Relationship between peer versus non-peer learning and academic performance of nursing students in Karachi, Pakistan

Rukhsana Muhammad Haroon[1], Sabir Hussain[2], Muhmooda Abdul Razzaque[3], Abdul Razzaque[4]

[1]Lecturer in Institute of Nursing and Midwifery, Dow University of Health Sciences, Karachi, Pakistan, [2]Associate Professor in Shaheed Mohtarma Benazir Bhutto University Larkana, Pakistan, [3]Lecturer, Institute of Nursing and Midwifery Dow University of Health Sciences, [4]Registered Nurse, Intensive Care Unit in Dow Hospital Karachi, Ojha Campus, Karachi. Pakistan
Corresponding author: Ms. Rukhsana Muhammad Haroon, MSN, Email: rukhsana.haroon@duhs.edu.pk

ABSTRACT

Background: Students learn through peer learning; it is one of the central learning approaches. Peer learning inspires students to teach and learn from each other. The objective of the study was to determine the relationship between peer versus non-peer group learning and the academic performance of nursing students (NS).

Methods: A correlational research design was conducted at two public sectors: Dow Institute of Nursing and Midwifery Karachi and College of Nursing Dr. Ruth K. M. Pfau Civil Hospital Karachi. Three hundred NS were included in the study through purposive sampling techniques and the study duration was four months (December 2022 to March 2023). The inclusion criteria were undergraduate NS who were acquainted with peer learning. Those NS who were not present at the time of data collection were excluded from the study. According to the study's objectives, a questionnaire was developed by reviewing previous studies. Data was entered and analyzed on SPSS version 26.

Results: Out of 300, n=156(52%) were from peer group and n=144(48%) were from non-peer-group and n=167(55.7%) had reported good performance (>3 GPA) and n=133(44.3%) reported average performance (≤3 GPA) at academic. Both groups of NS showed significant differences in academic performance (P- value <0.05). The peer group of NS has found a positive correlation (r.1.000) and is highly significant (P- value <.005) with academic performance.

Conclusion: The current study concluded that most NS belonged to peer groups, and more than half of the NS attained good academic performance. Peer groups also showed a positive correlation and high significance with academic performance.

Keywords:
Nursing students, Peer Learning, Academic Performance

INTRODUCTION

Learning from peers is cost-effective for increasing students' engagement and efficiency[1]. Students interacting with their classmates are also more motivated to take an examination or test[1]. Learning in nursing education has traditionally relied on traditional methods[2]. It is mainly based on teacher-centered learning, also known as non-peer group learning[2]. A nursing student who is self-regulated and a critical thinker is capable of learning new perspectives[2].

Students learn through peer learning, which is one of their central learning approaches[3]. During and after class, peer learning inspires students to teach and learn from each other[3]. Several other overarching terms are used to describe peer learning, including "peer teaching," "peer instruction," "peer tutoring," and "peer mentoring[3]. Students are more confident interacting, reflecting, and exploring their ideas collaboratively[1,2]. In other words, it is an opportunity for students to refine their skills and knowledge through tutoring one another[1,2].

Globally, the concept of peer learning is familiar in nursing education, and various inconsistencies indicate educational outcomes[2]. For instance, a study highlighted that peer learning increases nursing students' self-esteem in obtaining good results in class or exams[2]. It also showed that peer learning is a practical approach to improving the knowledge and skills of nursing students[1-4]. Likewise, Topping et al. (2017) concluded that sixty-nine percent of graduate students agreed that teacher support is essential for peer learning[5]. Dikmen et al. (2017) stated that peer learners performed better than non-peer group learners[6]. A study by Serrano et al. in Colombia (2021) found that students got better grades than those supported by their classmates[7]. A descriptive study from Nigeria (2019) by Filad et al. reported a significant relationship between peer groups and their impact on the academic performance of university- going students[8]. Uzezi and Deya, in 2017, also found that learning with peers was

positively associated with the academic achievement of students[9].

Previous studies have found numerous perspectives of peer learning; for example, peer learning promotes nursing students' communication skills, motivates students to learn from each other and helps solve problems[2-5]. On the other hand, peer learning can be a distractor in the learning process when students share and discuss ideas and experiences in a student-led peer group[10]. Given the above facts of peer learning through literature search, there is a crucial to be more studies in nursing education related to peer learning in terms of successfully obtaining grades, specifically in Karachi, Pakistan. Therefore, there is an urgent need to determine if is there any relationship between peer versus non-peer learning and the academic performance of nursing students.

