Original Research Article

The Usefulness of Peer Tutoring and its Impact on Nursing Students' Academic Performance, Psychological Empowerment, and Satisfaction: Pre-Post Design

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Abstract

Introduction: The entry to a professional course such as nursing is challenging for the students, due to its multifaceted curriculum and learning expectations.

Objectives: This study investigates the impact of peer tutoring on academic performance, psychological empowerment, and satisfaction among first-year nursing students.

Methods: A quantitative approach with one-group pre-test post-test design was utilized. The study participants were 104 students, with 98 completing both pre- and post-test assessments.

Results: Findings revealed a significant increase in academic performance following peer tutoring ($t = 8.97$, $p < .001$), particularly among female participants ($t = 4.14$, $p < .001$). Analysis of perceived usefulness showed higher ratings among peer tutors compared to tutees ($t = 4.380$, $p =< .000$). Additionally, students with lower GPAs (Grade Point Average) demonstrated significant improvement in academic performance post-tutoring in the ANOVA ($F = 6.214$, $p < .001$). A positive correlation was found between psychological empowerment and the perceived usefulness of peer tutoring. Peer tutors reported high levels of satisfaction and positive experiences ($r = 0.639$, $p = 0.001$).

Conclusion: This study emphasises the value of peer tutoring in enhancing academic outcomes and highlights the significance of demographic variables in educational interventions. The need for widespread implementation of peer tutoring programs, personalized approaches addressing gender biases, and comprehensive support for students with diverse academic backgrounds would enhance academic outcomes. The correlation between psychological empowerment and the perceived usefulness of peer tutoring climaxes the importance of addressing students' psychological needs in educational interventions.

Keywords

Peer tutoring, nursing students, academic performance, psychological empowerment, satisfaction

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Introduction

Nursing students face many challenges during their course of study at the university, especially during their first year (Kim et al., 2021). Approximately six percent of nursing students usually fail in their first year, and many express their intention to withdraw from nursing (Dante et al., 2016). Student dropouts can be costly, and nursing shortages have recently been reported worldwide. Having dropouts from the nursing curriculum further contributes to this shortage (Lewis, 2020). Therefore, strategies are sought to improve nursing students' academic experience and success in the first year. One of those strategies is peer tutoring, which has been shown to enhance students' comprehension, confidence,

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and integration into the nursing profession (Irvine et al., 2018). Peer tutoring, also known as peer learning, refers to a teaching strategy in which students learn from each other (their peers) without direct involvement of the lecturer. This strategy has been used to foster students' collaboration, independent learning, and reflection (Palsson et al., 2017).

Peer tutoring has emerged from social learning theories as a teaching strategy to enhance knowledge and understanding through interactions among students (Palsson et al., 2017). As defined by David (2014), peer tutoring involves students learning from one another in both formal and informal settings with the assistance and support of individuals matched in status. These individuals do not possess professional teaching credentials but assist one another in the learning process. Peer tutoring focuses on students' learning rather than the teacher's teaching. It is also known by various terms, such as peer teaching, peer instruction, and peer mentoring, enabling students to contribute to each other's understanding, ideas, and skills (Choi et al., 2021). Tutors provide assistance and support to their tutees, allowing them to expand their knowledge through collaboration and interaction in a safe environment (Andersen & Watkins, 2018). This non-threatening learning environment has been shown to reduce students' anxiety (Williams et al., 2015).

It has also been shown that peer tutoring has the potential to improve nursing students' academic performance and reduce their failure rate (Kim et al., 2021). In this study, tutored students achieved higher grades than did those who did not. They also found that tutoring sessions were beneficial and expressed a desire to see this method implemented in other courses. In a recent study, Kim et al. (2021) argued that peer tutoring provides nursing students with a second chance to ask questions, clarify inconsistent information, and gain confidence in their knowledge and skills. Peer tutoring has been shown to be a valuable additional teaching strategy for enhancing the learning effectiveness (Im Kang et al., 2021). Thomson et al. (2014) investigated the impact of peer tutoring on nursing students during a research course. Most students found this method useful, and the authors argued that peer tutoring can motivate student learning.

