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ASSESSING THE RESEARCH COMPETENCE AMONG NURSING STUDENTS IN A PRIVATE UNIVERSITY IN GHANA

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ABSTRACT

Background: Nursing research underpins evidence-based practice, guiding clinical decision-making and improving patient outcomes. However, many undergraduate nursing students lack essential research skills, hindering their ability to critically appraise literature, design studies, and apply findings in practice. This study assessed the current level of research competence among nursing students at the Christian Service University, Ghana.

Methods: A descriptive-correlational design was employed to assess research competence among nursing students. Using stratified and simple random sampling, 191 students participated in the study. Data were collected through a validated self-administered questionnaire based on a modified research attitude scale. Descriptive and inferential statistics were used to analyse the data using Jamovi software. Ethical approval and informed consent were obtained, and confidentiality was maintained throughout the study.

Results: The overall mean score for *Research Competence* among the nursing students was high. There was no statistically significant difference in research capability between female and male nursing students; furthermore, no significant difference was found depending on the educational level.

Conclusion: Nursing students demonstrated high theoretical research competence but only moderate practical skills and application. Targeted strategies are necessary to enhance the use of research in clinical settings.

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Keywords: *Research Competence, Nursing Students, Ghana, Christian Service*

1.0 INTRODUCTION

Nursing is an evolving profession which can be developed mainly through research (Cámpoli & Mulvey, 2024). Research brings us new knowledge that informs our practice (Aryuwat et al., 2022). This is the foundation for evidence-based practice and contributes to the advancement of healthcare (Ghasemi et al., 2020). The nursing profession in contemporary healthcare is grounded in research to inform clinical decision-making, enhance patient outcomes, and refine healthcare policies (Peddle, 2021). Without new knowledge, nursing cannot improve techniques for the latest nursing intervention (Sharif et al., 2019). However, there is growing concern that many nursing students lack the essential research skills to thrive in this evidence-driven environment (Myakava et al., 2021).

Research competence is a cornerstone of modern nursing education (Fiset et al., 2017). The Accreditation Commission for Education in Nursing (ACEN) views research as one of the core abilities that healthcare providers must develop (Myakava et al., 2021). This, however, does not imply that research will be applied to routine clinical practice. Undergraduate nursing students must be educated about research to increase their understanding, solidify their conviction that it benefits patients and nurses, and enhance their confidence in applying research (Yanbing et al., 2021). It is crucial to enhance the educational process and emphasise research application to bring about this change (Halabi, 2016).

Globally, evidence demonstrates that undergraduate nursing students have positive views toward research and its importance for patient care (Howell, 2021); however, they experience several difficulties when it comes to the practical application of research in clinical settings. Many nursing students worldwide face challenges in developing research skills (Nantsupawat et al., 2023). Other factors, including educational methods, clinical exposure, and personal attributes, significantly shape nursing students' competencies (Höglander et al., 2023). However, research education in African nursing programmes is often underdeveloped compared to Western counterparts, with many institutions focusing more on clinical skills than on the research process. This creates a gap between the demand for evidence-based care and the preparedness of nursing students to conduct or utilise research in practice. Countries like South Africa and Kenya have made significant strides in incorporating research into their nursing curricula, but further efforts are needed (Waweru et al., 2025). Still, more needs to be done to develop competencies and ensure that nurses can engage in research activities early in their education (Baker et al., 2021). Many nursing students in Africa struggle to acquire these competencies due to their limited access to resources such as journals and databases (Murararaneza et al., 2020). The absence of a well-established research culture in African nursing

institutions contributes to students' difficulties developing these skills (Chaabane et al, 2021). Without a strong foundation in research, nursing graduates are often ill-equipped to contribute to scientific inquiries that can enhance patient care (Jafarian-Amiri et al, 2020). The low competence level of nursing students was attributed to the shortage of faculty members with advanced research skills and qualifications in Malawi (Chitsulo et al,2021).

In Ghana, for nursing practice to be efficient and responsive to its healthcare needs, it must be contextually research-driven (Amoo et al., 2022). The healthcare system is increasingly adopting evidence-based approaches to address national health challenges, with nursing professionals playing a crucial role in this shift (Amoo et al, 2022).