METHODS

This study used a correlational research design with two public institutions: Dow Institute of Nursing and Midwifery Karachi and the College of Nursing Dr Ruth K. M. Pfau Civil Hospital Karachi. It lasted four months, from December 2022 to March 2023. A review committee at Dow University Health Sciences Karachi (Ref: IRB- 2435/DUHS/Approval/2022/775) has approved this study. Prior to data collection, consent was obtained from all participants. The inclusion criteria were undergraduate NS who were acquainted with peer learning. Those NS who were not present at the time of data collection were excluded from the study. Participants were enrolled using a purposive sampling method, regardless of gender or year of study. For the sample size calculation, "Open epi software" was used by considering "Previous study findings (69.0%) of graduate students in KSA (2017) agreed to learn from a peer as an academic culture,"[11] and 95% C—I and 5% margin of error. The calculated sample size of the study was 327. Firstly, the sample size was divided into two research settings. i.e., Dow Institute of Nursing and Midwifery Karachi and College of Nursing Dr Ruth K. M. Pfau Civil Hospital Karachi. Secondly, samples were divided into each research setting based on 50%. The response rate was 92% (20 respondents dropped out from Dow Institute of Nursing and Midwifery Karachi and 07 respondents dropped off from College of Nursing Dr Ruth K. M. Pfau Civil Hospital Karachi), and 300 were the total respondents. (150 from each research setting).

A questionnaire was developed by reviewing previous studies[2-5,8-12] according to the study's objectives. Before administration, a questionnaire was pilot-tested on 10% of the study's sample size for the tool's validity and reliability. Further, the questionnaire was modified according to the result of the pilot test. A Cronbach alpha test showed 0.80 fair reliability of the instrument.

The instrument comprised 02 parts: 1st part included three items of demographic attributes of the participants such as age, gender, year of study, academic performance (GPA ≤3 and GPA >3), and belonging to the peer group (yes and no). 2nd part consisted of six items: Engagement in learning, self- regulation, desire to learn, positive reinforcement, coping with stressors, and communication skills. The instrument was measured through a five-point Likert scale. "1=strongly disagree, 2=disagree, 3=neutral, 4= agree and, 5= strongly agree". Research questions (agree and disagree) decision-based on the mean value. Likewise, "5+4+3+2+1/5 =3.00". Hence, the statement considers "agree" when the mean is >3, and it considers "disagree" when the mean value is ≤3.

Data was entered and analyzed on the SPSS version 26. For descriptive analysis, mean and standard deviation were calculated. Inferential analysis and t- tests determined the difference between peer-group and non-peer-group learning. Furthermore, the Pearson correlation test was used to determine the relationship between the respondents' mean of peer learning (group) and academic performance (mean of good performance). P-value <0.05 was considered as significant.

RESULT

A total of 300 NS participated in the study. The mean age of the NS (M± SD 24.14 ±2.974), and most were female n=181 (60.3%) and were studying in their third year, n=101(33.7%). The majority, n=156(52%), were from the peer group, and fewer were n=144(48%) from the non-peer group. Table: 1

In the peer group, NS agreed on five items: engagement in learning (M±SD =3.00±1.39), desire to learn (M±SD = 3.34±1.33), a positive reinforcement

Table 1: Demographic Information of Nursing Students (NS)

