Original Research

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Effects of Peer Mentorship on Academic Performance Among Bachelor of Science Nursing Students in Kenyan Universities

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ABSTRACT

Background: Peer mentoring is one of the most effective interventions that have demonstrated ability to ease university transition and promote positive outcomes including better student performance. The study sought to examine the effects of peer mentorship on nursing students' academic performance in Kenya.

Methods: The study was a pretest-posttest quasi-experimental design using quantitative means of data collection. It was conducted in 4 sampled Kenyan universities offering Bachelor of Science in Nursing that included University of East Africa Baraton, Uzima, Great Lakes University of Kisumu and Masinde Muliro University of Science and Technology. 50 third year students were trained and mentored 301 second years in 3 universities .1 university having 85 second year students served as a control group. Data was analysed using Statistical Package for the Social sciences version 28. Descriptive statistics were used to understand student distribution in universities. Paired-samples t-test and independent t test were used to establish relationship within and between groups.

Results: Clinical scores of experimental group compared control group indicated t=-7.5041, P≤ .05 thus implying that the means of the two groups were significantly different. Results of classroom scores between the experimental and control groups were t=14.8713, P≤.05, indicating statistical difference in the means. The pre and post results in clinical and class scores of experimental group indicated significant results with t=27.72, P=≤ .05 and with t=18.01, P=≤ .05 respectively. On the other hand, Pre and post results of clinical control and clinical experimental results indicated insignificant results of t=-0.60, P≥ .05 and t=0.96, P≥ .05 respectively.

Conclusion: The study concluded that peer mentorship affects positively student academic performance and recommends use of peer mentorship to support students and inform policy.

Keywords: *Peer mentoring, Academic performance, Nursing students, Universities*

INTRODUCTION

There has been increasing attention in many countries globally towards student success as it remains a major goal of education.[1,2] This has led to universities seeking alternative approaches to achieving student success in education.[(3)] Peer mentoring has been identified as one of the most effective elements able to promote positive outcomes especially academic performance.[4–6] As a process of nurturing the mentee, peer mentorship was able to impart academic and cultural capital to learners[7] This eventually led to subsequent better grades

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while meeting the exceptional and cyclical needs of the mentee.[5,8,9] It also supported personal and academic outcomes regardless of individuals' background and was identified as a key mechanism of social integration and academic success among learners.[6,8,10,11] Similarly, it also created potential to facilitate student transition in university while improving retention and persistence.[2,8,11–13]

Through the ability to overcome educational stressors and obstacles, peer mentees were able to achieve their desired academic goals.[14,15]Existence of role model, goal setting and career path were identified as the most beneficial outcomes of peer mentorship that promoted good academic performance.[16,17] Geng & Midford, and Klassen*et al*, [18,19] reported that learners in their early years in academic institutions experienced high levels of stress and that could negatively impact on their performance. Peer mentorship comes in handy in supporting learner ability to integrate knowledge gained in class to the practical placements.[8,20–22]

In as much as peer mentorship is widely known to affect learner performance in institutions globally, implementation in Kenyan setting has remained low. This is regardless of the fact that student support and transition challenges still exist. The study will provide information that can inform policy as well as form basis for more intervention studies and practices on peer mentorship.

Aim of the study

The aim of the study was to assess the effects of peer mentorship on student academic performance among BScN students in Kenyan universities.

MATERIALS AND METHODS

Design

The study was a pretest-posttest quasi-experimental design that also utilized a control group. There was random assignment of institutions into experimental and control group thus enabling the researcher to estimate the causal effects of peer mentorship.[23]

Study Site 2

Sampled Kenyan universities offering Bachelor of Science in Nursing (BScN). These included University of East Africa Baraton (UEAB), Kisii, Uzima, Great Lakes University of Kisumu (GLUK) Masinde Muliro University of Science and Technology (MMUST).

Study Subjects

Second year nursing students were peer mentees while third years were peer mentors. The entire cohort 301 participants in the 3 universities assigned to experimental were mentored while 85 assigned to control group university and received normal standard support. Total mentors were 50.

Sampling and Sample Size Determination

Through cluster sampling, 1 region (Western) out of 5 regions of Kenya that include Northern, Eastern, Southern, Central and western Kenya was identified. The region comprised of North Rift valley with 2 universities namely Moi and University of East Africa Baraton (UEAB), Nyanza with 4 universities comprising Maseno university, Kisii, Uzima and Great Lakes University of Kisumu (GLUK) and Western 1 university that was Masinde Muliro University of Science and Technology (MMUST). Sample size determination based on the rule of the thumb with 4 out of 7 universities being selected using proportionate allocation and this included UEAB, GLUK, MMUST and Uzima university. Kisii university was used for piloting. Simple random sampling was used to assign institutions into experimental and control group.