Although peer tutoring has been shown to be beneficial for general students and nursing students in particular, it is important to acknowledge that some problems might arise from its implementation (Palsson et al., 2017). Some students reported that with peer tutoring, they had less time to perform hands-on skills in the clinical setting, some clashed with their peers (tutors), and others mentioned damaging competition between them (Austria et al., 2013; Stenberg & Carlson, 2015). To ensure the effectiveness of peer tutoring, it is crucial to establish a clear structural organization of peer tutoring sessions. This organizational structure should empower each student to feel a sense of purpose and competence while benefiting from their improved knowledge and self-efficacy. Psychological empowerment plays an important role in this context by providing students with a sense of purpose, competence, and impact on their education (Bradbury-Jones et al., 2010). Psychological empowerment, as defined by Spreitzer (1995), relates to how students experience their studies and perceive their role in an academic setting. Palsson et al. (2017) found that psychological empowerment tends to improve over time as peers learn from each other.

In an engineering course, peer tutoring was implemented, where senior students tutored first-year students (Saunders, 1992). It has been shown that first-year students were very satisfied with this strategy and expressed a desire to implement it in more courses. Similarly, in a chemistry course, students who participated in peer tutoring reported positive feedback and achieved better academic performance than their non-tutored peers (Lundeberg, 1990). However, it is worth noting that these studies are dated, and the need for updated results is crucial. In a recent meta-analysis, Choi et al. (2021) showed that peer tutoring does not yield high levels of student satisfaction. However, the authors argue that this could be due to a lack of clarity regarding peer tutoring as a relatively new teaching strategy. Therefore, it is important for instructors to adequately train, supervise, and observe tutoring sessions to enhance students' satisfaction with this method (Andrews & Manning, 2015).

Peer tutoring is a well-established evidence-based instructional strategy widely used in many subjects. Despite their continued popularity, comprehensive research on their effectiveness and benefits remains limited. Therefore, this study is significant as there have been no such studies conducted on nursing subjects in the Gulf countries or Oman. Hence, this study aims to shed light on the benefits of peer tutoring for both peer tutors and tutees, ultimately improving teachers' experiences in the course taught.

Literature Review

The development of skills in nursing students is crucial, as it enables them to practice with confidence as nurses. The nursing curriculum includes 70 percent of nursing skill procedures, starting from basic skills in the first year and progressing to higher levels in the fourth year. As nurses deal with human beings, they need to be competent and self-confident in performing procedures. To facilitate this, the nursing faculty must ensure that students are trained in nursing skills with competence and self-confidence.

The Usefulness of Peer Tutoring and Academic Performance

It has been shown that peer tutoring has the effect to improve nursing students' performance through their academic achievements and decrease failure rate (Kim et al., 2021). In a recent study, Kim et al. (2021) argued that peer tutoring allows nursing students to have a second chance to ask

questions, clarify inconsistent information, and acquire the necessary confidence in knowledge and skills. Peer tutoring has been shown to be a useful additional teaching strategy to be used to enhance the efficacy of learning (Im Kang et al., 2021). The peer tutoring sessions are conducted under the close supervision of the instructors in the course and serve to enhance the traditional classes taught by the teacher. This approach provides an opportunity for peers to engage in a collaborative learning environment, promoting open discussion, clarity on the subject matter, student responsibility for their own learning, and the development of critical thinking skills.

Peer tutoring has beneficial effects on both tutors and tutees. Tutors can reinforce their learning and allowed us to prepare future nursing educators. For the tutees it will provide a more active learning, less anxiety, quick responses, and students will have a greater ownership of their learning.

Peer tutoring has numerous benefits in nursing curriculum as well. It can serve as an additional free strategy to educators' traditional lectures (Li et al., 2018). Additionally, it can reduce the burden on faculty, freeing up more time to focus on other tasks, and enhance students' education and learning outcomes.

Psychological Empowerment

Psychological empowerment was defined by Spreitzer (1995) as how employees experience their work and how they perceive their role in the organization. In Academia, psychological empowerment is defined by how students experience their studies in addition to their own personal beliefs about their role in the academic setting. In peer tutoring, Palsson et al. (2017) have found that psychological empowerment is improved over time with peers learning from each other.

The objectives of this study are threefold: (1) to investigate the impact of peer tutoring on novice nursing students, (2) to explore the relationship between academic performance, perceived usefulness, psychological empowerment, and demographic characteristics, and (3) to understand peer tutors' experiences.

