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Digital Competence and Use of Evidence-Based Resources in Future Nurses: A Descriptive Post-Intervention Study

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Abstract

The progressive digitalization of healthcare requires nursing students to develop digital competence to safely access, evaluate, and apply scientific information in clinical practice. This study described nursing students' perceived digital competence and confidence in using digital resources to support evidence-based clinical decision-making after a structured educational seminar. A descriptive post-intervention, single-group study was conducted with 35 undergraduate nursing students enrolled in a compulsory clinical nursing course. The two-hour seminar covered evidence-based websites and clinical guidelines, biomedical database searching, and use of a wound-management mobile application. Data were collected using an anonymous 12-item Likert-scale questionnaire (Cronbach's alpha = 0.935). Domain mean scores ranged from 4.19 (SD = 0.83) to 4.51 (SD = 0.67). The highest item mean was for continuous learning (M = 4.63, SD = 0.60) and the lowest was for statistical programs (M = 4.03, SD = 0.95); intellectual property protection was also lower (M = 4.17, SD = 0.89). Spearman correlations showed no significant associations between age and any item after Bonferroni correction (adjusted $\alpha = 0.0042$; all $p > 0.05$). These findings describe high perceived digital competence and identify areas for further educational reinforcement.

Keywords: digital competences; evidence-based nursing; nursing development; nursing students

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1. Introduction

The progressive digitalization of healthcare has transformed how clinical information is generated, accessed, and used, placing digital competence at the core of contemporary nursing practice [1]. Nurses are increasingly required to retrieve and interpret scientific information, document care accurately, and integrate digital resources into clinical decision-making while maintaining patient safety, confidentiality, and ethical standards. In this sense, digital competence extends beyond technical proficiency and encompasses critical appraisal skills, responsible data use, and the ability to translate digital information into evidence-based care [2].

Beyond the mere incorporation of technology into clinical environments, digitalization has reshaped professional roles, models of care delivery, and expectations regarding accountability and transparency [3]. Electronic health records, clinical decision-support systems, telehealth services, and mobile health applications now constitute routine tools that demand not only operational knowledge but also sound judgment, ethical sensitivity, and a capacity for interprofessional collaboration [4]. Consequently, digital competence

has emerged as a transversal skill that intersects with patient safety, quality improvement, lifelong learning, and patient engagement [2,4].

International frameworks increasingly conceptualize digital competence as a multidimensional construct grounded in established theoretical and empirical models that link digital skills with quality, safety, and evidence-based practice in healthcare [5–7].

The European Digital Competence Framework for Citizens (DigComp), recently updated to version 3.0, defines digital competence as a combination of knowledge, skills, and attitudes structured across five interrelated competence areas, such as information and data literacy, communication and collaboration, digital content creation, safety, and problem-solving, providing a widely validated and technology-neutral reference model for assessment and educational design. DigComp 3.0 preserves the original framework structure while updating competence descriptions, proficiency levels, and learning outcomes to reflect emerging digital challenges, including the transversal integration of artificial intelligence, cybersecurity, digital wellbeing, and the ability to critically address misinformation. Developed through extensive international expert consultation, the framework emphasizes lifelong learning, ethical and responsible technology use, and adaptability to diverse educational and professional contexts, reinforcing its relevance for conceptualizing digital competence development in healthcare and nursing education [8].

In parallel, nursing-specific frameworks, including the Technology Informatics Guiding Education Reform (TIGER) competencies, emphasize informatics knowledge, information management, and clinical decision support as core professional capabilities required for safe and effective nursing care [9]. These models converge with evidence-based practice (EBP) competency frameworks, which highlight the ability to systematically search for, appraise, and apply scientific evidence using digital resources as a fundamental component of clinical competence [10].

Together, these frameworks provide a coherent theoretical foundation for conceptualizing and measuring digital competence in nursing education, highlighting the relevance of structured, theory-driven approaches to understanding how future nurses develop confidence and proficiency in the use of digital tools to support evidence-informed clinical decision-making [11].

Despite its growing relevance, the development of digital competence during undergraduate nursing education remains uneven. Previous studies indicate that students frequently rely on general web sources, encounter difficulties distinguishing reliable evidence from non-validated content, and often feel uncertain when applying digital information in clinical situations [12,13]. These challenges emphasize the need to reinforce digital literacy and promote systematic exposure to trustworthy, evidence-based digital resources throughout nursing training. Furthermore, limited opportunities for guided practice, insufficient alignment between theory and clinical placements, and variability across curricula may contribute to fragmented or superficial skill acquisition [14].

