The Readiness of Final-Year Nursing Students' Clinical Competency and Intention to Work in Clinical Setting: A Systematic Review

Thandar Soe @ Sumaiyah Jamaludin[1], Damia Ilias[2], Mohd. Said Nurumal[3]*, Muhammad Kamil Che Hasan[1], Kyu Kyu Win[4] & Heri Ariyanto[5]

[1]Department of Medical Surgical Nursing, Kulliyyah of Nursing International Islamic University, Pahang, Malaysia
[2]Obstetrics and Gynecology Ward, Thomsan Hospital,Selangor, Malaysia
[3]Department of Critical Care Nursing, Kulliyyah of Nursing, International Islamic University, Pahang, Malaysia
[4]UCSI University and UCSI Hospital, Negeri Sembilan, Malaysia
[5]Department of Nursing, STIKes Muhammadiyah Ciamis, Indonesia

ABSTRACT

Background: The transition from student to professional nurse requires not only academic preparation but also a high level of clinical competency, practical readiness, and commitment to clinical work. This systematic review examines the clinical competency, readiness for practice, and intention to work in clinical settings among final-year nursing students.

Methods: A comprehensive literature search was conducted across Scopus, IIUM Discovery Service, and Google Scholar using Boolean operators, covering the period from 2017 to 2023. Following the PRISMA guidelines, thirty-one relevant articles were selected and critically appraised using validated tools, including the Joanna Briggs Institute (JBI) checklist, Critical Appraisal Skills Programme (CASP), and the Mixed Methods Appraisal Tool (MMAT). Three key themes emerged from this review: Clinical Readiness for Practice, Clinical Competence, and Intention to Work and Future Employment.

Results: The findings indicate that while many final-year nursing students possess adequate clinical knowledge and basic technical skills, significant variations exist in their ability to confidently apply these competencies in real-world clinical settings. Factors influencing clinical readiness and competence include the extent of hands-on clinical exposure, the quality of supervision and mentorship, frequency of skill practice, students' self-confidence, and perceived workplace support. Furthermore, students' intention to pursue clinical roles after graduation is closely linked to these experiences and perceptions.

Conclusion: This review provides essential insights for nursing educators and policymakers, emphasizing the need to optimize clinical education, enhance the quality of clinical placements, and strengthen support systems to better prepare nursing students for seamless entry into the clinical workforce.

Keywords: Nursing student; Clinical competency; Readiness; Intention to work

INTRODUCTION

The clinical readiness of final-year nursing students is a crucial determinant in ensuring the delivery of safe, effective, and high-quality healthcare. With increasing demands on healthcare systems globally driven by aging populations, chronic disease prevalence, and workforce shortages there is growing pressure on nursing graduates to be clinically ready immediately upon entering the workforce (1). However, there is a persistent gap between academic preparation and the realities of clinical practice, as recent studies have indicated concerns from both employers and students regarding the adequacy of clinical competencies and readiness (2–5).

To address this issue, the current literature review is guided by two main objectives: (a) to identify literature related to nursing students' clinical readiness toward clinical skills and (b) to review literature on the assessment of clinical competency levels in nursing students. These objectives aim to illuminate how well nursing programs are preparing students to perform in clinical settings and how competency is being measured. In line with these objectives, the review seeks to answer the following research questions: (i) What are the literature findings related to students' clinical readiness toward clinical skills? and (ii) What does the reviewed literature reveal about the assessment of clinical competency levels in nursing students?

Clinical competency encompasses a combination of theoretical knowledge, psychomotor skills, soft skills such as communication skills, problem solving skills, critical thinking, and professional attitudes all essential components for safe and effective patient care (6–8). A growing body of research has focused on various methods of assessing these competencies, such as simulation-based learning, objective structured clinical examinations (OSCEs), and standardized checklists which consisted of psychomotor skills and soft skills (9). Nevertheless, inconsistencies in definitions and assessment practices persist across educational institutions (10).

Moreover, another emerging area of interest is the relationship between students perceived and actual clinical competence and their intention to pursue employment in clinical settings after graduation. Factors such as clinical confidence, self-efficacy, support during placements, and perceived workplace culture have been shown to influence students' career decisions (11,12). Understanding these associations is vital not only for academic institutions but also for workforce planning in healthcare sectors facing increasing staff turnover and burnout.

Despite continuous curricular reform, many nursing students still report feeling clinically unready, particularly in areas such as clinical reasoning, managing complex patients, and interprofessional communication (13,14). Additionally, feedback from clinical supervisors and newly employed nurses indicates a disparity between expected and actual performance in the early months of clinical work (5). Therefore, a systematic synthesis of current literature is essential to provide evidence-based insights that inform educational strategies, enhance curriculum design, and ultimately strengthen the clinical readiness of future nursing professionals.

METHODS

Search Strategy

This systematic review followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (15). A comprehensive search was conducted across three electronic databases: Scopus, IIUM Discovery Service, and Google Scholar to identify relevant studies related to the clinical readiness, clinical competency, and intention to work in clinical settings among final-year nursing students.

The search was conducted using the following keywords and Boolean operators: "final year nursing students" AND "clinical competency", "clinical readiness" OR "readiness for practice", "intention to work" AND "nursing education", "factors influencing nursing students' career choices" OR "nursing workforce readiness".

The search was limited to articles published between January 2017 and December 2023 to ensure the inclusion of current evidence. Additional filters were applied to select only peer-reviewed articles. Duplicate records were identified and removed using EndNote software. Reference lists of the included studies were also manually screened to identify additional relevant articles.

Screening Process

The initial search yielded 17,800 records from

database that mentioned above. After removing 2,189 duplicates, 15,611 articles remained for screening. Titles and abstracts were screened independently by two reviewers. Full-text articles were retrieved for potentially relevant studies, and any disagreements between reviewers were resolved through discussion or consultation with a third reviewer.

After full-text screening, 31 articles met the inclusion criteria and were included in the final analysis. The details of included studies are shown in **Table 1**. The screening process is illustrated in the PRISMA 2020 flow diagram **(Figure 1).**

Inclusion Criteria

- Articles published in English between 2017 and 2023.
- Studies involving final-year nursing students.
- Studies conducted in clinical, educational, or related nursing practice settings.
- Studies assessing clinical readiness, clinical competency, or intention to work in clinical settings.
- Study designs including quantitative, qualitative, mixed methods, and systematic reviews.
- Studies using validated assessment tools such as surveys, interviews, or focus groups.

Exclusion Criteria

- Studies unrelated to clinical settings or clinical practice.
- Studies not assessing clinical readiness, clinical competency, or intention to work.
- Articles published in languages other than English.

Quality Assessment

All included studies were critically appraised for methodological rigor:

- Quantitative studies (n = 19) were assessed using the Joanna Briggs Institute (JBI) Critical Appraisal Checklist.
- Qualitative studies (n = 9) were assessed using the Critical Appraisal Skills Programme (CASP) Qualitative Checklist.
- Mixed-method studies (n = 2) were assessed using the Mixed Methods Appraisal Tool (MMAT), version 2018.
- Systematic review (n = 1) was assessed using the CASP Systematic Review Checklist.

Each tool evaluated aspects such as study design, sample selection, data collection, analysis, ethical considerations, and the validity of the results. Studies with significant methodological weaknesses were excluded during the quality appraisal process.

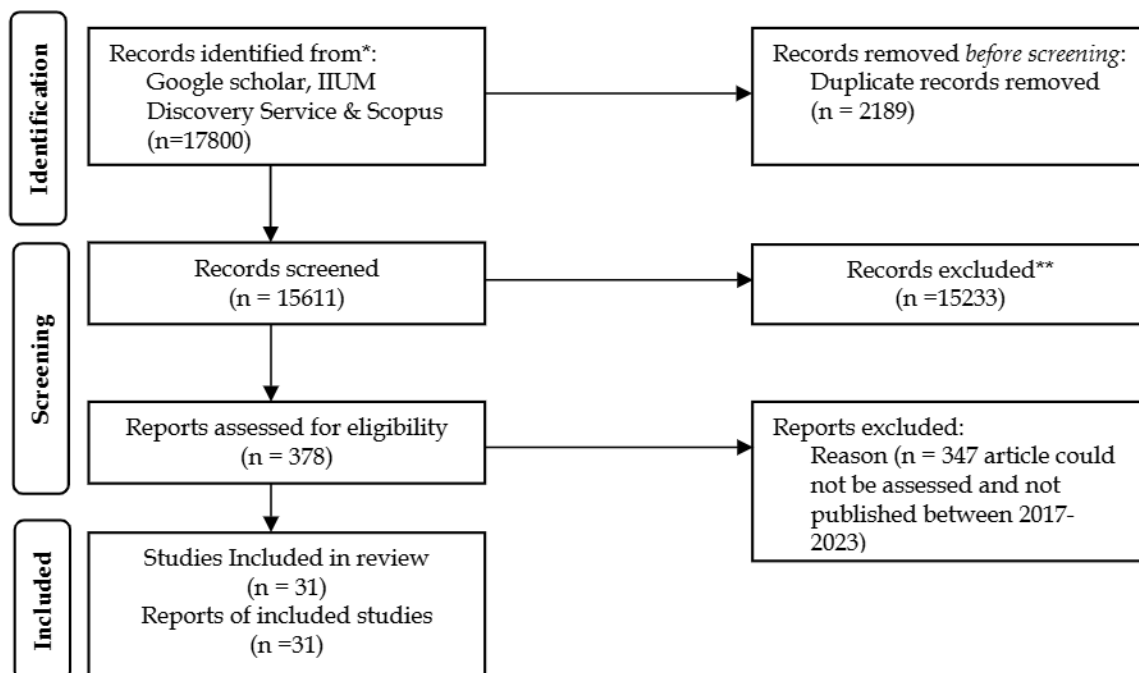**Figure 1:** The review process using PRISMA 2020