Methods

Research Approach and Design

The study used a quantitative approach and a one-group pre-test post-test design to investigate the impact of peer tutoring on academic performance.

Population and Sample

Conducted at the College of Nursing, Sultan Qaboos University (SQU), this study utilized a convenience sampling method. All nursing students enrolled (104) in Fundamentals of Nursing courses during the Fall 2023 semester were invited to participate. To be eligible, participants needed to fulfil specific criteria such as being registered in the BSN nursing program at the College of Nursing SQU, enrolled in Fundamentals of Nursing course during Fall 2023, and be willing to participate voluntarily. Using G-power software, a sample size of 90 students was determined to be necessary for the pre-post-test design, based on a moderate effect size ($f2 = 0.3$), a significance level of 0.05, and 0.80 power.

Data Collection Instruments

Data collection involved a self-report structured questionnaire for nursing students, which consisted of four sections.

1. Knowledge: The Knowledge scale was specifically developed for this study by the course faculty. It includes 12 multiple-choice questions designed to assess understanding, application, and higher-order thinking skills based on Bloom's taxonomy. The questions were formatted to follow the NCLEX style and cover key topics of the Fundamentals of Nursing course, with a focus on nutrition. Two reviewers evaluated the questions for clarity and difficulty to ensure their appropriateness. The scale was peer-reviewed by subject experts to ensure its validity and reliability.

2. Usefulness:A questionnaire by Thomson et al. (2014) was used, featuring 18 statements assessing peer tutoring utility. Participants responded on a 5-point Likert scale, ranging from "strongly disagree" (1) to "strongly agree" (5). The minimum possible score is 18, and the maximum is 90. Higher scores indicate a greater perceived usefulness of the peer tutoring. The scale demonstrated high reliability, with a Cronbach's alpha value of 0.94.

3. Psychological Empowerment (PE): Spreitzer's PE scale (Cronbach's alpha = 0.91 (Azizi et al., 2020) was employed to measure participants' empowerment after peer tutoring. This scale is used to understand the psychological empowerment levels of peer tutors and tutees. It has 12 items to assess four sub-dimensions like meaning, competence, self-determination, and impact with a seven-point Likert scale ranging from 0 – very strongly disagree to 6- very strongly agree. The validity and reliability of the tool are very good in many studies and a Cronbach's alpha was 0.91 in a study among the nursing students (Azizi et al., 2020). A higher score means a higher degree of psychological empowerment.

4. Peer Tutor Experience: The Peer Tutor Experience scale, using the TTEQ scale developed by Brannagan et al. (2013), was utilized. This scale has been shown to be a reliable measure (Alfaro et al., 2019). The Peer Tutor's Teaching Experience Questionnaire (PTEQ) is a seven-item questionnaire using a five-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. The minimum score is 7, and the maximum is 35. Higher scores reflect a more positive and satisfying peer tutoring experience. The questions focused on common curricular concepts such as

communication, critical thinking, therapeutic intervention, altruism, and accountability, and management skills.

Intervention Description

The intervention spanned four weeks, during which the following activities took place:

Week 1: Traditional lecture methods were used by teachers to introduce the course content. This week served as a baseline for the students' knowledge and skills.

Week 2: Peer tutoring was introduced. Ten students per class volunteered to be peer tutors. These volunteers were trained using a comprehensive microteaching criteria checklist, which included aspects such as lesson planning and organization, content knowledge, communication skills, classroom management, instructional delivery, assessment and feedback, adaptability, time management, confidence and professionalism, and overall effectiveness.

Week 3: A training session was provided for all volunteered tutors using the microteaching criteria checklist. The training included instruction on effective teaching strategies, communication skills, and how to facilitate group learning. This session also provided opportunities for tutors to practice their teaching methods and receive feedback from instructors.

Week 4: Peer tutoring sessions began. Tutors were responsible for teaching small groups of five students each. The tutoring sessions focused on reinforcing the topics covered in the lectures, such as basic nursing procedures, patient assessment techniques, and clinical decision-making. Tutors provided additional explanations, answered questions, and facilitated group discussions to enhance understanding. The intervention concluded with a post-test to assess academic performance. Additionally, the Usefulness and Psychological Empowerment scales were administered to evaluate the impact of the intervention.