Nursing practice often relies on long-standing experience rather than evidence-based methods, leaving it outdated and potentially harmful to patients (Bam et al. 2020). Although Quartey (2025) found that nurses are open to using research in practice, they often lack the knowledge and skills to do so. Implementing nursing research in Ghana faces challenges due to structural issues, including limited funding, mentorship, and institutional support (Antwi and Palaganas, 2023). Additionally, the shortage of qualified mentors exacerbates the disconnect between theoretical research knowledge and its application in healthcare (Stenhouse, 2024).

Despite barriers in the evolving healthcare landscape, where evidence-based practice drives improved patient outcomes, nursing students must develop strong research skills. Lacking research competence may hinder their academic progression and impact the quality of care in clinical settings and beyond.

Anaman-Torgbor et al (2022) emphasised that research competence is a critical skill that can equip nursing students with the capacity to incorporate evidence-based practices into patient care and contribute to advancements in healthcare. However, there is a growing concern that many nursing students lack adequate research skills, which limits their ability to engage effectively in scholarly inquiry and integrate research findings into clinical practice (Salifu et al, 2022).

The growing doubts about nursing students' research capabilities are driven by several factors, including inadequate research training, a lack of confidence, and limited practical research experience (Ryan, 2016; Axe & Kincade, 2001). In many Ghanaian settings, nursing curricula prioritise clinical skills but often fall short in preparing students for the research aspect of the profession (Salifu et al., 2022). This gap limits the ability of nursing students to critically evaluate evidence, design research projects, and apply research findings in nursing practice to deliver quality patient care and facilitate the professional growth of nurses.

The need for nursing students to be proficient in research is becoming increasingly important as healthcare systems worldwide move toward evidence-based practice models (Baixinho et al., 2022). To improve patient outcomes and maintain high standards of care, nurses must be skilled in conducting research and applying it effectively in practice (Ziba et al., 2021). However, current studies suggest that many nursing students feel unprepared to take on this responsibility. This is of particular concern in settings where information on the issue is limited. Therefore, this study aimed to assess the research competence among private nursing students, where the following research questions were asked: What is the level of research competence among nursing students in terms of research abilities, usefulness of nursing research, personal interest in research and research use in clinical practice? Is there a significant difference in the level of research competence when considering sex, and level of education?

2.0 METHODOLOGY

2.1 Study Design

A descriptive correlational design was employed to assess research competence levels among nursing students.

2.2 Study Setting

The study was conducted at Christian Service University in the Ashanti Region of Ghana It is one of the best-performing private universities in Ghana. The University's focus on holistic education, community engagement, and the development of research competencies aligned seamlessly with the study's goals, making it an ideal location for assessing the research competence levels of nursing students. The University is situated in Santasi, Kumasi, the capital city of the Ashanti Region, a central hub for educational and healthcare services in Ghana.

2.3 Sampling Technique, Study Population and Sample Size

The stratified sampling technique was employed to ensure a proportional representation of third- and fourth-year students. Within these strata, simple random sampling was applied to select participants, aiming to create a representative and unbiased sample. The target population was nursing students in their third and fourth years at the University. The study aimed to capture students who had substantial exposure to nursing education and research coursework, allowing a more accurate assessment of their research competence as they neared programme completion. The researchers sampled 191 nursing students using the Raosoft sample size calculator. First- and second-year students were excluded to

maintain consistency, as these students had limited exposure to research content. The study focused on third- and fourth-year nursing students, who were at a critical juncture in their educational journey. These students had accumulated substantial theoretical knowledge and practical experience, making them well-positioned to evaluate their research competence. The third- and fourth-year students provided valuable insights into their preparedness to utilize research in their future careers.

