particularly notable concern in healthcare settings [25]. Risk perception has been shown to significantly influence medical students' intention to use technology [19,26]; nursing students' acute awareness of such risks may be related to the nursing discipline's strong emphasis on evidence accuracy and patient safety. Furthermore, students found that general-purpose LLMs lack a specialized nursing knowledge base and perform in a limited manner when handling contextualized tasks such as nursing assessment and patient communication. This is consistent with other research indicating that current LLMs underperform in highly specialized medical scenarios due to a lack of domain-specific knowledge embedding [21]. To promote the effective application of LLMs in nursing education, developing specialized models tailored to the nursing discipline, rather than relying directly on generic tools, could be an important consideration.

Nursing students also expressed concerns that over-reliance on LLMs might weaken their independent thinking, critical thinking, and innovative capacity, while also pointing out that LLMs cannot truly empathize and are unlikely to replace the humanistic care that is essential in nursing practice. These concerns appear to reflect not only a fear of new technology but also reflections on professional identity and core competencies. Therefore, alongside the promotion of LLM tools, it may be important for

nursing educators to clearly convey that LLMs are intended to assist with learning and work rather than to replace nursing.

Coexistence of rational and anxiety-driven motivations: the formation mechanism of behavioral intention to use LLMs

The synthesized findings of this review suggest that nursing students' behavioral intention to use LLMs is influenced jointly by positive drivers and anxiety-driven drivers. On one hand, the role of these tools in assisting academic writing, alleviating academic pressure, and improving efficiency and competitiveness fosters positive attitudes among students [27,28]; attitude is an important determinant of behavioral intention [18], and this may generate a willingness to use LLMs proactively. On the other hand, as a globally disruptive technological transformation [19,29], artificial intelligence has generated widespread concern and anxiety [21]. Although anxiety is generally negatively associated with technology adoption [30], the present review indicates that in the context of LLM use for academic writing, anxiety may function as a positive driver of behavioral intention. A possible explanation is that students' anxiety is not directed at the technology itself but rather stems from a fear of being left behind and a fear of losing competitiveness, which may compel them to adopt LLMs; such behavioral intention appears to arise from passive pressure rather than from a recognition of value. When introducing new technologies in nursing education, attention could be given to the anxiety triggered by the social environment, and students could be supported in developing a rational perspective on technology use.

Implications for nursing education and academic writing

Nursing institutions could incorporate training that teaches students how to verify the authenticity of LLM-generated content and identify fabricated material. It may also be beneficial to explicitly inform students about the knowledge limitations and ethical issues of general-purpose LLMs in nursing, guide them to engage in critical and ethically informed interaction [31-33], prevent over-reliance, and uphold the academic norms of the nursing profession. Institutions and relevant bodies could consider developing nursing-specific guidelines for LLM use [34], using concrete scenarios to clarify the boundaries between appropriate use and academic misconduct. Requiring students to keep reflective logs after each instance of LLM use may help strengthen critical thinking training. Institutions could provide free access to LLM tools by subscribing to educational accounts, and could offer offline alternatives—such as locally deployed lightweight models—for students facing network or economic constraints. Educators could guide students to view anxiety about technological obsolescence rationally, emphasize the irreplaceability of humanistic care and clinical judgment in nursing, and help students shift from passive acceptance toward a more proactive attitude toward use.

Limitations

Limitations include language restriction (Chinese/English) and few level A studies; level B studies often lack reflexive clarity, potentially biasing findings. Future longitudinal or mixed-methods research could

examine evolving experiences to better inform LLM integration into academic writing and digital professional competence.

Conclusion

Through the JBI meta-aggregation approach for qualitative research, this review systematically examined nursing students' experiences of using LLMs in academic writing, encompassing perceived usefulness, perceived ease of use and usage practices, perceived risks and limitations, external factors, and the formation of behavioral intention. The findings suggest that nursing students generally hold favorable views regarding the supportive value of LLMs for academic writing, while also expressing concerns about risks related to data authenticity, academic integrity, and ethical norms. Future efforts may focus on developing targeted training that is both practical and normative, refining relevant usage guidelines, and supporting students in managing technology-related anxiety in a rational manner. This could further facilitate the appropriate integration of LLMs into nursing academic writing, improve students' user experiences, and effectively enhance their academic writing abilities.