Data Collection Procedure

Trained research assistants were responsible for administering the pre-test, post-test, and questionnaires. These research assistants collected data immediately after the teacher left the classroom to minimize any potential influence from the presence of faculty members. The pre-test was designed to capture baseline academic performance and understanding of the course material. Following the intervention, the post-test assessed improvements in academic performance. Additionally, Usefulness and Psychological Empowerment scales were evaluated, and Peer Tutors were assessed for their experience. To ensure confidentiality, all data were anonymized before analysis, and participants were assured that their responses would be kept private and used solely for research purposes.

Ethical Considerations

This study was conducted after obtaining ethical approval from the Ethics and Research Committee of the College of Nursing. Participation was voluntary and all participants provided informed consent after a clear explanation of the study's nature and purpose. Participants were assured of their right to withdraw from the study at any point without consequences. To safeguard privacy, code numbers were assigned to the participants, and only the research team had access to the participant list.

Data Analysis

Data analysis was performed using SPSS Statistics version 26.0 (IBM), with statistical significance set at $P < 0.05$. Descriptive statistics, such as means, standard deviations, frequencies, and percentages, were used to describe the sample demographics and study variables. Cronbach's alpha was used to assess the reliability of the scale. An independent t-test, ANOVA, and Pearson correlation coefficient were employed to examine the differences and correlations between study variables. Additionally, a paired t-test was conducted to evaluate the impact of peer tutoring on the academic performance of nursing students.

Results

The initial sample included 104 students who participated in the study after attending a pre-test session. However, during the post-test session, six of these students were absent, resulting in 98 participants. The participants, all first-year nursing students, ranged in age from 18 to 20 years, with an average age of 19.2 years ($SD = 0.64$). The study primarily involved female participants, comprising 76.5% of the sample, with nearly half of the participants (49%) were registered for 14 credits. Analysis of the participants' current Grade Point Average (GPA) (The GPA, or Grade Point Average, is a number that indicates how high the individual student scored in the course on average. Using a scale from 1.0 to 4.0) revealed that the largest group (32.7%) had no GPA, and the majority of participants (68.4%) lived on campus (Table 1).

Participants reported a mean usefulness score of 66.35 regarding peer tutoring. The mean score for psychological empowerment was 46.70, indicating a moderate level of empowerment experienced by participants after the intervention. Moreover, the mean score for Peer Tutor Teaching Experience was 27.25, representing a relatively high level of satisfaction and positive perception among peer tutors regarding their teaching experience (Table 2). Reliability analysis showed strong internal consistency within the

Table 1. Participants' Demographics (N = 98).

Variable		Frequency	Percent
Gender	Male	23	23.5%
	Female	75	76.5%
Role	Tutor	14	14.3%
	Tutee	84	85.7%
Number of Credits Registered	10.00	4	4.1%
	11.00	5	5.1%
	12.00	41	41.8%
	14.00	48	49.0%
CGPA	No GPA	32	32.7%
	Less than 2	12	12.2
	GPA 2–2.99	41	41.8%
	GPA 3 and above	13	13.3%
Where do you live?	Inside the campus	67	68.4%
	Outside the campus	31	31.6%

"Usefulness of Peer Tutoring" scale, with Cronbach's alpha of 0.97, indicating excellent reliability among its items. Similarly, the "Psychological Empowerment Questionnaire", "Peer Tutor Teaching Experience Questionnaire" and the Assessment Quiz displayed acceptable internal consistency, with Cronbach's alpha coefficients of 0.76, 0.74, and .71 respectively.

To assess the impact of peer tutoring on nursing students' academic performance, a paired sample t-test in Table 3 revealed a significant mean score increase (M = 2.34, SD = 2.59) from pre-test to post-test conditions (t (97) = 8.97, p < .001, 95% CI [1.83, 2.87]) (Table 3).

Academic performance post-test showed significant differences between males (M = 8.57, SD = 2.11) and females (M = 10.21, SD = 1.52) (t (96) = −4.14, p < .001) The pre-test results indicated no statistically significant difference in scores between males and females (t(96) = −2.244, p = .052), suggesting that both groups had similar baseline knowledge before the intervention (Supplementary Table 1&2). Notable distinctions emerged in the usefulness of peer tutoring between tutors and tutees (t (96) = 4.380, p =< .000) (Supplementary Table 2). ANOVA results indicated statistically significant differences in post-test scores across various GPA categories (F (3,94) = 6.214, p < .001) (Supplementary Table 3&4). Subsequent Tukey's HSD tests revealed that participants with GPAs less than 2.0 demonstrated significantly higher post-test scores (M = 11.75, SE = 0.25) compared to all the other groups (Supplementary Table 5).