Table 1: Demographic Data of Respondents

Sex	**Frequency (f)**	**Percentage (%)**
Male	130	68.06%
Female	61	31.94%
Level of Education	**Frequency (f)**	**Percentage (%)**
Level 300	146	76.44%
Level 400	45	23.56%
Total	**191**	**100.0%**

2.4 Data Collection Methods

The research adopted a modified version of the research attitude scale instrument developed by Larson (Halabi & Hamdan-Mansour, 2010), utilising a 5-point Likert scale ranging from "strongly disagree" to "strongly agree." The 22-item tool had four subscales: research abilities (7 items), usefulness of nursing research (5 items), personal research interest (3 items), and using research in clinical practice (7 items). A high score indicated a positive attitude. The tool's reliability was based on Cronbach's alpha (α) = 0.74 for the original scale and α = 0.64–0.76 for subscales. The study relied on an overall reliability of α = 0.83, with the reliability of the subscales ranging from α = 0.70 to α = 0.83.

2.5 Data Collection Procedure

The primary data collection tool was a questionnaire designed to assess research competence. Key sections included research abilities, perceived usefulness of research in nursing, personal interest in conducting research, and the application of research in clinical practice. Each section utilised standardised, closed-ended questions, ideally measured on a Likert scale, to facilitate quantitative

analysis. The questionnaire was validated for clarity, reliability, and relevance, ensuring it accurately measured research competence and yielded reliable results for analysis. The finalised questionnaire was distributed to the sample population in person. Participants were given ample time to complete the questionnaire outside their lecture hours. Responses were systematically collected and stored in a secure database to ensure data integrity and confidentiality. Monitoring response rates was crucial to ensure adequate representation. In cases of low response rates, reminders were sent to participants to achieve the desired sample size and generate statistically meaningful results. A data quality check was performed to ensure the completeness and accuracy of the collected data. This process involved screening for missing responses, verifying data entry for manually recorded data, and addressing any inconsistencies or discrepancies in responses.

3.0 DATA ANALYSIS

Quantitative data from the questionnaires were analysed using Jamovi statistical software. Means and standard deviations were used to assess the descriptive statistics while inferential statistics, such as t-tests, were used to assess differences in research competence between sex and level of education.

Table 2: Scoring System for Research Competence

Arbitrary Value	Mean	Description
5	4.20-5.00	Very High competent
4	3.40-4.19	High competent
3	2.60-3.39	Moderate competent
2	1.80-2.59	Low competent
1	1.00-1.79	Very low competence

Ethical Considerations

The researchers obtained ethical approval from the Institutional Review Board of Christian Service University. Ethical standards were maintained throughout the study. Participants provided written informed consent, outlining the study's purpose, procedures, and the voluntary nature of their participation. Confidentiality was strictly upheld by anonymising personal data, and only the research team had access to the raw data, which was securely stored.

4.0 RESULTS AND DISCUSSION

Level of Research Competence Among Nursing Students

Table 3: Research Competence (N = 191)

Domain	Mean	SD	Interpretations
Usefulness of Research	4.297	0.5600	Very High
Personal Interest in Research	3.564	0.7373	High
Research Abilities	3.283	0.7654	Moderate
Using Research in Clinical Practice	2.975	0.7877	Moderate
Overall Research Competence	**3.421**	**0.4302**	**High**

Legend:1.00–1.79 = Very Low | 1.80–2.59 = Low | 2.60–3.39 = Moderate | 3.40–4.19 = High | 4.20–5.00 = Very High

4.1 Usefulness of Research

The findings revealed that nursing students scored the dimension Usefulness of Research with a mean score of 4.297 and a standard deviation of 0.5600. Based on the interpretation scale employed in this research, this score is classified as Very High (M= 4.20–5.00). This indicates that the students strongly believe in the importance and usefulness of research in nursing. It reflects a shared assumption among respondents that research plays a vital function in contributing to nursing knowledge, improving evidence-based practice, and ensuring excellent patient care.

The very high mean score in this domain reflects the students' recognition of research as an essential foundation for clinical decision-making and continuous enhancement of healthcare outcomes. Their responses reflect theoretical awareness of research and its application, which is essential to the extent of informing a constructive research culture within nursing education and practice.