Table 1: Included Studies

No	Author/year/country	Study Design	Methodology	Sample	Objective	Main Finding	Remarks
1	**The clinical learning environment, supervision and future intention to work as a nurse in nursing students: a cross-sectional and descriptive study** Zhang et al, 2022 China	This was a cross-sectional observation-nal study among a convenience sample of nursing students participating in clinical placement in China.	A convenience sample was recruited from 6 tertiary hospitals in China, of each contains above 1000 patient beds and about 200 nursing students be enrolled for clinical practices per year. In China, the nurses are graded into four levels: Nurse 1 (1–2 years), Nurse 2 (3–5 years), Nurse 3 (6–10 years), Nurse 4 (10–20 years).	Conside-ring that invalid question-naires may occur due to lack of informa-tion and filling errors during the question-naire collection process, the sample size was relatively ideal to be 374–748, the final sample size is 660.	To examine nursing students' perception of clinical learning environment and mentoring in hospital where they perform their clinical placement and the connection of these factor with intention to work as a nurse once graduated.	Of the five scales in the CLES+T, 'Leadership style of the ward manager' scored the highest meanwhile 'Pedagogical atmosphere at the ward' scored the lowest. Nursing students with lower educational level, those supervised by fixed preceptor, and those intent to be a nurse in the future were significantly more satisfied with the CLES+T. Most of the nursing students are intent to work as a nurse in the future. CLES+T total scores and sub-dimensions (Premises of nursing on the ward) have significantly effectiveness on the intention to be a nurse in the future.	This study appears to be well designed and well conducted. The authors used validated research instruments to measure outcomes and appropriate statistical methods to analyze data. This study also attempted to control for potential confounders by analyzing the data using relevant variables. However, this study has some limitations. First, this study was conducted in a specific context (China), so the results may not be generalizable to other contexts. Second, this study did not examine the long-term effects of clinical internship experiences on nursing students' health. Finally, this study relies on self-reported data, which may be biased. Despite these limitations, this study provides valuable insight into nursing students' well-being in clinical settings and may help improve clinical nursing education.

2	Readiness for practice: The views of New Zealand senior nursing students Jamieson et al, 2019 New Zealand	A cross sectional survey design, using the Casey-Fink Readiness for Practice Survey ©, was utilized to described the phenomena of readiness for practice of senior New Zealand nursing students.	Permission to adapt the Casey-Fink Readiness for Practice Survey © for the New Zealand context was received by its creators (email communica-tion with Kathy Casey and Regina Fink, 17 September 2013). Minor adaptations were made to language, such as changing; physician to doctor, electronic record to patient notes, and clinical instructor to clinical lecturer. To ensure face validity in the New Zealand context the survey was tested with ten randomly selected senior students. No changes were made. The adapted survey consisted of two sections. Section one collected demographic data as well as information about the clinical practicum. The focus of section two was on clinical and relational skills, firstly asking students about the top three skills they are most uncomfortable doing. Secondly, students were asked to rate their confidence of managing	All senior nursing students, (n = 529), enrolled into their final third year clinical practicum (Transition to Practice course), from one nursing school, and across five semesters were invited to participate. Students repeating the practicum were excluded to avoid the duplicatio n of replies. Students were allocated to clinical areas that used either the Dedicated Education Unit (DEU) model of clinical teaching and learning or the Preceptors hip model to support students.	The aims of this study were to add of the body of literature about readiness for practice of senior nursing students and to validate the Casey-Fink Readiness for Practice Survey © 2008 in the New Zealand context	The response rate for the survey across five cohorts was 46% (n = 245). The majority of students were New Zealand European females aged 30 years or younger. Students felt they were confident with their professional responsibilities and considered that they had prepared well for the profession. They agreed that they were confident with their communication skills. Areas of concern were; caring for a dying patient and caring for more than four patients at one time. This study suggests that senior nursing students feel they are work ready. **Professional responsibilities.** The majority of respondents (97%–99%; n = 237–243) agree or strongly agree that they are confident and comfortable asking for help, using evidence to support their clinical decision making, problem solving and were able to identify patient safety risks. An area of concern was caring for a dying patient, with 38% (n = 93) noting that they were uncomfortable with this. The majority of respondents (89%–94%; n = 218–231) were not overwhelmed by ethical issues, had no difficulties about prioritizing patient care or documenting in the patient notes and few difficulties	The study focuses on senior nursing students in a New Zealand nursing program, revealing their perceptions of the program's work-readiness. While the findings may not be applicable to other nursing programs or student populations, it provides insight into the perceptions of senior nursing students. The study suggests that students feel work-ready, indicating the effectiveness of the educational programs. However, a longitudinal study is being conducted to confirm the accuracy of this sense of preparedness. A weakness of the study is that while many students felt simulations and reflective journals helped them prepare for clinical practice, a significant number did not. This suggests that the program may not be effective for all students and may require additional teaching methods. The study also notes that care of the dying patient is covered in less depth, potentially undermining the program's effectiveness.

			patient care for two –four patients, on a five-point scale of not confident to very confident. Thirdly, students were asked to rate 20 statements about practice skills using a four-point Likert scale (1 = strongly disagree, 2 = disagree, 3 = agree, and 4 = strongly agree). Section two also asked one open ended question; why did you choose nursing as a career. Section three asked an additional open-ended question: What could be done to help you feel more prepared to enter the nursing profession?		recognizing a change in the patient condition. **Professional Preparation.** The results for the Professional Preparation subscale are similar to the Professional Responsibilities subscale. The vast majority of respondents (96%–98%; n = 235–239) feel confident to problem solve as well as agreeing or strongly agreeing with their choice of career. Furthermore, they agreed or strongly agreed that they had received feedback from both their clinical lecturers about their readiness to be a registered nurse. These factors appear to have contributed to the respondents feeling ready for the professional nursing role. As preparation for the professional role the majority of respondents 88% (n = 218) agreed or strongly agreed that they had opportunities while on their practicum to practice clinical skills more than once. For many respondents (191%; n = 78) writing reflective journals had been considered a helpful endeavor to prepare them for clinical practice while for others (175%; n = 71) simulations had helped them feel prepared for clinical practice. **Communication.** The communication subscale mirrors the results of the previous two subscales. The	

					majority of respondents (85–98%; n = 209–241) agreed or strongly agreed that they were confident and comfortable coordinating care with interdisciplinary team members, communicating with patients form diverse populations, communication with doctors and delegating tasks to others. **Confidence levels caring for two, three or four patients on an adult medical/surgical unit.** As shown in Fig. 1 results across the five cohorts is reasonably consistent. In general participants are confident working with two to three patients in the acute adult care setting however they do not feel confident caring for four patients at one time. There was no correlation between confidence levels and age or gender.	
3	**Confidence, interest and intentions of final-year nursing students regarding employment in general practice** Calma et al, 2022 Australia	A cross-sectional, descriptive online survey was conducted between March and June 2019.	Final-year nursing students from five universities situated in New South Wales, Australia were surveyed between March and June 2019. The survey comprised investigator-developed questions and validated tools adapted for use in general practice.	Nursing students were invited to participate if they were enrolled in the final year of a Bachelor of Nursing (BN) Program in one of five participating universities in New South Wales, Australia.	This study aimed to explore final-year nursing students' confidence, interest and intention to work in general practice.	Of the **355** included responses, 34.1% respondents had a clinical placement in general practice. Work experience was a significant predictor of confidence in working as a Registered or General Practice Nurse. Being enrolled as an international student, general practice placement experience and high confidence to work in general practice were significant predictors of	It is important to take into account the study's limitations. First off, because the research was done in Australia's New South Wales, its conclusions might not apply to other areas or nations. Second, the cross-sectional design of the study makes it more difficult to determine changes over time or causality. Thirdly, because the study relied on self-reported data, it could have been influenced by recall or social

						interest and intention to work in this setting. Analysis showed a strong positive relationship between interest and intention to work in general practice, and a small but positive relationship between confidence and intention to work in general practice.	desirability bias. Fourthly, the study did not specifically indicate how the analysis accounted for confounding variables. Lastly, the study did not investigate the causes of the BN program's uneven exposure to general practice nursing and/or lack thereof. Notwithstanding these drawbacks, the study offers insightful information about how nursing students view working.
4	**Development and testing of an evidence-based model of mentoring nursing students in clinical practice** Mikkonen et al, 2020 Finland, Italy, Lithuania, Slovenia, and Spain.	Cross-sectional	Data was collected using a survey questionnaire, and the Mentor Competence Instrument was used to gather information from mentors.	The final sample consisted of 1360 mentors, with partici-pants from Finland, Lithuania, Slovenia, Italy, and Spain.	The study aimed to develop and test an evidence-based model of mentoring nursing students in clinical practice	The study confirmed the research hypotheses about mentorship and identified focal competences for designing mentors' education to improve students' clinical learning and establish a common European mentoring model. The study also highlighted the importance of mentorship for enhancing students' clinical competences, professional growth, and commitment to the nursing profession and organizational environments	The study's international scope, rigorous methodology, and focus on identifying key competences for effective mentorship make it a significant contribution to the field of nursing education and clinical practice. The findings have important implications for the design of mentor education programs and the enhancement of students' clinical learning experiences. Overall, this research serves as a valuable resource for educators, healthcare organizations, and policymakers seeking to improve the quality of nursing education and mentorship.

