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Original Research Article

Predictors of Academic Achievement among Senior Baccalaureate Nursing Students in Select Universities in Kenya

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Abstract: Emotional intelligence and some social demographic factors have been touted as positive predictors of academic achievement in nursing students. This study's aim was to determine predictors of academic achievement in junior baccalaureate nursing students in Kenya. A correlational cross-sectional study design was used. The study population was senior baccalaureate nursing students in two universities, one public and one private. A total of 158 nursing students took part in the study. A self-administered questionnaire with 4 sections was used; that is; socio-demographic, socioeconomic, trait emotional intelligence and academic achievement sections. Slovins formula was used to determine the sample size. Data analysis was conducted using descriptive statistics, chi-square, Pearson correlation and T-tests. There was a significant difference (p=0.016) between average grade scores of male (66.23+ 11.908) versus female students (58. 65 + 21.71). There was a significant relationship (p=0.000) between trait emotional intelligence and average grade scores among senior baccalaureate nursing students. The study concluded that male students tend to perform better than their female counterparts. Students with high emotional intelligence also tend to perform better than those with low emotional intelligence. The study recommended that female nursing students be trained on effective academic practices. Nursing schools in universities ought to offer emotional intelligence skills training programs in their curriculum as it impacts their academic performance.

Keywords: Nurses, student nurses, baccalaureate nursing students, emotional intelligence, academic achievement.

INTRODUCTION

Nurses are crucial to provision of quality health care. As such, their successful completion of nursing studies will increase the rate at which well-prepared nurses join nursing practice thus reducing nursing shortage (Mthimunye & Daniels, 2019). To ensure successful completion of training, nursing colleges base their selection of nursing students on some predetermined cognitive criteria. These may include; preadmission science grade point average (Wambuguh *et al.*, 2016); language proficiency (Mthimunye & Daniels, 2019); and standardized admission examinations (Robert, 2018). In Kenya, high school performance in the sciences, mathematics, and languages, forms the admission criteria and is seen as a predictor for academic achievement (Nursing Council of Kenya, 2020). Poor academic performance has been cited as an important factor in delaying completion of nursing studies or in increasing the attrition rates of nursing students thus compounding the problem of nursing shortage

Studies have shown that socio-demographic characteristics as well as socio-economic characteristics have a direct or sometimes indirect positive relationship with academic achievement in nursing students A positive relationship has also been demonstrated to exist between emotional intelligence and academic achievement. Students who attained higher scores of also attain higher examination scores (MacCann *et al*., 2019).

Some researchers have examined the protective function played by emotional consciousness over the stress encountered in academic contexts and clinical areas in students enrolled in nursing programs (Roso-Bas *et al.,* 2016). Moreover, EI has also been negatively associated with procrastination in academics for nursing students which can in turn bolster academic achievement (Guo *et al.,* 2019). Despite this documented impact, very few studies on emotional intelligence in pre-service nursing students have been replicated in the African context. This study aimed to determine predictors of academic achievement in junior baccalaureate nursing students in the hope that it will serve to increase the evidence base in the Kenyan context.

MATERIALS AND METHODS

This study employed a cross-sectional correlational study design. The study was undertaken in Nairobi city, Kenya. The study population was senior baccalaureate nursing students in two universities in Nairobi, one public and one private. At the time, there were 257 senior nursing students enrolled in the two universities of study, 138 in the public university and 119 in the private university. Slovin's formula was used in determination of the sample size.
n = N/(1 + N (e2))

Where
n = Number of samples
N = Total population
e = Error tolerance (level)
$n= 257/ 1+257(0.05)^2 = 158$

Two universities were randomly selected, that is one public and one private. Simple random sampling was used. A list of all the eligible students was obtained from each university. The students included in the study were randomly selected using a computer based random number generator.

A self-administered questionnaire was used. For socio-demographic characteristics, age was "young" (<25 years) or "old" (>25 years), and socio economic status was "low" (below KES 30,000/= pm) or "high" (above KES 30,000/= pm). TEIQue-SF was used to assess emotional intelligence. This is a likert type of scale with 30 items each having seven possible responses ranging from "completely disagree" to "completely agree". It measures global trait EI as well as factors and facets of EI and is modeled on the long version of the TEIQue. The scale is brief and has good psychometric properties. To reach, the total scale, one adds the scores on each item after reverse scoring of the negatively worded items. Those with higher scores are considered to have higher trait emotional intelligence. Previous semester average grade scores were used to measure academic performance. An average grade score of 50% was the measure for academic achievement.

Data was checked, coded and stored in SPSS version 25. Descriptive statistics comprising frequencies, percentages, mean and standard deviation was used to describe the variables in the study. Independent t tests were used to compare the differences in means of the different variables for instance emotional intelligence and academic achievement, Multiple regression was used to test the predictors of academic achievement.