Thus, further research is needed to deepen understanding of nursing students' perceptions of their own digital abilities, to explore how confidence develops in real clinical contexts, and to identify persistent gaps that may hinder the effective and safe use of digital technologies. In this context, the aim of the present study was to describe nursing students' perceived digital competence and their confidence in using digital resources to support evidence-based clinical decision-making, providing empirical insights that may inform curriculum design and targeted educational interventions.

2. Materials and Methods

2.1. Design

A descriptive post-intervention, single-group study with post-intervention assessment was conducted to describe perceived digital competence after a structured educational seminar on nursing students' digital competence and their use of evidence-based digital resources to support clinical decision-making. A single-group design was selected because the intervention was embedded within routine academic activity and could not be reasonably withheld from students enrolled in the course [15]. A pretest was not administered because the intervention was embedded within routine course activities and delivered during a single scheduled session. Conducting a pre-intervention assessment was not feasible without disrupting the planned curriculum. Moreover, the study aimed to descriptively explore students' perceived digital competence following the seminar rather than to evaluate pre–post changes.

2.2. Setting and Sample

This study was conducted at a nursing university center adhered to the University of Seville. It was located in Seville, a capital city in southern Spain. The intervention was delivered as part of the compulsory course 'Clinical Nursing II', a subject in the second semester of the nursing degree. The course addresses nursing care for adult patients with alterations in nutritional–metabolic and elimination patterns, emphasizes clinical safety, holistic care, teamwork, and the use of evidence-based resources, and integrates lectures with active, small-group seminars [16].

All undergraduate nursing students present on the day of the seminar were invited to participate [17]. Students were eligible if they were 18 years of age or older, attended the seminar in its entirety, and provided informed consent. Those who did not complete the questionnaire were excluded.

2.3. Characteristics of the Intervention

The intervention consisted of a two-hour, face-to-face seminar delivered by a faculty member with clinical experience in wound management and prior teaching experience in digital health tools. To ensure consistency, the seminar followed a predefined script, standard slides, and an identical sequence of demonstrations across groups.

The session was integrated into the module addressing alterations in skin integrity within the 'Clinical Nursing II' subject [16], and was designed to strengthen digital competence in wound healing while promoting the critical and safe use of online clinical resources.

In the first part of the seminar, students were introduced to clinical practice guidelines and official health websites as rigorous, trustworthy, and regularly updated sources of information for clinical decision-making in wound healing. Attention was drawn to methodological transparency, authorship accountability, evidence synthesis processes, and the presence of decision aids and educational materials facilitating translation into clinical practice [18–20].

The second part focused on searching biomedical databases to retrieve research evidence. Students practiced formulating clinical questions, selecting appropriate keywords, using filters and Boolean operators, interpreting study designs and levels of evidence, and integrating retrieved evidence into nursing care planning.

The final component addressed the Healico mobile application (URGO Laboratories, Chenôve, France) as a digital tool for wound documentation and monitoring. Core functionalities were demonstrated, including secure photographic recording, image annotation and measurement tools, chronological tracking of wound progression, structured fields for clinical documentation, and features that facilitate communication among healthcare

professionals. Practical examples illustrated how Healico can contribute to documentation accuracy, continuity of care, and decision support [21]. The seminar combined short theoretical explanations, live demonstrations, and supervised practice to ensure standardized exposure.

A unified replication checklist and evaluation framework is provided to support transparency and reproducibility of the educational intervention. The table specifies learning objectives, instructional methods, time allocation, alignment with digital competence domains, and includes indicators for implementation fidelity and degree of achievement (Supplementary S1).

2.4. Data Collection

Data was collected immediately after the seminar using an anonymous, self-administered questionnaire. Students received written and verbal information about the study aims, voluntariness, and confidentiality. No identifying data were collected, and questionnaires were reviewed for completeness prior to entry.

The questionnaire included sociodemographic variables and items assessing digital competence. Sociodemographic variables included age (continuous), gender (dichotomous), and university admission (vocational education or high school). The variable 'university admission' refers to the route by which students accessed undergraduate nursing education in Spain. Specifically, 'vocational education' corresponds to higher vocational training programs that provide an alternative pathway to university entry within the Spanish educational system [22].