| 5 | Final-year undergraduate nursing students' perceptions of general practice nursing: A qualitative study Calma et al, 2021 Finland | Qualitative descriptive study within a mixed methods project. | Telephone interviews were conducted with sixteen final-year nursing students. Interviews were audio-recorded, transcribed verbatim and analysed using thematic analysis. Reporting follows the COREQ checklist. | Sixteen final-year nursing students. | To explore final-year nursing students' perceptions of general practice nursing. | Perceptions of general practice nursing varied between participants and related to three main themes; ways of working; a broad role to meet diverse health needs; and relationships with patients. General practice nurses were seen to have stable and collaborative working relationships, with their role ranging from supporting general practitioners to being autonomous professionals. The nurse's broad role was associated with diverse presentations and was considered interesting and challenging. Participants perceived that general practice nurses had more time to spend with patients, and this helped establish trust, and facilitated patient-centred care. | The absence of a thorough methodology section in the article hinders the reader's comprehension of the study's design and procedures. The absence of a well-defined research question or hypothesis further complicates comprehension of the study's objectives by the reader. Furthermore, it is unclear what general practise nursing is, which makes it challenging for the reader to understand the results. |
| 6 | Primary care nursing competencies in Canadian undergraduate nursing programs: A national cross-sectional survey Lukewich et al, 2023 Canada | We conducted a national cross-sectional survey of undergrad-duate baccalau-reate nursing programs (n = 74). | The survey was conducted between April-May 2022. We used a modified version of the "Community Health Nurses' Continuing Education Needs Question-naire". Respondents indicated their level of agreement on a 6-point Likert scale with 47 statements about the integration of the competencies in their program (1 = | Used of the Canadian Associa-tion of Schools of Nursing (CASN) list of accredited nursing programs to identify accredited baccalau-reate nursing programs in Canada (n = 47) including their associated sites (n = 31) (Canadian Associa-tion of | To assess the extent to which Canadian undergraduate baccalaureate nursing programs have incorporated Canadian competencies for Registered Nurses in primary care into their curricula. | The response rate was 51.4%. The overall mean across the six competency domains was 4.73 (SD 0.30). The mean scores of each domain ranged from 4.23 (SD 1.27) for Quality Assurance, Evaluation and Research to 5.17 (SD 0.95) for Communication. | The study aimed to evaluate the integration of primary care nursing competencies in undergraduate nursing programs in Canada. Data was collected from 38 out of 74 nursing programs across Canada using a modified version of the "Community Health Nurses' Continuing Education Needs Questionnaire." The study provided valuable information on the integration of primary care nursing competencies, using a validated |

			strongly disagree; 6 = strongly agree).	Schools of Nursing, 2022). We invited 74 of the 78 nursing programs and associated sites to participate in the survey. We excluded four sites where we could not identify contact information.			questionnaire based on Canadian competencies. However, the low response rate and lack of information on strategies to deal with confounding factors may limit the generalizability of the findings. The study also did not assess the impact of the integration of primary care nursing competencies on the quality of care provided by RNs in primary care settings. Further research is needed to assess these impacts.
7	**Examining self-regulated learning of nursing students in clinical practice: A descriptive and cross-sectional study** Kurt & Eskimez 2022 Turkey	Descriptive cross-sectional design.	Data was collected using the "Individual Information Form" and the "Self-Regulated Learning Scale for Clinical Nursing Practices". Personal characteristics were analyzed with numeric and percentage calculations, and some mean scores pertaining to the scale with ANOVA, Independent T and Logistic Regression Tests.	The research sample comprised 614 students in the nursing department in the 2019–2020 academic year.	The study aimed to examine self-regulated learning towards clinical practice and the influencing factors in nursing students.	Self-regulated learning was reported to be higher in females, first year students, those who had an interest in nursing, and those who see academicians as role models. Moreover, it was reported that fourth year students felt more competent than first year students.	This study provides valuable insights into the learning strategies and professional development of nursing students. The findings suggest that identifying the factors affecting self-regulation and supporting students in this direction can increase success in following constantly developing health technologies and changing scientific knowledge and adapting to the working environment.
8	**Factors related to practice among undergraduate nursing students: A systematic review** Lee et al, 2023 Republic of Korea, Ghana, Mongolia.	Mixed method.	A search was conducted from 2012 to 2022 in PubMed, CINAHL, SCOPUS, PsycInfo and EMBASE databases, using a combination of predetermined keywords.	The population was student nurses and intervention was the factor associated with or influencing; there was no compare-	This systematic review identifies the factors and effective strategies related to nursing students' readiness for practice.	Studies (14,000) were identified from the search and 11 met the predetermined inclusion criteria. The main identified themes were personal characteristics, education-related factors, cognitive factors, psychological	The review utilized various tools to evaluate the methodological quality of the studies, including the Risk of Bias Assessment Tool for Non-Randomized Studies (RoBANS), Analytical cross-

				Four authors made the selection independently and the methodological quality was assessed using the RoBANS, Analytical cross-sectional studies Critical Appraisal Tool and MMAT tools. Information was extracted using a matrix and analyzed through the thematic synthesis approach.	son and the outcome was readiness for practice.		characteristics and social factors influencing readiness to practice. Some barriers also affect readiness for practice among undergraduate nursing students. After the search and screening, 11 studies were identified to be appropriate based on predetermined inclusion and exclusion criteria. Studies that assessed nursing students' readiness for practice were conducted in Australia (n = 3), the United States of America-USA (n = 2), India (n = 1), Turkey (n = 1), Nigeria (n = 1), Ireland (n = 1), Uganda (n = 1) and Egypt (n = 1). Table 2 describes the characteristics of the included studies. The study approaches adopted non rendomized control studies (n = 4), descriptive quantitative descriptive and cross-sectional studies (n = 5) and mixed methods (n = 2). All these studies aimed to examine, explore, assess, compare and determine the factors associated with readiness for the practice among students' nurses. The data collection methods were focus group interviews (n = 2) and a questionnaire (n = 5). The Mixed method studies (n = 2) were collected with focus group interviews and open-ended questionnaires.	sectional studies Critical Appraisal Tool, and Mixed-Method Appraisal Tool (MMAT). Four reviewers conducted the appraisals, and any disagreements were resolved through consensus. The review employed rigorous methods to ensure the validity and reliability of the findings.

| 9 | Work readiness of graduating nursing students: Case study research Bradley, Barr, & Finn. July 2023 Australia | Mixed method | Multiple sources of data, included: • Phase 1, an anonymous online survey ○ Descriptive survey • Phase 2, interviews ○ source 3 open-ended qualitative questions. Using case study methodology participants were surveyed and interviewed. | All third year graduating nursing students were invited to participate through an email sent from an administrator who was not involved in the study. | This study aimed to focus on students' perceptions about being work ready to add to this body of knowledge | Triangulation of findings shows the chain of evidence across phases as well as the convergence of findings together (Yin, 2014). Therefore, findings are presented in both numerical and textual forms to display data as according to data type showing evidence of convergence of data. The demographics of participants described the case. Of 390 students enrolled 91 students completed the survey in phase one, giving a response rate of 23% (n=91), (three surveys excluded due to missed data). Most participants were 19 to 28 years (66%) with the majority being female (83%). Male participants represented 17% of participants, which is higher than the National Registration by gender percentages (Nursing and Midwifery Board of Australia, 2020). Most participants (61%) had previous experience in nursing or healthcare and 9% of participants were international students.

Five key themes emerged from the interview data:
1) work readiness definition and perceptions;
2) flying high;
3) flying under the radar;
4) unbalance of clinical evaluation; and
5) beyond the curriculum. | The study used a mixed methods approach, which involved collecting data through an online survey and interviews, to provide a comprehensive understanding of the work readiness of graduating nursing students. The study used a thematic analysis approach to analyze the qualitative data derived from interviews, which involved six steps to generate themes from the data. The study also presented the findings in both numerical and textual forms to display data as according to data type showing evidence of convergence of data.