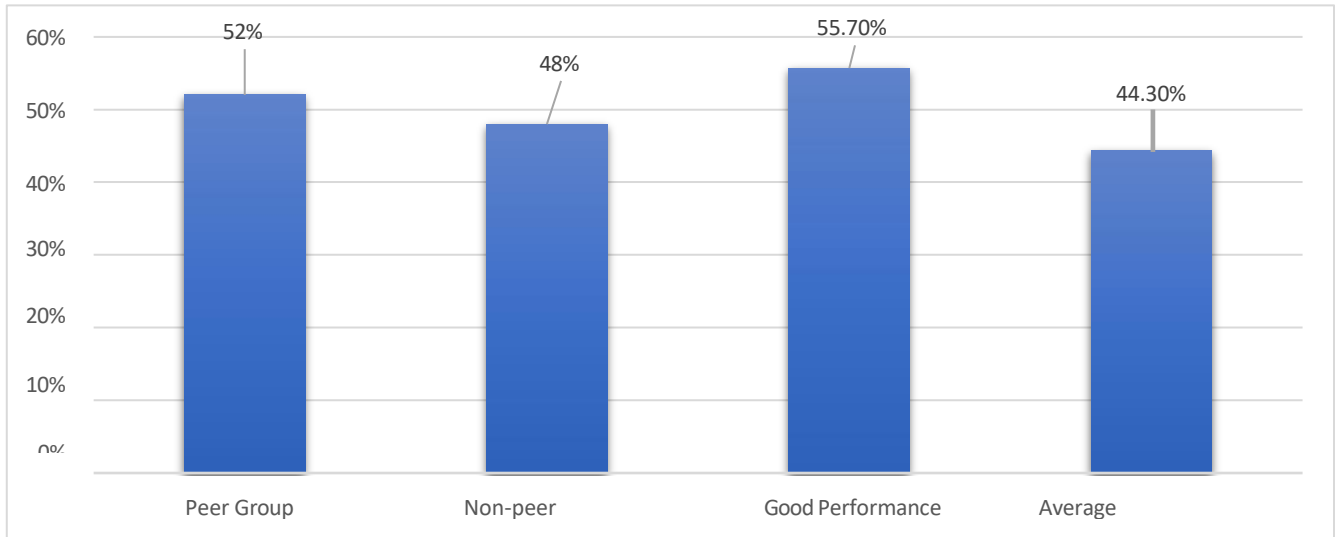| Items	N (%)
Age M±SD= 24.14 ±2.97	
Gender	
Male	119 (39.7)
Female	181 (60.3)
Year of Study	
First Year	36 (12.0)
Second Year	92(30.7)
Third Year	101(33.7)
Fourth Year	71(23.7)

Figure 1: Peer learning (Peer and Non -peer Group) and Academic Performance (Good and Average Performance) of Nursing Students (NS)

Table 2: Comparison of Peer Learning and Non-Peer Learning among Nursing Students (NS)

Items	Peer learning (Group) 156 M± SD	Non- Peer learning (Group) 144 M± SD	Remarks
Engagement in learning	3.00±1.39	2.66±1.38	Agree/ Disagree
Self-regulation	2.96±1.66	3.21±1.45	Disagree /Agree
Desire to learn	3.34±1.33	3.10±1.28	Agree/Agree
Positive reinforcement	3.10±1.40	3.35±1.31	Agree/Agree
Cope with stressors	3.38±1.37	2.79±1.28	Agree/ Disagree
Communication skills	3.40±1.76	2.86±1.59	Agree/ Disagree

Table 3: T-test showed a difference between Peer Learning and Non-peer Learning (Group)

Variables	Number	Mean	SD	df	t-value	p-value
Peer Learning	156	48.82	4.94		115.80	
Non-Peer Learning	144	40.00	5.16	298	85.91	.000*

*Significant difference at the <0.05 level.

Table 4: Relationship between peer learning (group) and Academic Performance of Nursing Students (NS)

	Correlations		
Variables		Peer (Group)	Academic Performance
Peer (Group)	Pearson Correlation	1	1.000**
	Sig. (2-tailed)		.000
Academic Performance	Pearson Correlation	1.000**	1
	Sig. (2-tailed)	.000	

**. Correlation is significant at the 0.05 level (2-tailed).

(M±SD = 3.10±1.40), cope with stressors (M±SD = 3.38±1.37), and communication skills (M±SD= 3.40±1.76). In the non-peer group, NS disagreed on three items: engagement in learning (M±SD=2.66±1.38), coping with stressors (M±SD = 2.79±1.28), and communication skills (M±SD = 2.86±1.59). Table: 2.

Academic performance has shown a significant difference between the peer group (M±SD=48.82± 4.94) and non-peer group (M±SD = 40.00±5.16) of NS. Table: 3.