Data Collection

Involved reviewing the records of pre intervention and post intervention period for both classroom and clinical performance.

Procedures

Selection of peer mentors

Third years who were interested in peer mentoring were asked to register with the school. Vetting was done to select academically strong students with good social behavior. Mentors needed to demonstrate good understanding of the university

Training of Peer Mentors

Training was done for three days with the mentoring guide based on the study by Minor.[24] on building effective mentoring programs. Mentoring competency assessment test was done pre and post training with those attaining 80% and above allowed to mentor. The training aimed at developing competencies in peer mentors that would enable them smoothly conduct peer mentorship.

Mentor Mentee Match

Successful mentors filled forms indicating attributes they wished in their peer mentees and vice versa for peer mentees and the information was used to create the mentoring teams. One to group model of mentoring was used with 1 mentor supporting 6 mentees.

Training of Research Assistants

Research assistants were drawn from faculty and trained on monitoring of activities and data collection.

Intervention

Involved actual mentoring to intervention group and took place for two trimesters thus 8 months from January to August 2020. Mentors worked with mentees on various tasks as identified by both every two weekly or more. Both academic and social challenges were addressed in the mentorship with participants planning and implementing activities on their plans and finally data collection was done.

Data Analysis

Data was analysed using Statistical Package for the Social sciences (SPSS) version 28. Descriptive statistics were used where means, standard deviations were computed and percentages used to understand student distribution in universities

Paired-samples t-test was used to determine paired samples mean differences between the pre intervention and the post intervention groups hence the effects of peer mentorship on student academic performance. Independent t test was used to determine the difference between the intervention and the control group scores.

FINDINGS AND DISCUSSIONS

Students Distribution Across Universities

The distribution of 386 of nursing students included in the sample for the specified universities was as follows; 106 (27.5%), 99 (25.6%), 96 (24.9%) and 85 (22.0%) for PRB, PRG, PRU and PUM respectively. PRB had a majority of students with PUM having the least. Of the total, 301 belonged to the experimental while 85 belonged to the control group.

Age and Gender 2Distribution of the Students

The mean age was approximately 20 (19.37) years where the youngest student was 18 years old while the eldest was 29 years and with a standard deviation of 1.375. Majority of the students belonged to age approximate of twenty years. Majority of the students, 179 (46.37%) belonged to age 18-20 years while the least was ages above 24years, 68(17.62%). Across all age groups, female students 219(56.74%) were more than male students 167(43.26%) as shown in table 1.

Effects of Peer Mentorship on Student Academic Success

This was based on the hypothesis:-: There is no significant mean difference in the examination scores between the mentored and non-mentored group of students

Relationship Between Experimental and Control Test Results

The current study assessed the effects of peer mentorship on BSc nursing students' academic performance. Independent t-test was conducted to examine the difference between clinical scores of experimental group compared to those of control group. Results indicated t=-7.5041, P≤ .05 with 384 degrees of freedom thus implying that the means of the two groups were significant at 5%level of significance. Similarly, results of classroom scores between the experimental and control groups were t=14.8713, P≤.05, df 384 indicating a statistical difference in means of the two groups at 5% level of significance as shown in table 2. The study established a relationship between clinical results and class results when exposed to mentorship and not respectively. The mean of both clinical and classroom results of the mentored groups were higher compared to those of the group that did not receive mentorship. Furthermore, P-values of independent t test P≤ .05 for both clinical results and classroom results demonstrated significant difference in the results of the two groups. Collier [5] reported higher GPA for learners who had undergone peer mentorship which is in congruence with the results of the current study. Examining the mean differences in the results of the two groups, it is clear that indeed peer mentorship was able to transform learners into higher scorers which eventually builds their confidence (Table 2).