Digital competence was assessed using the 12-item Nursing Digital Application Skill Scale with response options ranging from 1 (strongly disagree) to 5 (strongly agree) [23]. The instrument includes items assessing perceived competence in digital content creation, information retrieval and management, and the use of digital tools to support clinical judgment, decision-making, collaboration, and learning processes, with higher scores indicating greater perceived competence. The scale has been previously used in educational contexts and has demonstrated strong psychometric properties in its original validation study, including high internal consistency (Cronbach's alpha = 0.968), a single-factor structure, and adequate construct and convergent validity [23]. In the present study, internal consistency reliability was assessed for the current sample (Cronbach's alpha = 0.935); however, factor structure and construct validity analyses were not conducted due to the limited sample size. Therefore, the instrument was used as a descriptive measure of perceived digital competence.

The questionnaire domains were aligned with established digital competence frameworks, including DigComp 3.0 and nursing informatics models such as TIGER. Items on information management and digital content creation may correspond to DigComp areas of information and data literacy and digital content creation, while collaboration items map onto communication and collaboration competencies. Items related to clinical decision-making and lifelong learning may reflect DigComp problem-solving domains and evidence-based practice competencies, providing a theoretical basis for interpreting the results [8–10].

2.5. Data Analysis

Descriptive statistics were used to characterize the sample and summarize questionnaire responses. Categorical variables were expressed as absolute and relative frequencies, while continuous variables were summarized using means and standard deviations. Medians and interquartile ranges were additionally reported where distributions were skewed.

Normality of continuous variables was assessed through graphical inspection and Shapiro–Wilk normality tests. As the assumption of normality was not met, non-parametric procedures were applied [24]. Associations between age and individual digital competence items were examined using Spearman's rank correlation coefficient, given the ordinal nature of the Likert-scale data and the non-normal distributions observed. To control multiple testing in the correlation matrix, a Bonferroni correction was applied by adjusting the significance threshold ($p < 0.05$) according to the number of item-level comparisons performed ($\alpha = 0.05/12 = 0.0042$). All analyses were performed using SPSS statistics software version 31.0.0.0 (117) (IBM Corp., Armonk, NY, USA) [25].

2.6. Ethical Considerations

The study was conducted in accordance with the principles of the Declaration of Helsinki [26]. The protocol was reviewed and approved by the research commission of the nursing university center (ID: CICR-2025-05). Participation was preceded by a digital consent process. A comprehensive overview of the study appeared before any survey items, and progression was permitted only after participants indicated authorization using the consent control. Participation was voluntary and anonymous, and students were informed that refusal to participate would not affect academic assessment. The study was registered on the Open Science Framework (registration DOI: 10.17605/OSF.IO/37HP4), and its reporting followed the TREND Statement recommendations for non-randomized studies [27].

3. Results

A total of 35 participants was obtained, corresponding to all students who attended the course.

3.1. Sociodemographic Characteristics of Participants

A total of 35 undergraduate nursing students participated in the study. As shown in Table 1, the sample was predominantly female (85.7%), with a mean age of 22.1 years (SD = 5.67). Most participants were between 18 and 22 years of age (65.7%). University admission pathways were evenly distributed between secondary education (51.4%) and vocational education (48.6%), allowing the inclusion of students with diverse academic backgrounds. These characteristics provide contextual information for interpreting students' perceptions of digital competence within an undergraduate nursing population.

Table 1. Sociodemographic Characteristics of Participants.

Factor	Category	Count	Frequency (%)
Gender	Female	30	85.7%
	Male	5	14.3%
Age (years)	18–20	12	34.3%
	20–22	11	31.4%
	22–24	4	11.4%
	24–26	2	5.7%
	>26	2	5.7%
Age	Mean	22.1	
	SD	5.67	
University Admission	Secondary Education	18	51.4%
	Vocational Education	17	48.6%

Note. Authors' own elaboration. SD: standard deviation.

3.2. Overall Perceived Digital Competence in Relation to the Study Objective

In line with the primary objective of describing nursing students' perceived digital competence, the results revealed consistently high scores across all assessed dimensions (Table 2). Mean values for all items exceeded 4.0 on the five-point Likert scale, indicating a general perception of agreement or strong agreement regarding digital competence.

Table 2. Description of the Results of the Digital Competence Scale.