The peer group has found a positive correlation (r.1.000) and highly significant (P- value <.000) with the academic performance of NS. Table: 4

DISCUSSION
In the current study, most NS were from peer groups and reported good academic performance. These findings aligned with a previous study by Uzezi et al.(2017), which explored that higher percentages (85%) belonged to peer groups and successfully competed for good grades[9]. Another descriptive analysis showed that most respondents were interested in being part of the peer group. It refers to this because they believed peer group learning is fruitful to get the highest GPA in exams[10]. In contrast, one of the comparative studies conducted by Garrison et al. (2021) found that nursing students in peer learning groups performed better in class than those who attended traditional teaching

sessions[13]. Moreover, it suggested that nursing tutors should encourage students to learn through a peer group model[13.] In contrast, Salam et al. conducted a descriptive study among dental candidates in KSA. It concluded that the candidate's grades remained the same in the informal peer-assisted learning group[11].

The present study revealed that peer groups of NS significantly correlated with academic performance. Numerous studies found a significant relationship between peer learning and academic performance. These findings aligned with the multiple studies; likewise, a study from Serrano et al. in Colombia found that university students achieved better grades because of their classmate's support[3]. A descriptive study from Nigeria by Filad et al. found a significant relationship between peer group impact on the academic performance of university-going students[8]. Uzezi and Deya, in 2017, also found that learning with peers was positively associated with students' academic achievement of students[9]. A quasi-experimental study explored that peer teaching positively impacts the academic performance of nursing students[2]. On the contrary, a study by Palsson et al. (2017) found another essential aspect of peer learning based on nursing students' self-exploration, like critical analysis, cooperative learning attitude, and peer empowerment for self-efficacy[14]. Jassim et al. also indicated that peer teaching is practical for nursing students in gaining knowledge and skills[15]. A study by Dube et al. (2018) explored the role of peer support of nursing students in obtaining good GPAs in examination[16]. In contrast, Mosha (2017) study revealed that friendship circles and the economic status of students were influencing factors in the academic performance of nursing students[17].

The current study indicated that the peer group of NS agreed on statements, for instance, engagement in learning, desire to learn, positive reinforcement, coping with stressors, and communication skills. A few reports support a similar finding. For instance, peer learning promotes socialization, interaction, and collaboration within groups[18]. Generally, peer learning is group learning, which facilitates students to critically analyze concepts of courses more than those students who studied at individual level[18]. Furthermore, numerous studies have shown that peer learning helps decrease the "anxiety and stress" of students when peer helps to gain confidence and give advice and feedback[18]. Analogous findings highlight one of the qualitative studies by Ala OG in 2021 (China) among university students. It found that 98% of students learn in non-peer groups, solve academic difficulties, and achieve good grades in class tests and final exams[19]. Another study finding showed that a non- peer group of NS disagreed on statements such as engagement in learning, coping with stressors, and communication skills. These findings are supported by a few studies in which peer group learners reported stress and anxiety because of low self-efficacy and self-esteem[20]. Furthermore, nursing students believe engagement in learning and social interaction is vital to academic success. In contrast, some studies reported that teacher- leading intellectual engagement was authentic compared to peer group engagement[20]. Understanding engagement is a replication of discussion, and it helps students describe their experiences encountered during replication[21]. During this process, learners can develop their critical thinking process, review their thoughts, and practice collaboratively[22].

In this study, the highest percentage of NS were female; most were studying in their third year. These findings were consistent with previous studies[9,8,11] and inconsistent with various studies[3,7]. A peer learning approach benefits the younger population by providing informational, emotional, and instrumental help to each other[23].

CONCLUSION

Most NS belonged to the peer group, and more than half of the NS obtained good academic performance. The peer group also showed a significant correlation with the academic performance of NS. Further, experimental/observational studies might be helpful in promoting the culture of peer learning among NS.

REFERENCES

1. Hung MS, Lam SK, Chow MC. Nursing students' experiences and perceptions of learner-centered education in a disaster nursing course: A qualitative study. Nurse Educ Pract. 2020;47(4): 24-28.
2. Kim SC, Jillapali R, Boyd S. Impacts of peer tutoring on academic performance of first-year baccalaureate nursing students: A quasi- experimental study. Nurse Educ Today. 2021; 96(2):104-108.
3. Granger-Serrano A, Villarraga-Orjuela A. Peer Effects on First-Year University Students' Results: The Role of Classmates' Academic Performance and Socioeconomic Status. J. Math. 2021.;9(23):3115- 41
4. Collard P. The "flat peer learning" agent-based model. J. Comput. Soc. Sci. 2022 ;5(1):161-87.
5. Topping K, Buchs C, Duran D, Van Keer H. Effective peer learning: From principles to practical implementation. Taylor & Francis; 2017 Mar 31.
6. Dikmen Y, Ak B, Usta Y, Ünver V, Akin E, Cerita B, et al. Effect of peer teaching used in nursing education on the performance and competence of students in practical skills training. Int J Educ Sci .2017:3(16):14-20
7. Granger-Serrano A, Villarraga-Orjuela A. Peer Effects on