Pearson correlation analyses were performed to evaluate the connections between study variables. A noteworthy correlation was found between psychological empowerment and the usefulness of peer tutoring (r = 0.639, p = 0.000), suggesting a moderate positive association between these factors as shown in Table 4.

Table 2. Descriptive Statistics and Reliability Test.

	N	Minimum	Maximum	Mean	Std. Deviation
Pre-test score	98	3.00	11.00	7.4796	1.95427
Post-test	98	5.00	12.00	9.8265	1.95427
Usefulness of Peer Tutoring	98	36.00	90.00	66.3571	12.10883
Psychological empowerment	98	24.00	72.00	46.7041	9.45113
Peer tutor Teaching Experience Questionnaire	14	23.00	31.00	27.2500	2.15473

Table 3. Paired Samples Test of the Academic Performance.

				95% CI of the Difference				
	Mean	SD	SD.Error Mean	Lower	Upper	t	df	Sig.(2-tailed)
Post- Pre-test	2.34694	2.58904	.26153	1.82787	2.86601	8.974	97	.000

Table 4. Pearson Correlation Coefficients.

	1	2	3	4
1.Pre-test	1	.053	−.060	−.173
2.Post-test	.053	1	.072	−.042
3.Psychological empowerment	−.060	.072	1	.639**
4.Usefulness of Peer Tutoring	−.173	−.042	.639**	1

Discussion

The results of this study shed light on various aspects of peer tutoring, its impact on academic performance, and its relationship to demographic variables among first-year nursing students.

The observed significance in the increase of mean scores from pre-test to post-test, attributed to the implementation of peer tutoring, has substantial implications for the field of education. This marked improvement in academic performance aligns with a body of research suggesting that peer tutoring contributes substantially to enhancing academic outcomes among students (AbdulRaheem et al., 2017; Irvine et al., 2018; Kim et al., 2021; Russ, 2019; Stenberg & Carlson, 2015; Stone et al., 2013; Zeneli et al., 2016). The cohesion of these results with previous research reinforces the current knowledge base, emphasizing that peer tutoring has a consistently positive effect on student performance. This outcome not only validates the effectiveness of peer tutoring programs, but also has significant implications for implementing these in educational settings. The findings of the study suggest that peer tutoring programs should be implemented and supported as an effective educational approach, especially in fields such as nursing education. Peer-assisted learning is an additional method for improving students' academic achievement, as this study shows the uniqueness of personalized student support programs and individual approaches to education (Muthalib et al., 2023).

The results showed a significant difference in performance between females and males in the post-test. However, there were no differences in the pre-test results between the groups. This indicates that both groups started with similar baseline knowledge and skills, and the observed differences in the post-test can be attributed to the intervention. The gender-based disparities in post-test results provided new information on the possible differences between male learners' educational experience from those of female ones. However, in all data analysis such as scores female students demonstrated higher results compared to their male colleagues suggesting that teaching programs may consider gender differences or establish new methods of learning. It was interesting to note that differences observed in the pre- and post-test results indicated differentiated educational experiences of male, as compared with female learners (Lorina, 2022). There were significant differences in scores between female and male participants; it is evident that gender-specific learning bias should be considered while creating tutoring programs or, alternatively, teaching procedures must reflect the observed disparities. The post-peer tutoring improvement in females' academic performance is confirmed by studies carried out by Tai et al. (2017) and Guerra-Martn et al. (2017). However, this result contrasts with several studies (AbdulRaheem et al., 2017; Palsson et al., 2017; Thomson et al., 2014), which found no impact of gender on improving students' academic performance through peer tutoring. Several variables could contribute to the identified gender-based disparities in this research, among which are learning preferences and styles; cultural expectations; persistence; subject domain differences. The findings show that gender might be one of the factors influencing achievement in peer tutoring and reveal another inconsistency worth studying. It is therefore essential to understand the core elements that drive this inequality because they can help in designing future education reforms targeted at addressing gender gaps arising from academic performances. Analysing and addressing these variations may lead to more equitable educational options that produce better outcomes for both male and female learners.