Item	1 Strongly Disagree	2 Disagree	3 Neither Agreement nor Disagreement	4 Agree	5 Totally Agree	Mean (SD)
Content Development (CD)						4.36 (0.76)
DC1	N/A	N/A	5 (14.3%)	12 (34.3%)	18 (51.4%)	4.37 (0.73)
DC2	N/A	N/A	2 (5.7%)	12 (34.3%)	21 (60.0%)	4.54 (0.61)
DC3	1 (2.9%)	N/A	6 (17.1%)	14 (40.0%)	14 (40.0%)	4.17 (0.89)
Use of Digital Tools (UD)						4.19 (0.83)
UD1	N/A	N/A	5 (14.3%)	15 (42.9%)	15 (42.9%)	4.23 (0.77)
UD2	N/A	N/A	4 (11.4%)	14 (40.0%)	17 (48.6%)	4.31 (0.76)
UD3	1 (2.9%)	N/A	7 (20.0%)	14 (40.0%)	13 (37.1%)	4.03 (0.95)
Analysis and Decision-Making (AD)						4.28 (0.80)
AD1	N/A	1 (2.9%)	6 (17.1%)	11 (31.4%)	17 (48.6%)	4.26 (0.85)
AD2	N/A	1 (2.9%)	6 (17.1%)	12 (34.3%)	16 (45.7%)	4.31 (0.76)
Collaboration (CO)						4.48 (0.71)
CO1	N/A	N/A	2 (5.7%)	12 (34.3%)	21 (60.0%)	4.51 (0.66)
CO2	N/A	1 (2.9%)	3 (8.6%)	10 (28.6%)	21 (60.0%)	4.46 (0.78)
AP (Application for Lifelong Learning and Innovation)						4.51 (0.67)
AP1	N/A	N/A	2 (5.7%)	9 (25.7%)	24 (68.6%)	4.63 (0.60)
AP2	N/A	N/A	5 (14.3%)	11 (31.4%)	19 (54.3%)	4.40 (0.74)

Note. Authors' own elaboration. SD: standard deviation; N/A: no answer. DC1: I can integrate existing digital content; DC2: I can create new digital content; DC3: I can protect intellectual property; UD1: I can use digital tools for nursing; UD2: I can use digital technologies to analyze data; UD3: I can use statistical programs; AD1: I can use digital technologies to support decisions; AD2: I can use digital technologies to promote care; CO1: I can use digital technologies to collaborate; CO2: I can use digital technologies to actively participate; AP1: I can use digital technologies to learn continuously; AP2: I can use digital technologies to promote innovative practices.

The distribution of responses showed a clear predominance of the "agree" and "totally agree" categories across all items, with very few responses indicating disagreement.

3.3. Digital Competence Related to Information and Content Management

Regarding competencies associated with the creation and management of digital content, students reported high levels of perceived ability. More than 85% of participants agreed or totally agreed that they were able to integrate existing digital content and create new digital materials. Although still high, slightly lower scores were observed for the item related to protecting intellectual property when creating digital content. This item also showed greater variability in responses.

3.4. Use of Digital Tools to Support Evidence-Based Practice

Consistent with the study objective of exploring confidence in the use of digital resources for clinical decision-making, students reported strong perceived competence in using digital tools for nursing practice and for data analysis. High mean scores were observed for items related to the appropriate use of digital tools in nursing contexts and the

analysis of clinical data using digital technologies. The use of statistical programs showed comparatively lower, though still positive, scores. This item presented greater dispersion.

3.5. Digital Competence in Clinical Analysis and Decision-Making

Students' perceptions of their ability to use digital technologies to support clinical analysis and decision-making were also high. Most participants agreed or totally agreed that digital technologies could be used to support nursing decisions and promote patient care.

3.6. Digital Collaboration and Professional Interaction

High levels of perceived competence were observed in the domain of digital collaboration. Students reported confidence in their ability to collaborate with others and actively participate in digital environments using technology.

3.7. Lifelong Learning and Innovation Through Digital Technologies

The highest perceived competence scores were found in the lifelong learning dimension. Students reported strong confidence in using digital technologies for continuous learning and to promote innovative practices.

3.8. Relationship Between Age and Perceived Digital Competence

To further contextualize the study objective, associations between age and perceived digital competence were examined. Spearman's rank-order correlations showed no statistically significant associations between age and any of the digital competence items. After applying the Bonferroni correction for multiple comparisons (adjusted $\alpha = 0.0042$), none of the correlations remained statistically significant. This indicates that perceived digital competence was consistent across different age groups within the sample (Table 3).

Table 3. Correlations among age and digital competences.