Declarations

Ethical approval

This Study did not require ethical approval.

Consent for publication

Not applicable.

Availability of data and materials

All data generated or analysed during this study are included in this published article [and its supplementary information files].

Competing interests

The authors declare no competing interests.

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CRediT authorship contribution statement

X.Y.W. conducted the investigation, data curation, and formal analysis, wrote the original draft, and contributed to writing-review and editing. L.Y. contributed to conceptualisation, methodology, investigation, and formal analysis. X.W. contributed to conceptualisation, formal analysis, writing-review and editing, and supervision. All authors reviewed the manuscript.

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Tables

Table 1. Summary of study characteristics (In the "Study Characteristics" section)

Author	Country	Participants characteristics	Study design	Phenomena of interest	Principal findings
Jiang et al. (2026) [7]	China	16 full-time postgraduate nursing students	Descriptive qualitative study	Perceptions, attitudes, and needs regarding generative artificial intelligence among Chinese postgraduate nursing students	5 themes: performance expectancy; effort expectancy; social influence; usage attitude and behavior; constraints on generative AI application
Stratton-Maher & Kelly (2026) [8]	Australia	48 first-year undergraduate nursing students	Descriptive qualitative study	Experiences, challenges, and perceptions of nursing students using generative artificial intelligence in academic work	6 themes: initial confusion; skill enhancement; reliability assessment; academic integrity trade-offs; perceived future value; recognition of support needs
Aslan (2025) [9]	Turkey	13 postgraduate nursing students	Phenomenological study	Exploring postgraduate nursing students' practical experiences of using ChatGPT for seminar assignments	3 themes: opportunities; hesitation; suggestions for the future
Dabney & Denotto (2025) [10]	USA	77 undergraduate nursing students	Descriptive qualitative study	Experiences of undergraduate nursing students using artificial intelligence tools in research courses	4 themes: shift from initial to final impressions; advantages and limitations; ethical concerns; application of AI in healthcare
Jembu & Balang (2025) [11]	Malaysia	11 undergraduate nursing students	Descriptive qualitative study	How nursing students perceive the use of AI tools in academic writing	4 themes: advantages of AI adoption; perceived shortcomings; influencing

Author	Country	Participants characteristics	Study design	Phenomena of interest	Principal findings
					factors; and systemic barriers
Ma et al. (2025) [12]	China	8 undergraduates, 11 master's, 5 doctoral nursing students	Descriptive qualitative study	Perceptions and usage experiences of nursing students regarding large language models	3 themes: attitude; subjective norm; perceived behavioral control
Sağlam & Kalanlar (2025) [13]	Turkey	10 nursing master's and 5 nursing doctoral students	Descriptive qualitative study	Experiences of postgraduate nursing students using ChatGPT	4 themes: role of ChatGPT in public health nursing; concerns about ChatGPT use; advantages of ChatGPT application; future prospects of ChatGPT
Yuan et al. (2025) [14]	China	36 undergraduate nursing students	Phenomenological study	Perceptions of undergraduate nursing students regarding the strengths, weaknesses, opportunities, and threats of generative artificial intelligence	4 themes: strengths; weaknesses; opportunities; threats
Zheng et al. (2025) [15]	China	15 nursing master's students	Descriptive qualitative study	Application and perceptions of large language models among postgraduate nursing students	4 themes: application scenarios of large language models; external influencing factors; issues in LLM application; concerns about LLM application

Author	Country	Participants characteristics	Study design	Phenomena of interest	Principal findings
Liu et al. (2024) [16]	China	14 full-time nursing master's students	Descriptive qualitative study	Real-life experiences of master of nursing students using artificial intelligence-generated content tools	3 themes: strong interest in AIGC tools; perceived benefits of using AIGC tools; concerns about using AIGC tools
Summers et al. (2024) [17]	Australia	13 first-year and second-year nursing students	Descriptive qualitative study	Views and perceptions of nursing students on the application and integration of generative artificial intelligence tools in academic studies	6 themes: educational impact of AI tools; construction of equitable learning environments; ethical considerations in AI use; pathways for technology integration; safety and practicality; generational differences