The very high mean score obtained in the *Usefulness of Research* category means that students within this private university in Ghana enjoy a well-established theoretical appreciation for the clinical practice and professional development function of research. This impression aligns with global educational trends that single out the integration of research in nursing programmes as a core competency. According to Chen et al (2021) the ability to value and leverage research forms the basis of evidence-based practice, widely regarded as the gold standard for delivering safe, effective, and quality care. Sustained agreement by students on statements that are aligned with the applied utility of research may also reflect the impact of increased exposure to research concepts across their training, despite its limited applicability. It is noteworthy that despite the difficulties characteristically associated with research involvement within low-resource settings, the students demonstrated a rigorous conceptual alignment to current nursing frameworks that facilitate learning integration of academe and practice.

This finding is consistent with Chen et al. (2020) who emphasized that nursing students perceiving research as applicable to practice are more likely to meet it concretely during and after training. Similarly, Hu et al (2022) found that positive attitudes toward research are an indicator of substantial value for the use of research in professional settings. The strong ranking of the value of research by these students may be partially accounted for by faculty emphasis on the theoretical foundation of nursing science and institutional communication that promotes research as a means to professional growth (Ortega-Lapiedra et al 2023). These findings are promising because they suggest that although students are not yet in the process of establishing fully developed technical research skills, their underlying assumptions about the worth and purpose of research are already in place, a key pre-requisite for establishing long-term research expertise.

While the results of this research indicate a very high perceived usefulness of research by nursing students, some studies are doubtful about the validity and sincerity of these reports. One such study is Zhang et al (2024) who found that although students had reported a positive attitude on self-report scales towards research, this was not always translated into active usage or implementation in practice. In instances where research is taught as an intellectual or theoretical necessity, rather than as a real clinical tool, students will understand its value cognitively but be inadequately enthused or trained to use it. Such disagreement usually stems from curriculum restrictions, insufficient role models for research abilities, or a lack of experience to see how research influences real-life, practical decision-making. Hence, the positive scores observed within this domain could be a normative or idealized view of what a system of beliefs must be and not a true indication of lived academic or clinical experience.

In addition, Yang et al (2022) quote that students may rate research as extremely useful due to social desirability bias, particularly when research is promoted by teachers or incorporated strongly within the formal curriculum. They further point out that positive attitudes may be overstated when students come to understand that such views are institutionally favored. This can lead to a form of superficial compliance in which students give lip service to the usefulness of research rhetorically but opt out of it once they are in practice settings that are not well-endowed with research culture. In such settings, the gap between theoretical appreciation and practical application of research is much wider. These paradoxes highlight the need for ongoing evaluation of not just attitudes, but behavior, skill utilization, and organizational supports that lead perceived research usefulness to actual evidence-based practice

4.2 Personal Interest in Research

The average score for the construct *Personal Interest in Research* was 3.564, with a standard deviation of 0.7373, as presented in Table 4.2. As per the interpretation scale applied in this study, this comes

under the category "High," which implies that students, generally, have an active interest in research-related matters and activities. Although, heir perceived value of research, this score shows a positive inclination among nursing students to apply research beyond the minimum requirement of coursework.

The significant mean score of 3.564 in the domain *Personal Interest in Research* shows that the majority of nursing students are highly interested in personal research, suggesting that research is viewed as a course of both personal and intellectual interest, rather than a mere curriculum requirement . This concurs with studies by Saab et al (2021) who emphasized that research interest at entry is one of the most effective indicators of participation in research among nurses in the future. Strong personal interest is important to foster future clinical researchers and evidence-based practitioners. Further, students who perceive research as relevant to them will be more likely to move on to additional study, become creative in the field of medicine, and lead quality improvement projects in their employers' offices in the future. Thus, this base of interest is a necessary investment in the future capital of the profession.

Supporting this view, a study by Al Gharibi et al. (2020) determined that undergraduate nursing students showing personal research interest were much more likely to engage in postgraduate research activities or apply research to clinical practice. Their interest was often generated through exposure to research-focused mentors at the outset and being able to undertake real-world projects. The students in our study, in expressing their strong personal interest, stand to enter into such careers, if only their interest can be sustained through the provision of opportunity, role models, and encouragement on the part of the institution. In environments where research is presented as forward-thinking and directly relevant to the care of patients, students will be more apt to internalize its relevance and more likely to envision themselves as practitioners but as contributors to science in nursing as well.