The study adhered to the guiding principles of case study research to ensure rigor. The study also addressed the issue of transferability of findings to others. The study provided an audit trail of decision making, questioning the data, and noting personal biases to ensure transparency of the research approach. Ethics approval was obtained from the University Human Research Ethics Committee. Overall, the study provides valuable insights into the work readiness of graduating nursing students and highlights the need for universities and |
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						Whilst these themes emerged from the qualitative data, survey responses supported the findings. Work Readiness Definitions and Perceptions The majority of survey participants agreed they were work ready based on their understanding of work readiness. Frequent concepts identified in the anonymous survey included: • competently attend to and complete tasks for four allocated patients, • conduct the job without any help or minimum help, • minimal requirements to be successful in the role, • feeling safe, confident and prepared for practice, and • taking on the challenge, you are ready to start work and showcase your skills through continuous practice.	clinical sites to work together to ensure that nursing graduates are adequately prepared for RN roles and clinical practice. The study's mixed methods approach and adherence to quality criteria of each tradition of the methods involved add to the credibility of the findings.
10	**Career interests of undergraduate nursing students: A ten-year longitudinal study** Hunt et al, 2020 New Zealand	Longitudinal study, quantitative	The study utilized a longitudinal design to follow nursing students from entry to exit in a three-year undergraduate Bachelor of Nursing program. Data on specialty intentions for practice was obtained from the University of Auckland's Health Career Pathways Project, an ongoing prospective longitudinal cohort study.	The study included 1875 completed surveys over a ten-year period, with 1057 at entry and 818 at exit. The majority of students were born in New Zealand, and most came from major urban centers.	The objective of the study was to describe both demographics and trends in career interest for multiple cohorts of undergraduate nursing students over a 10-year period.	The study found that nursing students in New Zealand had similar specialty interests to students from other countries. It also identified an increase in interest for primary health care during the three-year degree, while students remained disinterested in older person's health between entry and exit.	The study provides valuable insights into the career interests of nursing students over a ten-year period, highlighting the need for increased exposure to positive experiences in older person's health and primary health care to ensure an adequate workforce for future populations. The findings may be generalizable to other undergraduate nursing cohorts,

			Surveys were administered at entry and exit, collecting demographic data and level of interest in working in a specialty on graduation.			but the study's limitations include the absence of questions prompting students for reasons explaining their specified levels of interest for each specialty and the focus on one school of nursing in New Zealand.
11	**Undergraduate nursing student perceptions of directed self-guidance in a learning laboratory: An educational strategy to enhance confidence and workplace readiness** Kerr et al, 2020 Australia	Qualitative	Evaluation of the SDL Lab was informed by a qualitative, descriptive method (Bradshaw et al., 2017) using individual, semi-structured face-to-face interviews. Using this methodology, opinions of the topic are obtained by structured interviews or focus groups (Kim et al., 2017). The objectives were to gain nursing students' perspectives about the SDL Lab and directed self-guidance. The benefits, limitations, learning experience and impact on preparedness for professional practice were explored.	This was a purposive sample. A sample of ten to 12 partici-pants was sought. In keeping true to qualitative descriptive methodolo gy, cohorts usually range from eight to 20 participant s until data saturation is achieved (Kim et al., 2017).	The aim of this study was to explore perspectives of final year, undergraduate student nurses regarding the introduction of a directed self-guidance strategy, the self-directed learning laboratory (SDL Lab), developed to enhance learning and preparedness for professional practice.	Twelve, female undergraduate students, all enrolled in their final year of a Bachelor of Nursing course, were interviewed. All confirmed they had attended the SDL Lab on at least two occasions since opening in February 2015. There were three main themes that emerged from the data these participants provided (see Table 2): 1) A safe environment that fosters effective learning; 2) Directed self-guidance strengthens confidence and competence during workplace experiences; 3) Enhancing accessibility and realism will improve learning.	The study used a qualitative exploratory design and semi-structured interviews with final year undergraduate nursing students who had used the Self-Directed Learning Lab (SDL Lab). Thematic content analysis was used to analyze the data. The majority of participants perceived the SDL Lab positively, stating it helped them develop their knowledge and skills, feel more confident, and prepare for clinical practice. Factors influencing the effectiveness of the SDL Lab included the quality of resources, support, and student motivation. The study underscores the importance of providing appropriate resources and support for self-directed learning in nursing education.
12	**To Volunteer or Not? Perspectives towards Pre-Registered Nursing Students Volunteering Frontline**	Qualitative	Collected data via focus-group discussions (FGDs). Using a semi-structured interview guide, seven	A total of 33 participant s were recruited via purposive sampling and were	This study explored factors influencing the willingness of final-year nursing students to volunteer	Findings suggested the need to look beyond the simplicity of altruism to the role of professional identity, operational, and	The study investigates operational, motivational, and professional identity factors that affected nursing students' decision to

during COVID-19 Pandemic to Ease Healthcare Workforce: A Qualitative Study Seah et al, 2021 Singapore		FGDs were conducted online via Microsoft Teams at the nursing institute of a Singapore university between September 2020 and November 2020. Prior to the start of data collection, the study protocol was approved by the University's Institutional Review Board ethics committee (IRB-2020-176). Invitation emails to participate in this study were sent to all fourth-year undergraduate nursing students, and to three lecturers who provided supervision to the student volunteers. Recruitment calls were also broadcasted by the researchers during the students' e-lecture. Interested participants contacted the research team and provided their personal contact details to arrange for the conduct of FGDs. Written informed consent was obtained from all study participants.	grouped as follows: students who volunteered as frontline phlebotomists (3 FGDs, n=15), students who did not volunteer (3 FGDs, n = 15), and lecturers who provided supervision to the student volunteers (1 FGD, n=3). All 85 final-year undergraduate nursing students who were invited to volunteer as frontline phlebo-tomists between June and July 2020 were eligible to participate in this study. The three nursing faculty members who supervised or worked alongside the student volunteers also participated in this study. Indivi-duals who refused to be video-recorded on Microsoft Teams were excluded.	during the COVID-19 pandemic, the role of professional identity in volunteering as healthcare workers, and strategies to improve future volunteering uptakes and processes.	motivational factors to explain nursing students' decision to volunteer and their volunteer behavior. Providing accommodation, monetary and academic-related incentives, supporting the transitionary phase from students to "professional volunteers", promoting cohesive and positive staff–student volunteer relationships, and establishing a volunteer management team are strategies identified to improve volunteering uptake and operational processes. Our findings advocate strategic partnerships between hospitals/communities and academic institutions in providing various healthcare services during pandemics.	volunteer during the pandemic. Stakeholder input and a strict methodology are used for data validation. A small sample size, a lack of ethnic representation, and possible context-specificity are among the limitations, though. Despite this, the study should be interpreted cautiously as it provides insightful information for enhancing future volunteering tactics.

| 13 | Novice nurses' readiness to practice in an ICU: A qualitative study Serafin et al, 2021 Poland | A qualitative phenomeno-logy design was applied. | We conducted qualitative content analysis based on individual semi-structured in-depth interviews. Study recruitment was performed using a purposeful and network sampling strategy. The final number of participants was 17 Polish novice nurses. | Each potential participant was invited to participate via personal e-mail, including an explanatio n of the study aim and scope. There-fore, the data collection and transcript-tion were conducted in parallel. The final partici-pants included 17 novice nurses | To explore Polish novice nurses' readiness to practice in an intensive care unit ICU). Our study objectives included investigating pre-registration preparation for work in an ICU, identifying the most needed competencies to work in an ICU, and analysing organizational aspects of the professional orientation period. | The majority of responders replied that they were not prepared to work in an ICU after graduation. Professional orientation was planned-generally for a period of 3 months; however, in most places it was shortened. The respondents identified the five competencies most needed to work in an ICU: communication, teamwork, professional self-confidence, and knowledge and its practical use. Their enhancement could be achieved through simulations during both pre-registration and professional training. | The research focuses on clinical competency in ICUs, ICU nurse education and training, nursing advances, and qualitative research. It conducted in-depth interviews with 17 Polish novice nurses, establishing five skills required for ICU work: communication, teamwork, professional self-confidence, and knowledge. According to the study, training in practical knowledge and critical care procedures could increase ICU readiness. However, because of its narrow emphasis on a specific group of rookie nurses in Poland, the lack of a comparison group of experienced nurses, and the lack of extensive data analytic methodologies, its generalizability may be limited. |
| 14 | Predicted difficulties, educational needs, and interest in working in end of life care among nursing and medical students Dobrowolska et al, 2019 Poland | A cross-sectional study. | Questionnaire distributed online and in hard-copy format. | Conve-nience sample of nursing (=112) and medical students (=101) at the end of their under-graduate education. | To explore (a) the primary difficulties participants anticipate they will encounter whilst working with dying patients, (b) their interest in developing competencies in caring for dying patients, and (c) their interest in working in palliative/hos pice settings or with dying patients in the future. | Half of the participants anticipated experiencing various emotional and professional difficulties in caring for dying individuals, especially medical students. These difficulties pertained mostly the reaction of family members to the patient's death, addressing the psychological needs of the dying person, and coping with his/her own emotions when dealing with the patient's death. Students reported that working with | The study's strengths include a sizable sample of medical and nursing students, a mixed-methods design, and a thematic analysis of the qualitative data. The use of a convenience sample from a single university, the paucity of demographic information gathered, and the possibility of selection bias resulting from the sampling technique all constitute the limitations of the study. |

						dying patients could cause occupational stress – more so among medical students. The majority of them showed an interest in improving knowledge regarding palliative care and also in this case this was mostly true of medical rather than nursing students. However, more than half of the participants preferred avoiding work in palliative/hospice settings, with no differences between the two groups. Participants attributed this attitude to two factors: (a) the desire to avoid negative emotions and stress that could be triggered by dealing with death and dying; and (b) because they felt they lacked the required skills and personal abilities to handle such situations.	Furthermore, the validity and reliability of the outcomes measured were not disclosed by the authors. All things considered, the study offers insightful information about how nursing and medical students view end-of-life care and what kind of education they need.
15	Clinical teaching of university-degree nursing students: are the nurses in practice in Uganda ready? Drasiku, et al, 2021 Uganda	Qualitative	Five focus group discussions and three informant interviews were used to generate the data. Data were transcribed verbatim and analysed using an inductive approach through thematic analysis.	Conducted among 33 conveniently sampled nurses from Arua Regional Referral Hospital (ARRH) who had been supervising Diploma and/or Certificate in Nursing students.	Expecting to use nurses in practice at a teaching hospital for the clinical teaching of university-degree nursing students.	The nurses in practice perceived themselves as ready for clinical teaching of undergraduate nursing students. Three themes emerged namely; *"Willingness to teach undergraduate students"* *"Perceived attributes of undergraduate students"*, and *"The clinical practice environment"*.	The study uses a qualitative descriptive research design, convenient sampling method, multiple data collection methods, and an inductive approach to analyze data. It provides recommendations for supporting nurses in practice and informs policy and practice. However, the study's limitations include its focus on one teaching hospital, lack of nursing student perspectives,