Further, the substantial distinction in perceived usefulness between tutors and tutees highlights varying perspectives regarding the effectiveness of peer tutoring. Significantly, tutors scored higher than tutees regarding the efficacy of peer-tutoring. The findings correspond to the observations of study involved medical students, which showed that peer tutoring helped with an increase in content knowledge and teaching skills (Alexander et al., 2022). This type of study attempted to establish the features that both tutors and learners identified as being most effective in a peer tutoring session. The results showed that peer teaching allowed tutors and learners to focus on metacognitive skills dealing with the knowledge gaps they can subsequently address. In addition, the questions review offered tutors an opportunity to promote best test-taking practices such as response

elimination and question reading skills. Likewise, serving as a peer tutor has been viewed as an appealing and beneficial educational option to promote students' academic progress (Sobral, 2002).

The difference in perceived usefulness between tutors and tutees can be attributed to the different roles, experiences, and perceptions within peer tutoring. As the research indicates, peer tutoring dynamics often provide a better understanding and reinforcement of discipline knowledge by teaching others that helps its accrual to their perceived efficacy in stabilizing personal learning. Additionally, one can notice the high degree of responsibility and motivation in students' behaviour when presenting content to peers (Rawlinson & Willimott, 2016). Tutees, on the other hand, may consider usefulness differently by paying more attention to receiving support and clarifying concepts. Additionally, the difference in perceived usefulness can be attributed on how much each role requires commitment and responsibilities. Specifically, the results could reflect a tendency among tutors who spend more time facilitating and clarifying concepts to provide higher ratings of usefulness for the teaching process itself. But usefulness may be evaluated by the tutees based on what can help them within given assistance and guidance. The study has successfully cultivated a collaborative environment between faculty members and peer tutors, underscoring the pivotal role of faculty in guiding and supporting the peer tutoring process. Looking ahead, there exists a promising opportunity to integrate peer tutoring with additional support services, such as counselling or academic advising, thereby creating a robust and comprehensive student support system. Furthermore, novice nursing students have acquired valuable skills through peer tutoring, encompassing communication, teaching, and leadership abilities. These skills have the potential to seamlessly transfer into clinical practice and fortify the students' readiness for future professional roles. This multifaceted approach not only enhances the student's academic experience but also contributes significantly to their holistic professional development.

It is worth noting that students with CGPA less than 2 have shown improvement in their academic performance, indicating that this group may require additional support or specialized tutoring methods. These findings align with previous research conducted by Bene and Bergus (2014) and Williams and Fowler (2014) who found a positive correlation between improved overall clinical unit grades and participation in near-peer teaching initiatives.

These findings highlight the complicated nature of GPA-based labels and how they can affect academic achievement. They suggest that students with lower GPAs may possess strong academic skills like those with higher GPAs, affected by more than just their grades. It is crucial for institutions to understand the distinctions within GPA groupings to recognize and assist students with diverse academic requirements, resulting in a more well-rounded approach to enhancing learning results.

There is a notable relationship between students' psychological states and their receptivity to academic assistance systems, as seen by the correlation between psychological empowerment and the perceived usefulness of peer tutoring. This finding emphasizes how crucial it is to attend to students' psychological needs while offering academic support, and it raises the possibility that psychological empowerment could improve students' perceptions of the advantages of peer tutoring (Palsson et al., 2017; Stone et al., 2013). A positive moderate correlation was found between the usefulness of peer education sessions and the level of cognitive ability of the participants. This relationship provides important insights into the relationship between the perceived value of peer instruction and psychological empowerment.

This link highlights a possible link between learners' psychological health and confidence and successful educational interventions like peer tutoring. This is consistent with Albert Bandura's social cognitive theory which emphasizes the influence of individuals' psychological state and motivational level on the perceived effectiveness of instructional strategies. These findings have implications for educators and institutions aiming to improve students' psychological well-being and academic success. By emphasizing and refining effective peer instructional programs, teachers can use this partnership to improve learning outcomes and positively influence students' cognitive abilities. Furthermore, recognizing the impact of effective teaching strategies on cognitive resources promotes a holistic approach to education, prioritizing not only academic achievement but the overall well-being of students and their self-awareness. Understanding the observed positive relationship between the perceived usefulness of peer tutoring and psychological empowerment emphasizes the importance for educational practices and the importance of effective instructional strategies on student perspectives emphasising on improving the quality of life.