4.3 Research Abilities

The average score of domain *Research Abilities* was 3.283 with a standard deviation of 0.7654 and was under the category of "Moderate" on the interpretation scale used in this study. It indicates that the students do have some level of confidence about being capable of understanding and doing research, but gaps are significant and can demotivate their active participation in research work. This domain reflects students' self-reported perceptions of research problem identification, methodology knowledge, data analysis, and writing of the research report. A moderate score suggests that although the students are likely to have some training in research skills, they may not yet feel confident to carry out independent research or critically appraise studies in a university or clinical setting. These finding underscores renewed emphasis on the importance of continued hands-on skill acquisition and active research participation in the nursing curriculum.

The modest average score of 3.283 for the Research Abilities domain suggests that while students possess a rudimentary understanding of research principles, they do not yet have complete confidence in their technical skills and critical thinking capacity to research on their own. This level of perceived competence is not surprising among undergraduate nursing students, especially in settings where research is studied as a theoretical course and not an experiential activity. Ferreira et al. (2022) contend that the majority of nursing students demonstrate an understanding of research processes but are unable to apply them in practice, even more so in areas such as statistical analysis, critical appraisal, and methodology decision-making. The observation likely reflects a curriculum that emphasizes knowledge acquisition rather than research application via practical activitie; hence, inadequately preparing the students for independent inquiry despite exposure to content theory (Alilyyani et al.,2024)

These findings are also reflected in the study of Silvia (2022) who found that undergraduate nursing students from several countries ranked their research skills lower compared to their attitude or interest in research. This pattern suggests a discrepancy between what the students value and what they think they can do. Students can be aware that research is valued and have an interest in conducting research, but perceived competence lags due to a deficiency of skill development opportunities. Fewer research mentors available, minimal student involvement in faculty research, and limited exposure to applied research skills are some of the factors resulting in this outcome. Therefore, the low rating in this category may not reflect a lack of potential but a system-level shortage in equipping students with the clinical or academic practice skills and confidence to apply their research knowledge (Li et al., 2024).

While the moderate perceived research competence identified in the present study receives empirical support from many findings, there are some studies indicating more positive attitudes, suggesting that the students may rate themselves as underachievers in situations of anxiety regarding academic work, cultural humility, or lack of feedback. Farčić et al (2020) observed better-than-expected research project outcomes from students receiving structured research courses when they rated themselves modestly competent on a first measurement. Here, students may acquire a fixed mentality about research being difficult, influencing their self-judgment rather than their ability (Liou et al 2020). Additionally, the impostor syndrome effect that is commonly witnessed among high-performing students makes them downplay their abilities despite possessing them. Therefore, moderate grades may be a confidence issue rather than a deficit of skill, and supportive learning environments and positive reinforcement may improve students' perceived and actual competence considerably (Guerrero et al 2022).

4.4 Using Research in Clinical Practice

The domain *Using Research in Clinical Practice* attained a mean score of 2.975 and a standard deviation of 0.7877. On the interpretation scale used in this study, the score is at the "Moderate" level. This means that even though students grasp the use of research in informing clinical decision-making, the practical use of research in practice remains developing or random.

This construct captures students' perceived practice and proficiency in working with research results in real-life clinical settings, such as using evidence-based practices, engagement in quality improvement practices, or referencing empirical research in patient care practices. The moderate score may be an indication of a variety of challenges, like little clinical autonomy, absence of mentors, or lack of adequate exposure to research-supported practice settings. This score is particularly significant because it shows the ultimate purpose for which nursing research is present: to enhance patient outcomes through evidence-based practice.

The moderate mean score of 2.975 in the domain of *Using Research in Clinical Practice* indicates that students might be aware of the theoretical importance of evidence-based care but are not yet showing an ability to use research in real clinical settings. This is a common thread throughout much of the nursing literature, where research translation into practice remains one of the most challenging areas of competence. As recognized by Abu-Baker et al. (2021), even graduate nurses, research utilization is often hindered by circumstances such as time constraints, workload, unavailability of research materials, and insufficient institutional support. For their undergraduate counterparts, these are compounded by limited clinical autonomy, dependence on mentor nurses, and short rotation stays, which reduce exposure to evidence-informed practice. Therefore, the score not only measures students' preparedness but also the structural and pedagogical limitations that they are up against in clinical contexts.