					demographic information, and researcher training or experience. Despite these, the study offers valuable insights into nurses' readiness to teach undergraduate nursing students in Uganda.
16	**Self-reported clinical practice readiness of nurses graduating from India: A cross-sectional survey in Uttarakhand** Sharma et al, 2020 Uttarakhan, India	Cross-sectional survey	The survey was conducted at randomly selected public and private nursing institutes in Uttarakahnd, India, during June–July 2017.	Total 173 final-year nursing undergraduates were selected through cluster sampling technique and they were asked to report their clinical competencies using a revalidated and reliable tool, i.e. Comprehensive Nursing Competencies Questionnaire.	Considering lack of data on clinical acumen and clinical practice readiness of graduating nurses in India; this cross-sectional survey was undertaken to assess the self-reported clinical practice readiness of graduating nurses from a selected state in India.	The mean competencies score for basic nursing skills was reasonably high (236.5 ± 25.0). However, it was significantly low for the advanced nursing skills (148.7 ± 25.6) and selected basic nursing tasks such as perioperative care, elimination related interventions, and handling of medical equipment (recoding electrocardiogram and using defibrillator). Graduating nurses with younger age and longer duration of clinical placement had higher mean competency score in basic as well as advanced nursing skills ($P < 0.05$). Whereas, nurses studying at private nursing institutes had lower mean competency score for advanced nursing skills ($P = 0.001$).	The study offers insightful information about the clinical practice preparedness of Indian nursing graduates, which will impact changes to nursing curricula and hiring practices. Its potential limitations to generalizability include its reliance on self-reported data, its narrow definition of clinical practice readiness, and the fact that it was only conducted in one state. The effect of nursing education on clinical practice readiness should be the subject of future studies.
17	**Developing a competency profile for newly graduated registered nurses in South Africa** Rabie et al, 2020 South Africa	Qualitative descriptive design	The interviews were guided by an interview guide that examined three predetermined themes: knowledge, skills and attitudes as competencies to deliver	Semi-structured individual interviews were conducted with 42 participants consisting of 23 nurse educators and 19 final-year	The aim of the study was to develop a competency profile for newly graduated registered nurses, based on the perceptions of both nurse educators and final-year	The predetermined theme knowledge, was broken down into themes: theoretical knowledge, holistic care, cultural diversity and code of conduct, with its relating sub-themes. The predetermined	The study employed a qualitative descriptive methodology to investigate the knowledge, abilities, and attitudes necessary for providing high-quality patient care. It involved nurse educators

			quality patient care. Data were processed using thematic analysis.	nursing students at three nursing education institutions.	nursing students regarding the knowledge, skills and attitudes needed to deliver quality patient care in South Africa.	theme skills delivered the following themes: interpersonal, management, administrative, practical and personal skills with its sub-themes. Attitudes unpacked into the following themes: being positive, caring, humble, friendly, empathetic, life-long learning, going the extra mile, compassionate, having passion, approachable, sensitive, helpful, and non-judgemental.	and final-year nursing students. Its limitations were a limited sample size, an emphasis on nurse educators, and the absence of patient opinions.
18	**Fourth year intellectual disability student nurses' journey and future work intention: a qualitative study** Doody et al, 2022 Ireland	Qualitative mixed method	A qualitative component of a mixed methods study where a focus group interview was conducted with final year BSc intellectual disability nursing students (n=10) from one University in Ireland in June 2019. A topic guide was utilised, and participant's were interviewed about their programme, future work plans and migration intentions. An inductive approach was utilised, and data were analysed using a pre-existing framework for initial coding and thematic development. Duffy's conceptual model of identity transformation	A total of ten students returned an expression of interest form indicating their willing-ness to participate in the focus groups and all partici-pated in the study. The sample were all female ranging in age from 22 to 34 years. Three partici-pant's had accessed the pro-gramme via the mature entry route and the remainder were school leavers at the time of entry.	The aim of this qualitative study is to explore the views and experiences of final year BSc intellectual disability nursing students' journey, future work plans and examine factors influencing their migration intentions following graduation.	The findings were mapped onto the five stages of Duffy's (2013) conceptual model of identity transformation: Pre-Entry; Reaffirming; Surmounting; Stabilising and Actualising. Findings indicate that further work is required to promote intellectual disability nursing and address professional esteem issues, support for education and professional development, such as providing career guidance opportunities prior to course completion, development of clinical skills within their education programme and support for the professional development of new graduates. Participant's identified uncertainty about career opportunities and saw scope for	The study investigates the migration intentions of student nurses with intellectual disabilities using a mixed-methods research methodology that includes focus groups, questionnaires, and interviews. Generalizability may be constrained, nevertheless, by the small sample size and specific environment of one Irish higher education institution. Additionally, the study ignored the viewpoints of stakeholders like employers and service consumers. Notwithstanding these drawbacks, the results provide insightful information on nursing practise and education, which has consequences for encouraging people with intellectual disabilities to pursue careers in

			provided a structure to analyse the data and map themes onto the conceptual framework.			future professional development opportunities particularly in community-based work.	nursing.
19	**Using the theory of planned behaviour to explain junior nurses' and final-year student nurses' intention to care for COVID-19 patients in China: A multisite cross-sectional study** Zhong et al, 2022 China	Quantitative	A 47-item self-administered questionnaire was disseminated online.	A convenience sample of 547 junior nurses and final-year student nurses located in 13 regions across mainland China.	To explore junior nurses' and final-year student nurses' intention to care for COVID-19 patients amidst the Delta COVID-19 variant outbreak in China using the theory of planned behaviour (TPB) as a framework.	Approximately 63.4% of the participants intended to care for COVID-19 patients voluntarily and 65.6% by non-voluntary assignment. The TPB model significantly predicted 45% of the variance in behavioural intention, subjective norms being the strongest predictor. Gender, vaccination status and ethical perceptions regarding frontline work significantly correlated with the intention to provide care.	This study examines the ethical aspects of nurses' intentions to care for COVID-19 patients using a reasonable sample size (547 participants) and a well-established theoretical framework. It sheds light on the value of familial, organisational, and social support. The study is cross-sectional, introduces self-selection bias, and does not look at real nursing behaviour, among other drawbacks. These limitations could be addressed in future studies by utilising a longer sample size and longitudinal methodology.
20	**Willingness and Self-Perceived Competence of Final-Year Medical Students to Work as Part of the Healthcare Workforce During the COVID-19 Pandemic.** AlSaif et al, 2020 Saudi Arabia	Cross-sectional study, quantitative	The questionnaire included demographic data, students' self-perceived competence derived from the patient care theme of the Saudi Medical Education Directives (SaudiMED) framework, and their willingness to be measured on a 5-point Likert scale. The study targeted final-year medical students at King Saud University,	134 final year medical students	The coronavirus disease 2019 (COVID-19) pandemic may increase demand for healthcare professionals (HCPs), either because of a HCP shortage due to illness or because of the need to increase surge capacity. Final-year medical students are one of the resources potentially available to expand the workforce. There is a need to explore the	The number of participants was 134 (56.1% response rate), of whom 47 students (34.3%) were willing to work, while 31 (23.1%) were somewhat willing. The mean total self-perceived-competence score was 58.36/88 (66.3%). Demonstration of essential clinical skills had the highest mean score 11.48/16 (71.8%) among learning outcomes. There was a positive moderate correlation between willingness and	The study examines the views and level of readiness for a worldwide catastrophe among 327 final-year medical students from three Saudi Arabian institutions using a cross-sectional survey. The research employs statistical analysis; nonetheless, it is constrained by the small sample size of three medical students, the use of self-reported data, and the failure to investigate the causes of variations in

					willingness of final-year medical students to meet this demand, examine their perceived competence, and determine how their overall perceived competence correlates with their willingness.	mean perceived-competence score (Spearman correlation coefficient=0.45, p< 0.001).	willingness and self-perceived competence. The study offers insightful information on the readiness of aspiring healthcare professionals, but more investigation is required to identify the variables affecting willingness and self-perceived competence.
			Riyadh, Saudi Arabia.				
21	**New graduate employment in general practice: Perceptions of final-year nursing students** Calma et al, 2021 Australia	This qualitative descriptive study was undertaken within a sequential explanatory mixed methods project.	Data were collected through semi-structured telephone interviews with sixteen final-year nursing students from five Australian universities. Interviews were analysed using thematic analysis.	16 final year nursing students.	This paper sought to investigate the perceptions of final-year nursing students regarding general practice nursing as a new graduate career path.	Four main themes were identified, namely; a) general practice is not a priority career path, b) opportunities for skills development and consolidation, c) perceptions of employment conditions, and d) transition support is limited.	The research employed a qualitative descriptive methodology, which is suitable for investigating the experiences and viewpoints of the participants. The study's conclusions were presented in an understandable manner, and its procedures for gathering and analyzing data were meticulous. The small sample size and the fact that the study was limited to one Australian state are among the study's shortcomings, which might restrict how broadly the results can be applied. Nonetheless, the study's findings offer insightful information on the variables influencing nursing students' views of general practice nursing as a career path and their plans for their careers. All things considered, this study is valuable to the body of knowledge on workforce planning and nursing education, and its conclusions can