Permission and ethical approvals were obtained from the universities' Ethics Review Committee and the National Commission of Science Technology and Innovation. Informed consent was sought from the participants before beginning the study. Confidentiality and anonymity was maintained.

RESULTS AND DISCUSSION

A total of 158 participants responded to the questionnaires. This represented a return rate of 100%.

Results in table 1 show that mean age was 22 years (SD =2.2). More than half (63.3%) of the respondents in the study were female. Over half (57%) were third years and over three quarters (88%) were single. About 43% of the respondents' families had an average family income of KES 30,000. Majority (95.6%) had an average grade score of 50% and above and the rest (4.4%) with an average grade score of below 50.

Table 1: Descriptive findings

Demographic characteristic	Categories	Frequency (N)	Percent (%)	Mean (M)	Standard Deviation (SD)
Age				22	2.203
Gender	Male	58	36.7		
	Female	100	63.3		
University of Study	Public	79	50		
	Private	79	50		
Level of study	Third year	90	57.0		
	Fourth year	68	43.0		
Marital Status	Married	4	2.5		
	Single	139	87.8		
	Engaged	5	3.16		
	Other	10	6.32		
Monthly income(KES)	< 30,000	68	43		
	30,001 & above	90	56.9		
	26-49	7	4.4		
Average Grade point	50 & above	15	95.9		

Respondents' Emotional Intelligence

The results in Table 2 show an overall emotional intelligence score of 5.11+0.787. Respondents in the study scored highly on wellbeing 5.80+1.055 and had very low scores on sociability 5.11+1.024. Respondents who had a mean score of 5.12 and above were classified as having "high" emotional intelligence while the rest were classified as having "low" emotional intelligence. Using this procedure, the study finds that slightly above half (55.75%) had low emotional intelligence.

Table 2: Emotional Intelligence Scores

	Min	Max	Mean	SD
Well being	2.5	7.00	5.8011	1.05543
Self-control	1.83	6.83	4.774	1.01584
Emotionality	2.38	7.00	5.1	1.07948
Sociability	1.5	6.50	4.4184	1.02414
Total	2.93	6.63	5.111	0.78741

A correlation analysis was conducted between respondents' age and their average grade scores. Table 3 shows that there was a weak positive and statistically insignificant correlation (r=0.089, p=0.270) between respondents' age and their average grade scores.

Table 3: Correlation between Age and Average grade scores

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	.089	.076	1.107	.270[c]
Ordinal by Ordinal	Spearman Correlation	-.026	.084	-.321	.748[c]
N of Valid Cases		154			

A t-test was conducted between respondents' gender and their average grade scores. Table 4 shows that there was a significant difference (p=0.016) between average grade scores of men (66.23^{+} 11.908) versus women (58. 65 $^{+}$ 21.71).

Table 4: t-test Results between Gender and Average grade Scores

		t-test for Equality of Means						
		T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
							Lower	Upper
Score	Equal variances assumed	2.447	155	.016	7.57285	3.09508	1.45887	13.68683
	Equal variances not assumed	2.820	154.458	.005	7.57285	2.68501	2.26877	12.87693

A t-test was conducted between respondents' university and their average grade scores. Table 5 shows that there was no significant difference (p=0.362) between average grade scores of respondents in the public university (61.13+ 20.289) versus those in private university (61.77 + 17.791).

Table 5: University of Study and Average grade scores

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Score	Equal variances assumed	.834	.362	-.211	155	.833	-.64161	3.04445	-6.65558	5.37236
	Equal variances not assumed			-.211	151.880	.834	-.64161	3.04700	-6.66159	5.37838

A t-test was conducted between respondents' level of study and their average grade scores. Table 6 shows no significant difference (p=0.402) between average grade scores of respondents in the third year of study (60.88 + 20.04) versus those in fourth year (62.20 + 17.698).

Table 6: Level of Study and Average Grade scores

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Score	Equal variances assumed	.705	.402	-.428	155	.669	-1.31488	3.07062	-7.38055	4.75078
	Equal variances not assumed			-.435	151.718	.664	-1.31488	3.01992	-7.28140	4.65164

A T-test was conducted between respondents' marital status and their average grade scores. Table 7 shows no significant difference (p=0.487) between average grade scores of respondents who were married (63.72 + 10.81) versus those who were unmarried (61.38 + 19.24).

Table 1: Marital Status and average Grade scores

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Score	Equal variances assumed	.485	.487	.271	155	.787	2.34488	8.66808	-14.77794	19.46770
	Equal variances not assumed			.461	4.875	.664	2.34488	5.08115	-10.81767	15.50743

Results in Table 8 show that there was a weak negative and insignificant (r=-0.039, p=0.629) correlation between parents'/guardian income and average grade scores among senior baccalaureate nursing select universities.