Consequently, when students consider peer tutoring as valuable and effective, it leads to an elevation in feelings of empowerment. This finding builds on previous research focusing on students' confidence, independence, and academic achievement enhanced through peer learning (Palsson et al., 2017; Stone et al., 2013).

According to the analysis of peer tutors' learning experience scores in this study, peer tutors participating in peer tutoring demonstrate remarkably high levels of satisfaction and positive attitudes. Opportunity to consolidate their knowledge by controlling learning engagement, opportunities for professional development, to make a meaningful impact, and enhancing an emotional and growth-supportive learning environment are the main factors that contribute to a positive perception of peer teaching. These results are consistent with previous research showing higher levels of satisfaction and positive mood among peer learners, highlighting the ways in which peer learning encourages self-assessment and introspection.

In summary, as first-year students encounter numerous challenges throughout their learning programs that can influence performance, this study references a program which may support the functioning of such learners. Notably, it has been noted that peer learning is among the most effective teaching approaches. The research recommends promoting peer-to-peer support groups and discussion boards for teachers to share teaching methods and practices to build a culture of collaboration among educators.

Implications

The findings of the study are valuable recommendations and implications for education. To begin, peer tutoring programs should be applied more widely to promote student performance and improve the learning experience of all students. A personalized tutoring approach addressing gender biases will ensure that there is a balanced classroom for all the students. Institutions need to use an all-inclusive support approach for students with different GPA levels, specifically low GPAs through which the academic gaps would be bridged.

To make the most of peer tutoring, insights from both tutors' and tutees' points of view are necessary. This is because these programs can be improved by regular evaluations, effective training practices based on robust training and ample resources allocated to peer tutors. Psychological well-being should become an integral part of academic support.

Therefore, systemic, and integrated peer tutoring programs can be characterized as universal instruments not only for better academic performance but also the development of personal growth and educational environment. These suggestions call for comprehensive educational approaches that promote inclusivity, specific support, and psychological well-being in order to develop a student's personality in its totality. As we anticipate the sustainability of peer tutoring programs, the study advocates for their recognition as innovative educational practices within nursing programs, encouraging continued research and evaluation to refine and expand these initiatives in the long term.

Limitations

The study has many limitations. Because the study targets a particular group of nursing students from only one university, it restricts its generalization. However, the findings may not generalize to the whole population of nursing students because their demographics and educational backgrounds are likely different in other contexts or institutions. Second, the use of convenience sampling can be thought to introduce selection bias which affects representation of sample. The results could also have been biased because students who volunteered to participate in the study might be different from those that did not volunteer. Thirdly, even though reliable tools measuring constructs like perceived psychological empowerment and effectiveness of peer tutoring were used; the use of self-reported measures may result in response bias. Moreover, the subjectivity of these measures may not reflect all facets of students' experiences or perceptions accurately. Lastly, the research illuminated perceived usefulness variations between tutors and tutees. Yet, it did not expound on any of the detailed peer tutor problems or challenges arising out of the intervention that could have given further insight into dynamics in interactions between learners.

Conclusion

The research highlights the efficacy of peer tutoring in improving academic performance among novice nursing students. It focuses on the beneficial impacts of peer tutoring methods to enhance academic performance. Also, the study outlines strong correlations between several demographic variables (such as gender, GPA) in relation to academic performance. These results highlight the need for taking these demographic variables into account in formulating research agendas and educational interventions within this environment. In conclusion, the research brings into light the positive impact of peer tutoring to improve performances and emphasizes the importance of demographic variables in determining educational outcomes which create lots of opportunities for further research about these topics.

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Author's Contribution

VS, AY, JRN conceptualized the idea and were involved in data collection. BPV, MAJ, FHA contributed to the design and analysis. All involved in drafting this manuscript. All authors approved the final version of the manuscript.

Availability of Data and Materials

The data will be available to share if requested.

Consent for Publication

All authors meet the authorship criteria and are in the agreement with the content of the manuscript to publish.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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Use of AI Software

The authors declare that this is written by themselves, did not use AI software.

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Supplemental Material

Supplemental material for this article is available online.

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