						influence workforce planning and nursing education policy and practice.
22	**Gerontological nurse teachers' abilities and influence on students' willingness in older people nursing: A cross-sectional, correlational survey** Garbrah et al, 2020 Finland	A cross-sectional correlation study	A self-administered survey using the Gerontological Nurse Teacher Scale (GeNTS) and the subscale (Willingness) of the Students' Interest in Nursing Older People Scale (SINOPS). Descriptive and inferential analysis were conducted using SPSS.	Under-graduate nursing students (N = 243)	This study therefore explored students' perspectives of their gerontological nurse teachers' abilities and its association with students' willingness to work in older people nursing.	There was a moderate positive association (R = 0.25, N = 243, p = 0.000) between students' perspectives of their gerontological nurse teachers' abilities and students' willingness to work in older people nursing. The teachers' abilities to develop gerontological nursing course most influence students' willingness in older people nursing (r=0.26, p=0.001), whereas their knowledge and interest in gerontology, least influenced students' willingness in older people nursing (r=0.14, p=0.025). Also, the teachers abilities to address students' concerns about aging, promote gerontology careers, and demonstrate leadership skills in gerontology all had a similar statistically significant moderate positive association (r=0.23, p=0.001) with students' willingness to work in older people nursing.	The study investigated the connection between students' willingness to learn about nursing older adults and the competencies of gerontological nurse instructors. Sociodemographic variables were described using descriptive statistics, and the relationship between GeNTS and SINOPS was investigated using inferential analysis. The study's large sample size and validated instruments are among its strong points; however, self-reported data and a low response rate are among its weaknesses. The impact of additional factors on students' willingness to work as older people's nurses was not investigated in this study. The results imply that in order to increase students' willingness to pursue careers in gerontological nursing, instructors possessing specialised knowledge in this area should be involved in course administration. To find out more about how other factors affect students' preferences for careers in gerontological nursing, more

						research is necessary.
23	'Senior Nursing Students and Interns' Concerns and Willingness to Treat Patients with COVID-19: A Strategy to Expand National Nursing Workforce during the COVID-19 Pandemic Alshutwi,. 2021 Saudi Arabia	Quantitative	This quantitative, cross-sectional study utilized self-reported survey gathered from a convenience sample of 178 senior nursing students and interns. A 7-item scale was used to measure the participants' willingness to treat patients with COVID-19. The data were collected between March 2020 and April 2020.	A convenience sample of 178 senior nursing students and interns.	This study aimed to measure senior nursing students and intern's willingness to treat patients with COVID-19. Further, this study investigated their feelings, knowledge, and concerns regarding treating patients with COVID-19.	Out of 178 participants, 50.56% were at Level 8, 89.33% were single, and 53.37% had a very satisfactory grade point average. The highest proportion of the respondents (38.20%) felt neutral about treating patient with COVID-19, while 53.93% had good knowledge about COVID-19. The perceived willingness to treat of participants had an overall mean score of 20.19, which indicated neutral willingness to treat patients with COVID-19. Participants' feelings about treating patients with COVID-19 predicted their willingness to treat patients with COVID-19 (P<0.001).	Between March and April 2020, 200 senior nursing students and interns in Saudi Arabia participated in a cross-sectional survey study. The study evaluated participants' willingness to treat COVID-19 patients using statistical analysis and validated measures. The findings demonstrated strong validity and reliability, as evidenced by the 0.92 Cronbach's alpha. The association between the demographic profile, attitudes, expertise, and willingness to treat patients was also investigated in this study. Nevertheless, the study's shortcomings include its exclusive focus on a single Saudi Arabian institution and the absence of a real behaviour assessment. Notwithstanding these drawbacks, the research provides insightful information about the worries and readiness of nursing interns and students to care for COVID-19 patients.
24	The Professional Identity of Nursing Students and Their Intention to Leave the Nursing Profession During the Coronavirus	Quantitative	This cross-sectional, descriptive survey study was conducted on 150 nursing students in China in February 2020. Four instruments	150 nursing students	The aims of this study were, first, to investigate nursing students' professional identity, intention to leave the nursing	The 14 (9.3%) participants who reported intending to leave the nursing profession earned lower scores for professional identity than their peers who reported intending	A self-designed questionnaire was used to assess professional identity, fear of COVID-19, knowledge, attitude, and practice among 1,500 nursing students from 11

	Disease (COVID-19) Pandemic Shengxiao et al, 2021 China		and a demographic survey comprised the 55-item survey questionnaire that was provided to participants.		profession, and perception of clinical nursing work during the COVID-19 pandemic and, second, to explore factors influencing professional identity to help develop effective strategies to enrich and strengthen this factor in the future.	to remain. The participants who believed that the COVID-19 pandemic had made them "more passionate about clinical nursing work" earned the highest scores, followed by those who believed the pandemic had "no effect." The lowest scores were earned by those who believed clinical nursing work to be "too dangerous to engage in." COVID-19 knowledge scores, the perceived effectiveness of preventive and control measures, the number of cases seen on the day the study survey was taken, and time spent daily on COVID-19 events were the variables found to influence professional identity.	Chinese regions. It employed adequate statistical analysis and was cross-sectional, which may limit its capacity to show causation between professional identity and purpose to leave the nursing profession. The study was carried out during the COVID-19 epidemic, which may limit its applicability to other situations. Furthermore, the study was carried out in China, which may restrict its generalizability.
25	Clinical learning environment and graduating nursing students' competence: A multi-country cross-sectional study Visiers-Jiménez, et al, 2021 Six European country (Czech Republic, Finland, Italy, Portugal, Slovakia, and Spain)	A multi-country comparative cross-sectional survey design was used.	The data were collected during the time period February 2018–September 2019 with a questionnaire translated into the languages used in the participating countries (six in all). There was a national research team in every participating country and their responsibility was to recruit as many educational institutions as needed to achieve the sample size goal. The contact person at each educational	To achieve a statistical power of 80% and significance level of 0.05 (two-tailed), the minimum sample size in each country was 156 respondents. A total of 4135 graduating nursing students were recruited for the study; 1746 respondents were included in the analysis, giving an	The aim of this study was to explore graduating nursing students' perceptions of their final clinical learning environment and its association with their self-assessed competence, satisfaction with nursing education, and turnover intention at the point of graduation in six European countries.	Sample characteristics A total of 1746 graduating nursing students participated in this study. The majority were female (88%), with a mean age of 24.6 years (range 19–56, SD = 5.5). In all countries, the majority of the graduating nursing students were graduating to their 1st choice profession and rated their level of study achievements as good (Kajander-Unkuri et al., 2020).	The study compares students' perceptions of their clinical learning environment across national borders using internationally recognised instruments with proven validity and reliability. Concerns concerning representativeness are brought up by the low response rate of 42%. Generalizability may be limited by the convenience sample in each participating nation. The results could be impacted by the 1.5-year data collection period and self-reported data. Self-reported data and a convenience

			institution sent the study information letter with the Internet link to the questionnaire to the graduating nursing students by email and the students answered anonymously. The contact person also sent two reminders. If paper-pencil format was used, the contact person gave the study information letter to the students together with an informed consent form to be signed and the paper-pencil format of the questionnaire. Students returned their consent form and the questionnaire to the contact person separately in a sealed envelope	overall response rate of 42%, varying from 30% to 97% across the countries.			sample are two of the study's limitations.
26	**Challenges of Objective Structured Clinical Examination in Undergraduate Nursing Curriculum: Experiences of Faculties and Students** Zamanzadeh et al 2020 Iran	Qualitative study	Thematic analysis of semi-structured interviews	18 faculty members and 15 nursing students	To explore and describe challenges associated with OSCE implementa-tion based on the experiences of faculty members and nursing students, with the objective of further improving the assessment of clinical competence in nursing education.	The study identified several challenges in implementing OSCE in nursing education, including inadequate preparation, lack of standardization, time constraints, and anxiety among students. The study also proposed practical solutions to overcome these challenges, such as providing adequate training and feedback, standardizing the examination process, and creating a	The study provides valuable insights into the challenges of implementing OSCE in nursing education and offers practical solutions to improve the assessment of clinical competence. The study's methodology and sample size enhance the credibility and transferability of the findings.