Table 2. Quality appraisal of the included qualitative studies (In the "Quality Assessment" section)

Study	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	Quality Grade
Jiang et al. (2026) [7]	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	A
Stratton-Maher & Kelly (2026) [8]	Y	Y	Y	Y	Y	N	N	Y	Y	Y	Y	B
Aslan (2025) [9]	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	A
Dabney & Denotto (2025) [10]	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	B
Jembu & Balang (2025) [11]	U	Y	Y	Y	Y	N	N	Y	Y	Y	Y	B
Ma et al. (2025) [12]	Y	Y	Y	Y	Y	N	N	Y	Y	Y	Y	B
Sağlam & Kalanlar (2025) [13]	Y	Y	Y	Y	Y	N	N	Y	Y	Y	Y	B
Yuan et al. (2025) [14]	Y	Y	Y	Y	Y	N	N	Y	Y	Y	Y	B
Zheng et al. (2025) [15]	U	Y	Y	Y	Y	N	N	Y	Y	Y	Y	B
Liu et al. (2024) [16]	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	B
Summers et al. (2024) [17]	Y	Y	Y	Y	Y	N	N	Y	Y	Y	Y	B

Y=yes; N=no; U-unclear.

JB1 critical appraisal checklist for qualitative research.

Q1 = Is there congruity between the stated philosophical perspective and the research methodology? Q2 = Is there congruity between the research methodology and the research question or objectives? Q3 = Is there congruity between the research methodology and the methods used to collect data? Q4 = Is there congruity between the research methodology and the representation and analysis of data? Q5 = Is there congruity between the research methodology and the interpretation of results? Q6 = Is there a statement locating the researcher culturally or theoretically? Q7 = Is the influence of the researcher on the research, and vice-versa, addressed? Q8 = Are participants, and their voices, adequately represented? Q9 = Is the research ethical according to current criteria or, for recent studies, is there evidence of ethical approval by an appropriate body? Q10 = Do the conclusions drawn in the research report from the analysis, or interpretation, of the data?

Table 3. Data synthesis (In the "Main review findings" section)

Extracted findings	Categories	Synthesized findings
1. Assisting with literature reading	Academic Function Support	Perceived Usefulness
2. Providing language support		
3. Assisting with concept comprehension		
4. Saving research time	Enhancing Efficiency and Output	
5. Improving research efficiency		
6. Enhancing writing quality		
7. Broadening thinking	Cognitive and Emotional Empowerment	
8. Inspiring ideas		
9. Providing timely guidance		
10. Offering support and companionship		
11. Convenient to use	Ease of Operation	Perceived Ease of Use and Usage Practices
12. Simple to operate		
13. High actual use frequency	Usage Stickiness	Perceived Risks and Limitations
14. Being widely used		
15. Low quality of output content	Content Quality Risks	
16. Questionable authenticity of output content		
17. Misunderstanding of instructions in output content		
18. Outdated system database	Systemic Knowledge Limitations	

Extracted findings	Categories	Synthesized findings
19. Insufficient depth of professional databases	Irreplaceability of Humans	
20. Lack of a specialized nursing knowledge base		
21. Impeding independent thinking and innovative ideation		
22. Cannot replace human critical thinking		
23. Inability to effectively convey emotions		
24. Positive media coverage	Social Environmental Influence	External Factors
25. Influence from peers or people around		
26. Restrictions imposed by schools, instructors, and academic journals	Normative and Ethical Constraints	
27. Questioning the fairness of use		
28. Academic integrity		
29. Ethical issues		
30. Privacy and data security		
31. Long response time	Resource and Technical Barriers	
32. Network limitations		
33. Access restricted by geographic location or country		
34. Lack of relevant training		
35. Alleviating academic stress	Positive Drivers	Formation of Behavioral Intention

Extracted findings	Categories	Synthesized findings
36. Beneficial to mental health	Anxiety-driven Drivers and Stress Factors	
37. Enhancing competitiveness		
38. Fear of being left behind by new technologies		
39. Fear of losing competitive advantage		