FirstYear University Students' Results: The Role of Classmates'Academic Performance and Socioeconomic Status. J. Math.2021;9(23):15-20

8.   Filade BA, Bello AA, Uwaoma CO, Anwanane BB, Nwangburka K. Peer Group Influence on Academic Performance of Undergraduate Students in Babcock University, Ogun State. Afr Educ Res J. 2019;7(2):81-87.

9.   Uzezi JG, Deya GD. Relationship between peer group influence and students' academic achievement in Chemistry at secondary school level. Am J Educ Res. 2017;5(4):350-356.

10. Rahman S, Munam AM, Hossain A, Hossain AD, Bhuiya RA.Socioeconomic factors affecting the academic performance of private university students in Bangladesh: a cross-sectional bivariate and multivariate analysis. SN Social Sciences. 2023;3(2):26.

11. Abdel Salam M, El Tantawi M, Al-Ansari A, AlAgl A, Al-Harbi F. Informal peer-assisted learning groups did not lead to better performance of Saudi dental students. Med. Princ. Pract. 2017;26(4):337-42.

12. Barreto, D., Oyarzun, B., & Conklin, S. Integration of cooperative learning strategies in online settings. E-Learning and Digital Media. 2022; 19(6);574-594.

13. Garrison, E., Colin, S., Lemberger, O., & Lugod,

14. M. Interactive learning for nurses through gamification. J Nurs Adm. 2021;51(2):95-100.

15. Pålsson Y, Mårtensson G, Swenne CL, Ädel E, Engström M. A peer learning intervention for nursing students in clinical practice education: A quasi-experimental study. Nurse Educ Today. 2017;51(3):81-87.

16. Jassim T, Carlson E, Bengtsson M. Preceptors' and nursing students' experiences using peer learning in primary healthcare settings: a qualitative study. BMC Nursing. 2022;21(1):66.70

17. Dube MB, Mlotshwa PR. Factors influencing enrolled nursing students' academic performance at a selected private nursing education institution in Kwakiutl-Natal. S. Afr. j. sci. 2018;41(1):1-7.

18. Abdel Salam M, El Tantawi M, Al-Ansari A, AlAgl A, Al-Harbi F. Informal peer-assisted learning groups did not lead to better performance of Saudi dental students. Medi Princi and Pract. 2017;26(4):337-42

19. KENNI AM. Influence of Peer Group on Students' Motivation and Academic Performance of Chemistry Students in Secondary Schools in Ekiti State, Nigeria. Int J Educ Res. 2022;4(05):61-72.

20. Ala OG, Yang H, Ala BK. Characteristics and comparison of peer-assisted learning interactions among university students in Harbin, China. Soc Sci Humanit Open. 2021;4(1):1-8.

21. Dikmen Y, Ak B, Yildirim Usta Y, Ünver V, Akin Korhan E, Cerit B, Yönder Ertem M. Effect of peer teaching used in nursing education on the performance and competence of students in practical skills training. Int J Edu Sci. 2017;16(1-3):14-20.

22. Rutto SJ, Richard O. Influence of external factors of adolescents' popularity on academic performance of students in secondary schools in Baringo North Sub-County, Kenya. J Adv Educ Sci. 2022;2(4):42-50.

23. Rienovita E, Taniguchi M, Kawahara M, Hayashi Y, Takeuchi Y. Implementation of Interactive Peer Learning Environment Enhances Learners" Self- Esteem and Self-Efficacy. Int. J. Learn. Technol. 2018;1(1):1-24.

24. Hanson JM, Trolian TL, Paulsen MB, Pascarella ET. We are evaluating the influence of peer learning on psychological wellbeing. Teach. High. Educ. 2016 ;21(2):191-206.