Variable	Measure	Age	DC1	DC2	DC3	UD1	UD2	UD3	AD1	AD2	CO1	CO2	AP1	AP2
Age	Rho	—												
	p	—												
DC1	Rho	0.096	—											
	p	0.583	—											
DC2	Rho	−0.126	0.587	—										
	p	0.471	<0.001	—										
DC3	Rho	0.314	0.510	0.206	—									
	p	0.066	0.002	0.234	—									
UD1	Rho	0.269	0.719	0.298	0.538	—								
	p	0.118	<0.001	0.082	<0.001	—								
UD2	Rho	0.193	0.729	0.318	0.657	0.896	—							
	p	0.267	<0.001	0.062	<0.001	<0.001	—							
UD3	Rho	−0.020	0.608	0.381	0.523	0.588	0.588	—						
	p	0.909	<0.001	0.024	0.001	<0.001	<0.001	—						
AD1	Rho	0.064	0.640	0.476	0.581	0.695	0.787	0.775	—					
	p	0.714	<0.001	0.004	<0.001	<0.001	<0.001	<0.001	—					
AD2	Rho	0.231	0.806	0.433	0.672	0.826	0.908	0.640	0.846	—				
	p	0.181	<0.001	0.009	<0.001	<0.001	<0.001	<0.001	<0.001	—				
CO1	Rho	0.100	0.718	0.634	0.558	0.589	0.713	0.594	0.672	0.810	—			
	p	0.568	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	—			
CO2	Rho	−0.081	0.532	0.600	0.469	0.460	0.635	0.602	0.793	0.660	0.747	—		
	p	0.644	0.001	<0.001	0.004	0.005	<0.001	<0.001	<0.001	<0.001	<0.001	—		
AP1	Rho	0.110	0.359	0.466	0.423	0.490	0.658	0.451	0.633	0.588	0.705	0.759	—	
	p	0.529	0.034	0.005	0.011	0.003	<0.001	0.006	<0.001	<0.001	<0.001	<0.001	—	

Table 3. *Cont.*

Variable	Measure	Age	DC1	DC2	DC3	UD1	UD2	UD3	AD1	AD2	CO1	CO2	AP1	AP2
AP2	Rho	0.250	0.684	0.473	0.514	0.786	0.753	0.660	0.666	0.767	0.754	0.572	0.703	—
	p	0.148	<0.001	0.004	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	—

Note. Authors' own elaboration. Degree of freedom was 33 for all correlations. DC1: I can integrate existing digital content; DC2: I can create new digital content; DC3: I can protect intellectual property; UD1: I can use digital tools for nursing; UD2: I can use digital technologies to analyze data; UD3: I can use statistical programs; AD1: I can use digital technologies to support decisions; AD2: I can use digital technologies to promote care; CO1: I can use digital technologies to collaborate; CO2: I can use digital technologies to actively participate; AP1: I can use digital technologies to learn continuously; AP2: I can use digital technologies to promote innovative practices.

In contrast, strong positive correlations were observed among the digital competence variables themselves. This internal coherence supports the interpretation of digital competence as a multidimensional yet interrelated construct within the context of undergraduate nursing education.

4. Discussion

The aim of this study was to describe nursing students perceived digital competence and their confidence in using digital resources to support evidence-based clinical decision-making following a structured educational seminar. Overall, the findings indicate high levels of perceived digital competence across all assessed domains, suggesting that students felt confident in their ability to use digital tools for information management, clinical analysis, collaboration, and lifelong learning.

These results are consistent with the educational focus of the intervention, which was embedded within a clinical nursing course and specifically designed to promote the critical and safe use of digital resources relevant to nursing practice. The uniformly high scores observed across items may be related to the timing of data collection after the seminar, as data were collected directly after the intervention, when newly acquired knowledge and skills were likely most salient to participants [28]. The combination of theoretical explanation, live demonstrations, and supervised practice coincided with students positive self-perception of their digital competence [29].

The high scores observed across all items indicate that students perceived themselves as digitally competent in areas relevant to both academic learning and clinical practice. Results related to digital content creation and information management reflect a strong perceived ability to integrate and generate digital materials, which represents a core dimension of digital competence frameworks in nursing education.

One of the main strengths of this study lies in the integration of the intervention into routine academic activity within a compulsory clinical nursing course. This ensured that all participating students received standardized exposure to the educational content in a realistic educational setting, enhancing the validity of the findings. Additionally, the use of a predefined script, standardized materials, and a consistent instructional sequence across groups contributed to the uniform delivery of the intervention, reducing potential variability related to teaching methods [30].