This finding is aligned with the work by Saunders and Vehviläinen-Julkunen (2016) who stated that while nursing students are likely to commit to evidence-based practice, they are seldom exposed to and witness it during placements. Their clinical teachers may be more reliant on routine practice or institutional tradition than on the latest research findings, thereby diminishing opportunities for students to observe the practical application of research. (Mikkonen et al 2020). Moreover, students may lack the critical appraisal skills to evaluate the quality or applicability of research in clinically time-sensitive situations (Alqahtani et al., 2020). Thus, the moderate score could reflect a disconnection not of awareness or interest, but of experiential education and institutional culture. Such challenges serve as a call for nursing education programmes to form stronger intentional linkages

between scholarly education and practice, through activities like evidence-based simulations, interdisciplinary case review, and working partnerships with research-engaged hospitals.

While the moderate rating for Using Research in Clinical Practice may suggest little transfer of evidence into clinical practice, other studies disprove this assumption by highlighting settings where nursing students demonstrate much implementation of research at the bedside. For example, research by Falcó-Pegueroles et al (2021) found that when students are placed in evidence-based practice-oriented clinical environments with open access to current literature, their application of research in decision-making improves significantly. In such circumstances, students actively participate in quality assurance activities, are engaged in clinical audits, and make well-informed recommendations on care practices. This suggests that humble self-evaluation might be pointing towards the absence of such supportive milieux rather than resistance or incapacity to implement research into clinical practice (Dagne and Beshah, 2021)

4.5 Research Competence

The overall mean score for *Research Competence* among the 191 nursing students was 3.421 with a standard deviation of 0.4302. Using the interpretation scale employed in this study, the score falls in the "High" category. This indicates that the students rate themselves as having a high degree of research competence in the major areas: Usefulness of Research, Personal Interest in Research, Research Abilities, and Using Research in Clinical Practice.

This high mean score suggests a positive research attitude among the participants and an ability to learn from it. However, the low standard deviation (0.4302) also indicates that there is, nevertheless, a degree of heterogeneity in views and perhaps by varying year levels, individual experience, or familiarity with research-informed methods of teaching.

The overall mean score of 3.421 confirms that nursing students in this sample self-perceive as having high research competence. This indicates an overall healthy research environment within the academic institution and an affirmation that efforts at exposing students to research theory and practice yield dividends. The high score is particularly noteworthy in a developing country, where infrastructural issues and resource paucity are likely to militate against the development of robust academic research programmes. According to Grande et al. (2021) undergraduate nursing students' perception of research competence is strongly linked to institutional commitment to research-oriented education, faculty support, and availability of electronic research resources. Therefore, students' confidence may be a reflection of both curricular emphasis and overall institutional support for research engagement.

Furthermore, this finding aligns with studies such as that of Lam et al. (2020) who argue that students in nursing who are exposed to research early during their course of study and consistently supported throughout their training are more inclined towards higher competency and readiness to participate in evidence-based practice. In this present study, the high scores in areas such as the Usefulness of Research and Personal Interest, no doubt, contribute to the overall competence rating, marking the interdependence of attitude, interest, aptitude, and application. These findings are significant in that they suggest nursing students appreciate the importance of research and see themselves as important contributors to the field, increasingly setting the stage for a future nursing workforce better positioned to engage in inquiry, innovation, and evidence-based practice.

While the overall high rating of research ability is comforting, studies question the validity of self-rated competence when objective performance measures are lacking. Madhavanprabhakaran et al. (2023) indicated that while nursing students rated themselves very highly in research ability, their actual performance on hands-on research activities, such as data analysis or literature synthesis, tended to reflect huge skill gaps more frequently than not. This means perceived competence is not necessarily synonymous with real competence. In academic research primarily examines in study environments, learners may tend to over-assess themselves on how ready they are; therefore, there is variation in capability and confidence. Hence, students of this particular study demonstrating a high level of research can make that perception against experience thoughts from exposure within classroom contexts, and hence over-reading and anticipation thereof, instead of practising real-world competence.