Table 8: Correlation between Income and Average Grade scores

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	-.039	.074	-.484	.629[c]
Ordinal by Ordinal	Spearman Correlation	-.050	.081	-.617	.538[c]
N of Valid Cases		152			

Results in Table 9 indicate that there was a significant difference (p=0.000) on average grade scores between those who had high emotional intelligence (71.79 $^{+}$ 11.541) and those who had low emotional intelligence (65.03^{+} 7.973).

Table 9:

		t-test for Equality of Means						
		t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
							Lower	Upper
AVERAGE GRADE	Equal variances assumed	4.345	156	.000	6.75974	1.55583	3.68653	9.83295
	Equal variances not assumed	4.172	117.870	.000	6.75974	1.62028	3.55110	9.96838

Predictors of Academic achievement

Regression analysis was carried out to assess the predictors of academic achievement in senior baccalaureate nursing students. Significant variables (gender and emotional intelligence) in the bivariate analysis were used to conduct a linear regression analysis. Results in Table 10 show that there was a strong positive correlation (R=0.794) between the two variables and respondents' academic achievement. According to the results, 63% of respondents' academic achievement can be attributed to their gender and emotional intelligence

Table 10: Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.794[a]	.630	.019	18.83580

Table 11 shows the analysis of variance (ANOVA) output. Results show that there was significant F(9,142) =2.696, p=0.06 relationship between the gender and emotional intelligence and respondents' academic achievement. This result also means that at least one of the predictor variables is significant.

Table 11: ANOVA Output

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	2083.379	9	231.487	2.696	.006[b]
	Residual	12191.125	142	85.853		
	Total	14274.504	151			

Results in Table 12 show the coefficients table. The results demonstrate that emotional intelligence was significant (p=0.017). It shows that a unit change in emotional intelligence yields a 7.5 unit change in the academic performance of respondents. The sign for emotional intelligence is positive indicating that higher emotional intelligence results in higher academic performance.

Table 12: Coefficients Table

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	78.044	17.736		4.400	.000
	GEN	-.159	3.085	-.004	-.052	.959
	EI	7.585	3.142	.193	2.414	.017

DISCUSSION

This results shows that gender significantly (p=0.016) predicted academic achievement of senior baccalaureate nursing students. The findings concur with those of Ranasinghe *et al*., (2017) and Wijekoon *et al*., (2017) who saw gender to be significantly important for academic achievement. While this could be the case, the studies tested gender

differences rather than association. This finding however disagrees with findings by Sothan (2019) and Alshowkan *et al*., (2018) who found no significant association between gender and academic achievement. This discrepancy could be explained by the type of exam, because it focused on the current average grade scores of the participants rather than the licensing exams of nurse students.

There was not a statistically significant (p=0.629) relationship between parental income and academic achievement. This does not agree with Razia and Ahmad (2017) who found socio-economic status to be a predictor of academic performance. This means that as Alshammari *et al*., (2017) argued that students from poor parents may not perform well due to lack of academic resources, it may not be applicable to the current study. These discrepancies may be attributed to technological advancements where learners may be able to access content online including books and other resources. This in turn may minimize the need for purchasing some of these materials especially books.

Emotional intelligence was a significantly(p=0.017) positive predictor of academic achievement This is comparable to the findings of Tekle *et al*., (2019) who found a significant correlation between emotional intelligence and academic achievement, although it focused on university students and not precisely nursing students. Studies like Foster *et al*., (2017), Dagnit and Grinberg (2018) found attributes of emotional intelligence to be correlated with academic achievement. Others like Rode and Brown (2019) and Snowden *et al*., (2018) found emotional intelligence to be correlated with examination preparedness. This shows that emotional intelligence is an important predictor of academic achievement at least for nursing students. This may be ascribed to the self-control and well-being traits of EI which helped students concentrate on their studies and believe in themselves in achieving higher academic success.

CONCLUSION AND ACKNOWLEDGEMENT

There is a relationship between socio-demographic characteristics and average grade scores among senior baccalaureate students of nursing in Kenya. Specifically, gender influences the performance of nursing students. Males tend to perform better than their female counterparts. Socio-economic factors have no relationship with average grade scores among senior baccalaureate students of nursing in Kenya. Although students differed in their socio-economic status there was no relationship between the two variables. There is a relationship between trait EI and average grade among senior baccalaureate students of nursing in Kenya. Specifically, students with high emotional intelligence were more likely to perform better. However, majority of students had low emotional intelligence.

Female students should be trained on best academic practices to enhance their academic performance. Nursing schools in universities ought to offer EI skills training programs in their curriculum as it impacts their academic performance.

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