Figures

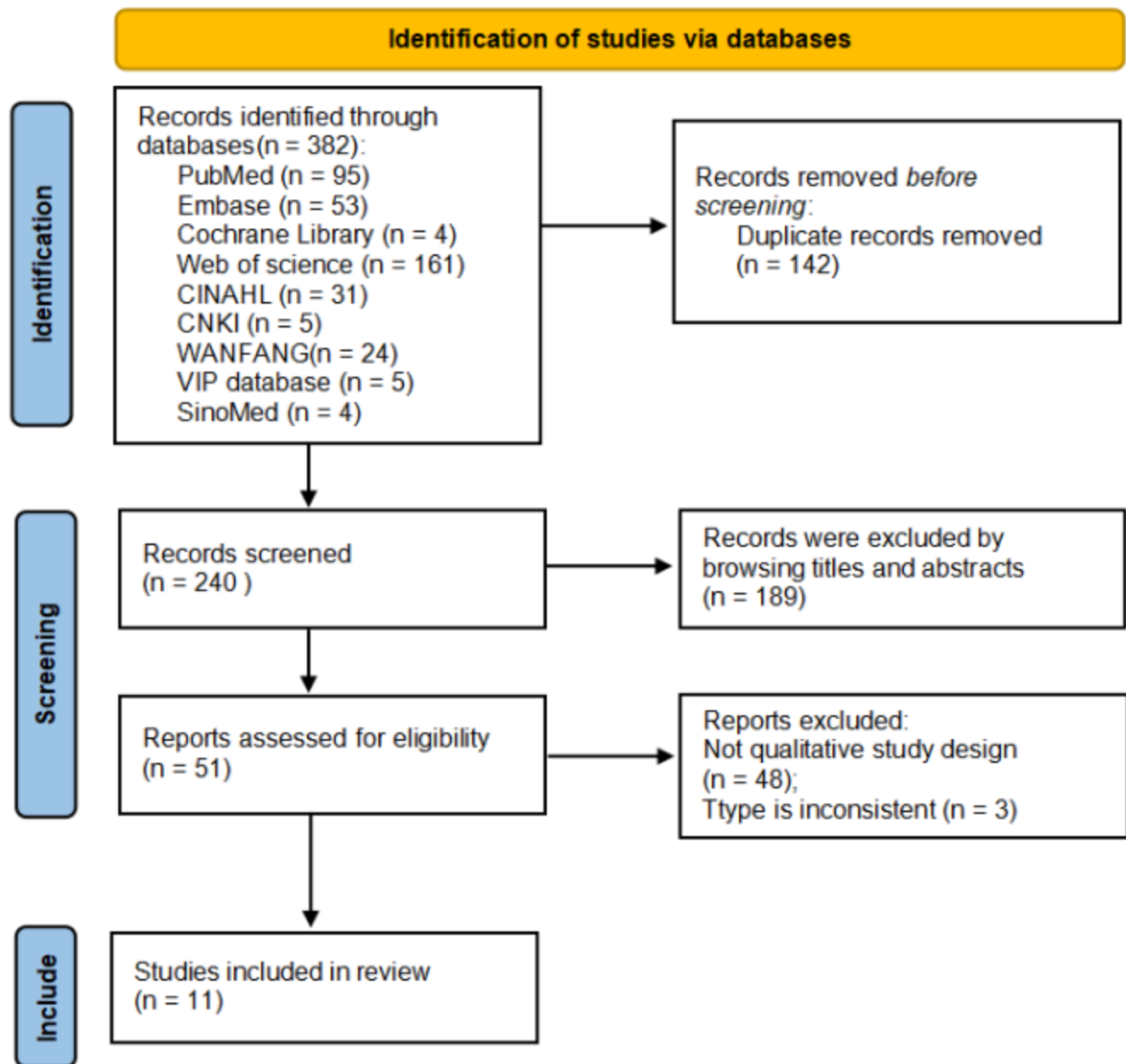


Figure 1

PRISMA flow chart of paper selection process

Supplementary Files

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- [Additionalfile1.docx](#)