Additionally, others have argued that cultural and contextual factors may make students overstate their levels as a function of academic pressure or social desirability. Castro et al (2025) studied nursing students under competitive academic condition where, through questionnaires, they were observed to overreport research confidence, but when interviewed, owned up to having performed independent research activities seldom. This trend may be exceptionally robust in settings where research capability is most valued, and students do not wish to admit shortcomings lest this negatively affects their scholarship skills. Hence, this study's robust overall research capability score must be interpreted with care. In the absence of triangulation through faculty evaluation, project-based assessment, or observation of real research work, self-report measures can yield a partial picture of students' actual strengths.

The finding of high aggregate research capacity in nursing students has significant implications for nursing education and workforce development. Educationally, Zhu et al (2025) suggest that methods of bringing education into research, be it lectures, assignments, or directed projects, affirmatively strengthen attitudes and knowledge. This allows instructors to push forward by pushing students' active involvement in actual research. Formal mentorship schemes, undergraduate research

conferences, and publication schemes can enable perceived competence to be converted into actual research contribution (Chen et al, 2020). Furthermore, universities need to formalise research competency as a core learning outcome, assessed through examination and active exposure to study design, data interpretation, and ethical research practice (Tuomikoski et al, 2020).

Munangatire and McInerney (2020) posit that professional front, excellent research competency, and self-reporting results show that the next generation of nurses is prepared to deliver evidence-based practice and clinical innovation. However, for such potential to be triggered in the real world, health systems must equip the graduates with working environments that value and utilise their abilities (Salminen et al, 2021). This entails ensuring access to current research databases, welcoming nurses to clinical decision-making arenas, and financing ongoing research education via workshops and continuing professional education. Additionally, policymakers and employers ought to understand that developing research-capable nurses is not a matter of luxury but a requirement for enhancing health care quality, safety, and efficiency. Ideally, the premise is that subjective research competence is a good starting point. In contrast, ongoing competence is contingent upon the degree to which systems, education, and clinical practice promote, support, and expect research work as a professional habit.

Table 4. Independent Samples t-Test: Research Competence by Sex

Group	N	Mean	SD
Female	61	3.649	0.5109
Male	130	3.398	0.3866

		statistic	df	p
Research Competence	**Student's t**	**1.077**	**189.0**	**0.283**

To determine whether there was *no statistically significant difference* in research capability between female and male nursing students, an independent samples t-test was conducted. The mean research capability scores for 61 females (M = 3.649, SD = 0.5109) and 130 males (M = 3.398, SD = 0.3866) were compared. Independent t-test assumptions were checked before analysis. Independent samples t-test results indicated that the difference in mean scores observed was not statistically significant, t (189) = 0.975, p =.0283. The difference in means between the two groups was 0.071 with a 95% confidence interval from -0.072 to 0.215, meaning the true population mean difference likely contains zero.

The findings suggest that sex is not a significant predictor of self-rated research skills among nursing students in this study. Although female students had a slightly higher mean value, their effect size was

zero, and the difference was statistically not significant. This suggests a generally equal level of research preparedness in male and female groups, consistent with the most recent educational trends promoting equal academic counselling irrespective of sex.

The fact that no significant difference also suggests that other predictors, such as educational level, exposure to research training, or intrinsic motivation, may play a more crucial role in impacting research ability. Future studies can explore these other predictors using multivariate models. From pedagogical and policy perspectives, the result supports gender-free research training programmes to provide equitable access and opportunity for scholarship skills development among all nursing students.

Table 5. Independent Samples t-Test: Research Competence by Level of Education

Group	N	Mean	SD
Level 300	146	3.410	0.3803
Level 400	45	3.455	0.5664

		Statistics	df	p
Research Competence	**Student's t**	**-0.6060**	**189.00**	**0.545**

To determine whether research ability was *not statistically significantly* different depending on the educational level, students in Level 3 (N = 146) and Level 4 (N = 45) were compared through an independent samples t-test. From the results, Level 4 students slightly outscore Level 3 students by slightly increasing their mean score for research ability (M = 3.455, SD = 0.5664) over Level 3 students (M = 3.410, SD = 0.3803). This would reflect a trend where students at advanced levels would likely perceive themselves as more capable of doing research-related tasks and applications.