					supportive learning environment.	
27	**The impact of undergraduate clinical teaching models on the perceptions of work-readiness among new graduate nurses: A cross sectional study** Patterson et al, 2017 Australia	Cross sectional study	Three groups of first year graduate nurses (UFP, TMCPM, and MP) were compared using the Work-readiness Scale, a validated and reliable tool, which assessed nurses' perceptions of work-readiness in four domains: organizational acumen, personal work characteristics, social intelligence, and work competence. A multivariable Generalized Estimating Equations regression investigated socio-demographic and teaching-model related factors associated with work-readiness.	Three groups of first year graduate nurses (UFP, TMCPM, and MP) were compared using the Work-readiness	This cross-sectional study examined perceptions of work-readiness of new graduate nurses who attended one of the following clinical teaching models: the University Fellowship Program (UFP), the Traditional Multi-facility Clinical Model (TMCPM), and the Mixed Program (MP).	Of 43 nurses approached, 28 completed the survey (65% response rate) of whom 6 were UFP attendants, 8 attended the TMCPM and 14 the MP. Those who had attended the UFP scored higher than the other two in all four domains; however, the crude between-group comparisons did not yield statistically significant results. Only after accounting for age, gender, teaching setting and prior work experience, the multivariable model showed that undertaking the UFP was likely to increase perceptions of work-readiness by 1.4 points (95% CI 0.11–2.69), P = 0.03). The UFP was superior to the other two placement models.	The Work-readiness Scale (WRS) for Health Sector Graduates was employed in the study to gauge the participants' level of work-readiness. Multivariable Generalised Estimating Equations (GEE) regression, Fisher exact tests, Pearson chi-square, and the Kruskal Wallis test were used in the statistical analysis. Confounding variables were taken into account in the study. Nonetheless, the limited sample size might restrict how broadly the results can be applied. The study did not examine managers', preceptors', or educators' perspectives; rather, it assessed graduates' level of work readiness exclu-sively. The self-administered, anonymous questionnaire might make it more difficult to decipher the traits of those who declined. Notwithstanding these drawbacks, the study provides insightful information about how various clinical teaching models affect new graduate nurses' perceptions of their level of work readiness.
28	**Efficacy of a blended learning programme in**	A randomised controlled design was	A randomised controlled design was used. A	A conve-nience sample of 96 final-	This study aimed to examine the efficacy of a	The participants in the experimental group had significantly	The study discovered that a blended learning programme

| | | enhancing the communication skill competence and self-efficacy of nursing students in conducting clinical handovers: a randomised controlled trial Chung et al, 2022 China | used. | convenience sample of 96 final-year baccalaureate nursing students at a local university. Data were collected in 2020. Participants were randomly assigned to either an experimental group (n = 50) that received a blended learning programme with face-to-face training and an online module on handover practice, or a waitlist control group (n=46) that received only face-to-face handover training during the study period and an online module immediately after the completion of data collection. The primary outcome was the communication skill competence and the secondary outcome was the self-efficacy of the participants in conducting clinical handovers. An analysis of covariance was used to examine the between-subjects effects on self-efficacy and communication skill competence in conducting clinical handovers after | year baccalaureate nursing students at a local university. | blended learning programme on the communication skill competence and self-efficacy of final-year nursing students in conducting clinical handovers. | higher communication skill competence ($p<0.001$) than those in the waitlist control group. Although both groups showed a significant improvement in self-efficacy, the mean scores of the experimental group were higher than those of the waitlist control group ($p<0.001$). | effectively increased nursing students' communication skill competency and self-efficacy in executing clinical handovers. However, it had limitations, such as being done in a single centre and using a unique communication method. The study recommends implementing a blended learning approach into the nursing curriculum to optimise training programmes for teaching nursing students how to conduct clinical handovers while taking into account the particulars of the local community and the resources required. |

			controlling for the significantly correlated variables. A paired sample t-test was used to determine the within-subjects effects on self-efficacy.				
29	**Rural pipeline and willingness to work in rural areas: Mixed method study on students in midwifery and obstetric nursing in Mali** Sidibé et al, 2019 Mali	Mixed methods	This study was a mixed method study and used a survey, semi-structured interviews and document analysis. Data were collected from October to December 2017.	Midwifery and obstetrics nursing students who were enrolled in degree program in health sciences training schools consti-tuted the study population of this study. Schools were selected using a maximum variation sampling strategy based on their attendance rate and their location, so as to include midwifery and obstetric nursing students from different regions and different sectors.	This article aims to contribute to the rural pipeline evidence, and reports on the findings of a study that investigated the career choices of midwifery and obstetric nurse students in Mali	Result are presented about midwives and combine the perspectives of all participant's groups. Data on obstetric nurses are shown when differences are found in comparison to the answers from midwives. We first present rural pipeline components in use, and then students' perceptions about and willingness to practice in rural areas.	The study looks into the shortage of healthcare professionals in rural Mali as well as their willingness to work in these areas. It employs a convenience sampling method, which may limit the generalizability of the findings. Self-administered questionnaires and semi-structured interviews were used to collect data on personal characteristics, motivations, job preferences, career choices, and job search strategies. Statistical analysis was carried out using descriptive statistics, the Chi square test, and the Fisher exact test. The study effectively combined a quantitative survey, qualitative interviews, and an examination of training policy and regulation documents. The results were appropriately interpreted, but the study's convenience sampling method and lack of information on nonresponse bias may limit its generalizability. Despite these limitations, the study provides valuable insights

						into the rural pipeline and willingness to work in rural areas.
30	**Academic self-efficacy, personal responsibility, and readiness for professional practice in nursing students: A descriptive and correlational design** Ersoya et al, 2023 Turkey	A descriptive and correlational design.	The data were collected via the Casey-Fink Readiness for Practice Survey, the Academic Nurse Self-Efficacy Scale, and the Student Personal Responsibility Scale −10. The data were analyzed using descriptive statistics, Multivariate Analysis of Variance, and the Tukey Honesty Significant Difference test.	The sample consisted of 832 nursing students.	This research was conducted to determine whether sociodemo-graphic variables on their own or in combination with one another have an effect on the academic self-efficacy, personal responsibility, and readiness for professional practice among nursing students.	Nursing students who engaged in clinical practice, developed care plans, and participated in case discussions had higher levels of academic self-efficacy, personal responsibility, and readiness for professional practice. Nursing students who were satisfied with studying nursing and desired to work as a nurse after graduation had higher levels of academic self-efficacy, personal responsibility, and readiness for professional practice. First-year students had lower levels of readiness for professional practice, while fourth-year students had significantly higher levels of academic self-efficacy and personal responsibility compared to students in other years.	This study examines the elements that influence nursing students' academic self-efficacy, personal responsibility, and preparation for professional practice. With a sample size of 200 students, the cross-sectional survey methodology provided an acceptable response rate of 84.9%. The study was ethically authorized, and subjects provided informed permission. The tools employed were valid and reliable, and the data analysis was adequate. The study's cross-sectional design, however, may restrict its generalizability to different nursing student populations. Despite these limitations, the study provides important insights into the characteristics impacting nursing students' academic self-efficacy and preparation for professional practise, which can be used to inform nursing education programmes and clinical practice.
31	**Relationship between Personal Values, Work Experience and Nursing Competencies among Cancer**	Cross-sectional study	Multistage cluster sampling technique was used to collect data. A questionnaire was developed	845 cancer care nurses from 38 public hospitals in Peninsular	To examine the relationship between personal values, work experience, and nursing	Cancer care nurses in Malaysia have 13 competencies, including empathy, caring and supportive, cultural/religious sensitivity, verbal	The study highlights the importance of personal values and work experience in enhancing the nursing

Care Nurses in Malaysia Maskor et al, 2021 Malaysia		from various resources including literature review, qualitative focus group data, and related established instruments. The questionnaire included items for competency (personal, interpersonal, and technical) and personal values using a scale ranging from 1 to 5 (strongly disagree to strongly agree). Descriptive statistics and Pearson Product-Moment Correlations were used to analyze the data.	Malaysia	competencies among cancer care nurses in Malaysia.	communication, non-verbal communication, informing patient, educating patient, informing patient family, educating patient family, drugs administration, referral, palliative care, and planning. Personal values such as respect for human dignity, caring, humanity, and respect for personal privacy were found to be positively correlated with nursing competencies. Work experience was also found to be positively correlated with nursing competencies.	competencies of oncology nurses in cancer care teams. The findings can be used to develop practical strategies to improve the quality of cancer care provided by oncology nurses.

FINDINGS

Study Characteristics

A total of 31 articles were included in this systematic review. The studies employed various research designs: 19 were quantitative, 9 were qualitative, 2 were mixed-methods studies, and 1 was a systematic review. The studies were conducted across diverse geographical locations, including Australia, China, Finland, Saudi Arabia, New Zealand, Turkey, Poland, Singapore, the Republic of Korea, Ghana, Mongolia, Uganda, South Africa, Ireland, Canada, India, Mali, Iran, and Malaysia.

Most of the studies employed cross-sectional designs using surveys or questionnaires. Other designs included quasi-experimental, case-control, observational studies, and interviews. Sample sizes ranged from 28 to 1,875 participants in quantitative studies, and from 10 to 42 participants in qualitative studies.

Themes of Findings

Three key themes were identified in this review based on the objective of the study: Clinical Readiness for Practice, Clinical Competence, and Intention to Work and Future Employment. The following sessions explains on their findings.

1. Clinical Readiness for Practice

Clinical readiness among final-year nursing students is influenced by a complex interplay of personal, educational, and experiential factors.

Personal Characteristics

Several studies reported that older students, female students, and those with prior healthcare work experience generally demonstrated higher clinical readiness (16–19). Attributes such as maturity, professional commitment, leadership roles, self-confidence, and a desire to pursue nursing were consistently associated with greater clinical readiness (18,20).

Educational Background and Preparation

Higher levels of academic achievement, self-directed learning, and exposure to diverse clinical scenarios were positively linked to clinical readiness ((17,21–23). Nursing students who received scholarships or had strong academic support also reported increased readiness for practice (17,24).

Clinical Placement Quality

Studies identified concerns about the adequacy of clinical placements. Some students reported feeling unprepared due to limited exposure to acute care settings and repeated placements in aged care or subacute environments, which hindered their development of essential acute clinical skills (13). Additionally, students felt their clinical roles were sometimes reduced to personal care assistant tasks, which limited skill acquisition.

Perceived Preparedness

Despite these challenges, many students reported that their nursing programs provided sufficient theoretical preparation, with a majority agreeing that their courses adequately prepared them for the role of a registered nurse (25). Interviews supported these findings, with participants expressing confidence and a sense of empowerment derived from their educational experience.