Another strength is the focus on clinically relevant digital tools and resources directly applicable to nursing practice. By addressing official health websites, biomedical databases, and a wound management mobile application, the seminar aligned digital competence development with real-world clinical tasks, documentation requirements, and decision-making processes [31]. High perceived competence in clinical analysis and decision-making underscores the relevance of digital tools for integrating evidence-based resources into nursing practice and supporting clinical reasoning processes.

High levels of perceived competence were particularly evident in domains related to lifelong learning and digital collaboration. These findings suggest that students not only view digital technologies as supportive of immediate academic or clinical tasks, but also as tools for continuous professional development and teamwork [11]. The greater variability observed in the use of statistical programs suggests that this area represents a less consolidated component of students' digital competence, highlighting the need for additional educational reinforcement in research literacy and ethical aspects of digital practice [12].

In contrast, slightly lower and more variable scores were identified in areas such as the use of statistical programs and the protection of intellectual property when creating digital content. Although overall perceptions remained positive, these findings indicate less consistent confidence in more specialized or research-oriented digital skills. The greater variability observed in the use of statistical programs suggests that this area represents a less consolidated component of students' digital competence, highlighting the need for additional educational reinforcement in research literacy and ethical aspects of digital practice [32].

The high scores observed in the lifelong learning domain emphasize the importance of digital technologies as tools for continuous professional development and innovation.

The lack of a significant association between age and perceived digital competence suggests that confidence in digital skills was relatively homogeneous across the age range represented in the sample. This finding may be attributed to the shared educational context and the standardized nature of the intervention, which provided all participants with similar learning opportunities regardless of age or academic background [33]. Furthermore, the absence of significant associations between age and digital competence supports the interpretation that perceived digital competence was consistent across this undergraduate nursing population.

Finally, the strong intercorrelations observed among the different digital competence domains support the conceptualization of digital competence as a multidimensional but interrelated construct within undergraduate nursing education, reinforcing the need for integrated curricular approaches rather than isolated digital skills training [34].

Despite these strengths, several limitations should be acknowledged. First, the exploratory nature of the study and the relatively small sample size (n = 35), drawn from a single nursing education institution, limit the generalizability of the findings and warrant caution when interpreting the results. The reduced sample may also have constrained the statistical power to detect more subtle associations between variables [35]. In addition, the single-group, post-intervention design precludes causal inferences regarding the effectiveness of the seminar. The absence of a pre-intervention assessment or a comparison group makes it impossible to determine whether the observed levels of digital competence reflect the impact of the educational intervention or pre-existing skills among participants. Furthermore, data were collected immediately after the intervention using self-reported measures, which may be subject to response bias, including social desirability and Hawthorne effects. The consistently high mean scores observed across all dimensions suggest potential ceiling effects, further limiting variability and interpretability [36]. Finally, perceived digital competence may not accurately represent actual performance in clinical or academic contexts [15], and therefore structural or dimensional interpretations should be avoided in the absence of exploratory or confirmatory factor analyses.

Future research should build on the strengths of this study by maintaining the integration of digital competence training within clinical curricula while addressing its limitations. Studies with larger, more diverse samples, longitudinal designs, and objective assessments

of digital skills would provide a more comprehensive understanding of nursing students' digital competence and its development over time.

5. Conclusions

The findings of this study suggest that nursing students perceive themselves as highly digitally competent and confident in using digital resources to support evidence-based clinical decision-making following a structured educational seminar. High levels of perceived competence were observed across domains related to information management, clinical analysis, collaboration, and lifelong learning, highlighting the relevance of integrating digital competence training within undergraduate nursing education.

The results indicate that targeted, practice-oriented educational interventions embedded within clinical courses may coincide with higher perceived confidence in the use of digital tools relevant to nursing practice. However, areas such as statistical software use and intellectual property protection may require further educational reinforcement to ensure a more balanced development of digital competence.

Given the reduced sample size and the exploratory nature of the study, the conclusions should be interpreted cautiously. Nevertheless, the study provides preliminary evidence supporting the value of structured digital competence training in nursing curricula and emphasizes the need for further research with larger samples and more robust designs to confirm and extend these findings.

Supplementary Materials: The following supporting information can be downloaded at https://www.mdpi.com/article/10.3390/ime5010025/s1, Supplementary S1: Replication Checklist and Educational Seminar Framework for Undergraduate Nursing Educators.

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