Relationship Between Pre Intervention Scores and Post Intervention Scores

Paired Samples statistics was done to establish marks scored between the pairs and assess the difference in pre and post test results on both experimental and control groups. The pre and post results in the clinical experimental group indicated significant results with t=27.72, P≤ .05 and mean difference of 14.81 while clinical control indicated an insignificant results of t=-0.60, P≥.05 and df =84 with a mean difference of 0.33 There was no significant difference between the pre intervention and post intervention scores of the control group. The pre and post results of the class scores of experimental group likewise revealed a significant relationship with t=18.01, P≤ .05 at 5% level of significance contrary to control group with t=0.96, P≥ .05, and mean difference of 0.64. These finding indicate a change in scores of participants who were

Table 1: Students Distribution Across Universities by Age and Gender

	University					Gender	
Age	PRB N(%)	PRG N(%)	PRU N(%)	PUM N(%)	Total N(%)	Male (%)	Female (%)
18-20	50(47.17)	48(48.48)	39(40.63)	42(49.41)	179(46.37)	83(49.70)	96(53.63)
21-23	41(38.68)	34(34.34)	37(38.54)	27(31.76)	139(36.01)	57(34.13)	82(58.99)
Above24	15(14.15)	17(17.17	20(20.83)	16(18.82)	68(17.62)	27(16.17)	41(60.29)
Total	106(27.5)	99(25.6)	96(24.9)	85(22.0)	386(100)	167(43.26)	219(56.74)

Table 2: Relationship Between Peer Mentored and Non-Mentored Students' Performance Scores in Clinical and Classroom Examination

Pair	Category		Mean	Df.	Std. error mean	T	Sig.
Pair 2	Clinical control and clinical experimental	Post test	-13.265	384	0.0892	14.870	.0001
Pair 4	Class control and class experimental	Post test	-7.164	384	0.953	7.519	.0001

Sig. value of ≤.05 indicate a significant association between the groups under each pair at 5%level of significance

Table 3. Relationship Between Pre Intervention Scores and Post Intervention Scores in Both Clinical and Classroom Examination

Pair	TYPE	GROUP	Mean	Mean diff	SD	Df	STD error	T	P
Pair 1	Pre test	Clinical experimental results	65.0498	14.81	4.2912	300	0.2473	27.72	**.00001**
	Post test	Clinical experimental results	79.8605		8.0495		0.464		
Pair 2	Pre test	Class experimental results	65.1063	9.25	3.0879	300	0.178	18.01	**.00001**
	Post test	Class experimental results	74.3522		8.4 425		0.4866		
Pair 3	Pre test	Clinical control results	66.2471	0.33	3.3803	84	0.3666	0. 60	.2735
	Post test	Clinical control results	66.5765		3.2196		0.3492		
Pair 4	Pre test	Class control results	66.5529	0.64	3.4244	84	0.3714	0.96	.1709
	Post test	Class control results	67.1882		4.6483		0.5042		

Sig. value of ≤.05 indicate a significant association between the groups under each pair at 5% level of significance

mentored unlike in the non-mentored where the relationship could not be elicited as shown in table 3. The F statistics value was F = 217.6815 and a P-value -0 following an analysis of variance. Comparing the results of the pre intervention and the post intervention period, the study clearly demonstrates that the peer mentored group demonstrated huge difference between the pre intervention and the post intervention scores. This demonstrates that when students are mentored, their academic performance simultaneously improves. The findings resonate with those of Asgari& Carter [6] who reported consistent improvement in the learners that underwent peer mentorship. Similar findings were reported by Mashehela&Mabika[7] who identified a positive impact of peer mentoring to academic capital among the mentored students.

Class control results pre and posttest indicated insignificant relationship demonstrating the implication of not mentoring students in institutions of higher learning. In as much as they may achieve scores to progress in academics, their potential in achieving higher scores was limited. Similarly, this could compromise skill acquisition and performance that has a ripple effect in patient care. In as much as Bonin [20] could not establish any correlation between peer mentoring and student academic success, findings of this study and those of Gamez*et al* and Du Prez[2,15] established that majority of mentees were able to overcome academic stressors leading to improved performance in examination (Table 3).

CONCLUSION

The study concluded that peer mentorship has positive effects on student academic performance thereby rejecting the null that stated, : There is no significant mean difference in the examination scores between the mentored and non-mentored group of students

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

SOURCE OF FUNDING

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ETHICAL CLEARANCE

Ethical clearance was obtained from MMUST Institutional Ethics Research Committee (IERC) number MMUST/IERC/107/20 and permit obtained from National Commission of Science, Technology and Innovation (NACOSTI) Licence number NACOSTI/P/20/3430. Permission was sought from institutions and oral consent from participants. Any benefits or risks were discussed and participants informed that information was for research purposes only. Random sampling and random assignment into experimental and control group for institutions was done to achieve justice.

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