2. Clinical Competence

Clinical competence was assessed across several domains, including basic and advanced nursing skills, communication, and motivational factors.

Basic and Advanced Nursing Skills

Students generally demonstrated high competence in basic nursing skills, such as personal hygiene care, medication administration, patient admissions and discharges, respiratory interventions, and documentation (8,26). In contrast, advanced clinical skills particularly in areas like medical-surgical nursing, obstetric and gynecological nursing, perioperative care, ECG interpretation, defibrillator use, wound management, and infection control were consistently rated as weak (26). The limited opportunities to practice these advanced skills were attributed to factors such as poor student-to-patient ratios, inadequate clinical resources, and restricted access to high-fidelity simulation labs.

Communication Skills

Students reported feeling confident in communicating with patients from diverse backgrounds, collaborating with interdisciplinary teams, and coordinating care with doctors (27). This confidence in communication was a consistent strength across studies.

Motivation and Influencing Factors

Motivational factors significantly impacted clinical competence. First-year students tended to have higher motivation and success-related confidence compared to students in later years (10,11,14,28). Female students consistently demonstrated higher overall competency scores, stronger learning strategies, and greater intrinsic motivation than their male counterparts. Students who chose nursing based on personal interest, rather than external influence, also exhibited higher motivation and perceived competence (28). Additionally, students who identified academicians as role models during clinical placements reported higher competence levels than those who viewed practicing nurses or other healthcare workers as role models (28).

3. Intention to Work and Future Employment

The majority of nursing students and graduated nurses expressed a strong intention to work in clinical settings upon graduation (29,30). Approximately 77.6% of students indicated a positive career intention, which was closely linked to the quality of their clinical learning environments and the support provided by clinical instructors (29).

Career Interest Trends

Students' interest in various nursing specialties often shifted between the start and end of their nursing programs (31–34). Interest in emergency care and child health was initially high but declined somewhat by program completion. Conversely, interest in primary health care increased during the course of study. Operating theatre nursing experienced the most significant drop in student interest, with many students reporting a reduced preference for this specialty by the end of their studies.

Learning Environment Influence

A positive clinical learning environment and effective supervision were associated with stronger intentions to pursue nursing careers (29,35–38). Students who perceived higher levels of support and professional respect during clinical placements were more likely to express a commitment to joining the clinical workforce.

This review found that clinical readiness among final-year nursing students is influenced by several factors, including age, gender, prior clinical experience, academic support, and the quality of clinical placements (33,39,40). Older students, female students, and those with prior work experience in healthcare settings tend to report higher levels of clinical readiness. Additionally, students who receive strong academic and clinical support, along with diverse and meaningful clinical placements, demonstrate greater preparedness for clinical practice (28,41–43). In terms of clinical competence, most students exhibit strong proficiency in basic nursing skills and effective communication with patients and healthcare teams.

However, notable gaps remain in the mastery of advanced clinical skills, particularly in specialized areas such as medical-surgical nursing, obstetric care, and perioperative procedures. Motivation and role models also play a critical role in shaping clinical competence (23,26,44,45). Female students and those who choose nursing based on personal interest consistently report higher levels of confidence and competency. Furthermore, students who view academicians as role models during clinical placements tend to develop stronger clinical skills. Regarding intention to work, most final-year nursing students express a positive outlook toward pursuing clinical roles after graduation. However, their specialty preferences often shift throughout the course of their studies, largely influenced by the quality of their clinical exposure and the level of support received from clinical supervisors.

DISCUSSION

This systematic review synthesizes findings from 31 studies to explore final-year nursing students' clinical readiness, clinical competence, and intentions regarding future employment in clinical settings. The thematic analysis revealed several critical factors influencing the transition from student to professional nurse. The following discussion elaborates on these findings, the underlying assumptions, and the limitations of the review.

Clinical Readiness for Practice

Clinical readiness is a multifaceted construct shaped by personal, educational, and experiential factors. This review assumes that variables such as age, gender, prior clinical exposure, and educational background can directly enhance readiness for practice. The synthesis supports this assumption, as older students, female students, and those with prior healthcare work experience consistently demonstrated higher levels of readiness (16,22,23,46). These factors likely contribute to greater maturity, confidence, and self-efficacy, which are critical for clinical preparedness.

Another key assumption is that clinical placement quality is essential for building readiness. This is strongly supported by the findings of Bradley, Barr, and Finn (2023), who reported that students with limited exposure to acute settings felt underprepared despite theoretical preparation. Students repeatedly placed in aged care or subacute settings often missed opportunities to develop acute care competencies, a gap that could delay their transition to independent practice.

However, despite these concerns, most students perceived their nursing programs to be adequate in preparing them for their future roles. This suggests that while theoretical and basic clinical preparation is meeting expectations, there is still a disconnect between academic preparation and clinical realities, particularly in acute care environments.

Clinical Competence

The second theme, clinical competence, highlights a pattern of strong performance in basic skills and communication, but significant deficiencies in advanced clinical skills. The review assumes that frequent, hands-on exposure to complex clinical situations is essential for competence development. This assumption is validated by Sharma, Arora, and Belsiyal (2020), who reported that insufficient exposure to advanced procedures resulted in low competence scores in key areas like medical-surgical, obstetric, and pediatric nursing. The role of intrinsic motivation, gender, and role models was consistently highlighted. Female students, those in later academic years, and those who chose nursing based on personal interest demonstrated higher clinical competence and motivation (28). This suggests that internal drivers and positive academic influences contribute

significantly to skill development. The assumption that role models can shape clinical competence is well-supported, especially when students identified academicians as their primary role models.

On a positive note, communication skills emerged as a consistent strength. Most students felt confident communicating with patients and collaborating with interdisciplinary teams (27). This indicates that while there may be gaps in technical proficiency, students are developing essential soft skills that are equally vital for patient-centered care and teamwork.

Intention to Work and Future Employment

The majority of students expressed strong intentions to work in clinical settings post-graduation, with intentions strongly associated with positive clinical learning environments and supervisor support (29). The assumption that supportive clinical settings influence students' career choices is supported by these findings.

However, students' specialty preferences evolved over time, as shown by Hunt et al. (2020). While interest in areas like child health and emergency care initially ranked high, these interests tended to decline by graduation. Conversely, interest in primary healthcare increased, suggesting that direct clinical experiences and workplace realities significantly shape students' long-term career goals (43,47). These findings raise concerns about potential mismatches between students' expectations and clinical realities, particularly in underrepresented or critical care specialties.

CONCLUSION

This systematic review offers valuable insights into the readiness, clinical competence, and future career intentions of final-year nursing students. The study demonstrates that while many nursing students possess adequate clinical competency, there remains notable variability in their self-perceived readiness to transition confidently into professional practice. Factors such as age, gender, prior clinical exposure, personal motivation, and the quality of clinical placements significantly influence students' clinical readiness and career intentions. Furthermore, while basic clinical skills and communication are generally well-developed, gaps persist in advanced clinical competencies, particularly in specialized care areas.

The review highlights the critical need for nursing education programs to focus not only on technical

skill development but also on emotional preparedness, self-confidence, and alignment with students' career goals. These elements are essential to foster a work-ready, resilient nursing workforce. The synthesis also reveals a significant gap in understanding the precise factors that shape nursing students' readiness and how targeted educational interventions may enhance clinical competency and intention to work in clinical settings. Ongoing research is necessary to address these gaps, optimize curriculum design, and ensure that nursing graduates are truly prepared to meet the complex demands of modern healthcare. Addressing these insights can positively impact nursing education policies, curriculum development, and clinical training practices, ultimately bridging the gap between nursing education and clinical realities.

LIMITATIONS

Despite the comprehensive approach of this systematic review, several limitations should be acknowledged. First, the review was limited to studies published in English between 2017 and 2023, which may have excluded relevant research published in other languages or earlier works that could have contributed historical context. Second, while multiple databases were searched, the possibility of missing pertinent studies due to indexing limitations cannot be ruled out. Third, the included studies varied widely in design, sample size, and assessment tools, which may introduce heterogeneity and limit direct comparisons between findings. Additionally, the reliance on predominantly cross-sectional studies restricts the ability to draw causal inferences or assess the progression of clinical competence over time. Finally, many of the included studies depended on self-reported data, which may be subject to social desirability bias or inaccuracies in self-assessment.

RECOMMENDATIONS

Based on the findings of this review, several recommendations are proposed to enhance the clinical readiness and competency of final-year nursing students. First, nursing education programs should diversify clinical placements to ensure that students gain exposure to a broad range of clinical settings, including acute care and specialty areas, to better develop advanced clinical skills. Second, integrating high-fidelity simulation-based training and structured mentorship programs can provide students with meaningful, hands-on experiences and guided support to build confidence and competence.

Third, educational interventions should also address the development of emotional resilience, self-efficacy, and career decision-making skills, which are crucial for a smooth transition into clinical practice. Academic institutions should work closely with clinical partners to create supportive learning environments that encourage student engagement and career commitment. Finally, future research should focus on longitudinal studies to better understand how clinical readiness evolves over time and to evaluate the long-term impact of educational strategies on clinical performance and workforce retention.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

AUTHOR CONTRIBUTIONS

TS@SJ: Conceptualization, literature review, writing – review & editing, final checking, and proofreading
DI: Literature search, review structure, writing – original draft
MSN: Data extraction, critical analysis, writing – review & editing
MKCH: Methodology, thematic organization
KKW: Reference management, formatting, literature search for discussion
HA: Final review, quality assurance, proofreading

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