The independent samples t-test for this condition revealed that the difference in research competence scores found was not significant, t (-0.6060), p = 0.545. The mean difference of 0.045 (95% CI: -0.136 to 0.226) is well within the limits of random variation and indicates that the level of education made no practical difference to self-reported competence.

This analysis shows no statistically significant difference in research capacity between Level 300 and Level 400 students. Although the Level 400 students scored marginally higher, the difference is minimal and not statistically significant. This may reflect a consistent embedding of research-related content across levels, suggesting that students build their competence early and maintain it steadily throughout their studies.

Also, the relatively higher variability among Level 400 students (SD = 0.5664) compared to Level 300 (SD = 0.3803) suggests variable levels of self-perception within the group, which may be

due to variable clinical exposures or individual experiences with research modules. The findings indicate the necessity for sustained and guided practical research training at all levels for consistent competency.

5.0 CONCLUSION AND RECOMMENDATIONS

The results of this study provide an in-depth perception of nursing students' research ability in the context of a private university in Ghana. The results show a relatively positive research attitude, with students demonstrating high levels of perceived competence, particularly in perceiving the usefulness of research and personal research interest. These attitudes are essential foundations for establishing a research-based nursing culture, especially in the context of evidence-based practice and continuing professional development. Inferential analysis also verifies that demographic factors such as sex and level of education hold no specific influence on research ability among students. This is a sign of fairly uniform exposure to research education across different student groups, a testament to the value of standardised curricula, but also one of the risks of more generalized individualized interventions where required. The lack of significant differences also implies that interventions to develop research competence can be implemented extensively across the student population without necessary segmentation.

The study made the following recommendations. Firstly, there should be integrated experiential research learning into the curriculum. While students reported high esteem for research utility, their modest scores in applied domains demonstrate a need for practical experience. Nursing education needs to incorporate research-based activities at different points of training. This can include student-designed mandatory research projects, critical appraisal classes, and assignments that force the students to deal directly with published research. Moreover, partnerships between academic staff and clinical researchers need to be fostered to enable students to observe or assist in real research.

Secondly, research mentorship and faculty capacity should be strengthened. Faculty development programmes can be introduced to teach nursing faculty how to mentor students in the research process. Academic institutions must invest in developing a culture of mentorship whereby senior faculty involve students in research design, implementation, and dissemination. Pairing students with research mentors can foster greater confidence in managing research complexity, increase research literacy, and sustain students' interest in scholarly inquiry.

Furthermore, the gap between research and clinical practice should be bridged. To bridge the gap between research knowledge and clinical practice, partnerships between universities and clinical facilities must be formalized. These partnerships can expose students to evidence-based practice

environments where research findings inform daily decision-making. Clinical rotations should include case discussions where students are requested to find relevant research evidence, determine its quality, and discuss its relevance to the delivery of care.

Moreover, continuous assessment and competency-based evaluation should be promoted. Research skills must be assessed using a mixture of formative and summative approaches that does not only emphasize learning but also the use of skills. Rubrics for evaluating research proposals, data analysis issues, critiques of journals, and conference papers can be employed to track student progress and identify areas for improvement. Regular reflective activities and portfolio-based assessment can also encourage students to internalize the value of research as part of their training.

Also, policy environments favourable to undergraduate research should be created. Institutional administrators and policymakers should create favourable environments for undergraduate research. This includes budgetary allocation in favor of student research efforts, creating institutional review boards sensitive to student research timelines, and rewarding or incentivizing excellent student projects. Policies should also allow interdisciplinary research collaboration and publication opportunities to build research capacity among healthcare programmes.

Lastly, a sustainable research culture should be fostered in nursing education. Alongside stand-alone interventions, there has to be a long-term vision to create a sustainable research culture. Institutions must position research as an integral professional skill within nursing. This must be underpinned by values of inquiry, evidence-based thinking, and reflective practice. Students must graduate not only with an understanding of the principles of research but also with the attitude and confidence to build the knowledge base of nursing by taking part in research throughout their lifetime.

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