

## An Exploration of the Information Literacy and Academic Writing Skills of Final Year Undergraduate Nursing Students In Buea, Cameroon

Bih Vanessa Tita<sup>1</sup>, Niba Clinton Ambe<sup>1</sup>, Binwi Florence<sup>1</sup>, Palle John Ngunde<sup>1</sup>

<sup>1</sup>Department of Nursing, Faculty of Health Sciences, University of Buea, BP63 Buea, Cameroon

Corresponding author: Bih Vanessa Tita

**ABSTRACT:** Nursing students need information literacy and academic writing skills to conduct research. The aim of this study was to explore the information literacy and academic writing skills of final year undergraduate nursing students in Buea, identify the various challenges faced during academic writing and to outline their perceived opinions on the effective assistance of educators during academic writing. A cross-sectional study design was used. The study duration was for five months. A sample of 200 final year nursing students was purposively selected to take part in the study from four nursing institutions in Buea, Cameroon and distributed by probability proportionate to size. Data was collected using a semi-structured questionnaire and analyzed descriptively using SPSS 23.0. qualitative data generated from the open-ended questions were analyzed using thematic content analysis, grounding and transcriptions. The Chi-square test was used to measure association between categorical variables. Majority of the respondents reported to have moderate information literacy skills 102(51.0%) and moderate academic writing skills 92(46.0%). Also, they faced challenges during academic writing such as: poor supervision 128(64.0%), ineffective feedback from supervisors 120(60.0%), poor knowledge on search engines 114(57.0%), incompetency making conclusions on work read 112(56.0%), ineffective teaching of academic writing 106(53.0%) and poor usage of search engines 102(51.0%). The respondents suggested that effective and efficient teaching of academic writing 130(65.0%), effective feedback 80(40.0%), close supervision 60(30.0%), effective teaching of information literacy 25(12.5%) and search engines 23(11.5%), and seminars 7(3.5%) could enhance their academic writing.

**KEYWORDS:** *Academic Writing, Buea, Challenges, Information literacy, Nursing Students, Skills, Undergraduate*

### I. INTRODUCTION

Over the years, field-specific teaching of academic skills has gained ground [1]. Worldwide, students at the tertiary level of education are expected to take part in research activities and this includes nurses [2]. At undergraduate level, nursing students are expected to produce a number of types of academic writing, such as dissertations, written reflections, reports, reviews of journal articles and essays [3]. Although the acquisition of academic writing skills may be complex for the nursing students, educators act as tutors, facilitators and supervisors who bridge the gap and provide feedback to the students to help them be more proficient in academic writing [4]. In today's information-abundant era in the media, students need information literacy skills to choose the right information from the abundant information in the media [5]. This involves the ability to find, evaluate, organize and adequately use information [6, 7, 8, 9]. Information literacy enables nurses to also make effective decisions, solve problems and take responsibility for continued learning in areas of personal and professional interest [5]. Research proves that nursing students' information literacy skills influence their academic writing skills [10]. Thus, nursing students are expected to acquire both information literacy and academic writing skills in order to be prepared for their various nursing roles, including a scholar, a clinician, a professional, an educator and an advocate [11], and to enable them function efficiently with the rapid changing health care and research [5, 12].

Tarrant *et al* [12] found that nursing students did not feel competent in choosing suitable databases for literature searches, using a citation to a local journal article, conducting online bibliographic searches and using information technology to examine clinical problems. These findings are in line with the findings of Dorvlo [13] which reported that nursing students did not know how to identify their search needs and lacked skills for

formulating key words for their search. This lack of knowledge about search strategies and tools can cause inefficiency in locating vital and current information. Padagas and Hajan [10] on their part stated that nursing students lacked critical thinking in doing a literature review and also faced challenges on the appropriate tenses to be used in academic writing. These findings are however different to the findings of Shellenbarger *et al* [14] which reports that nursing students were proficient in writing and sometimes produced scholarly writing following standardized project formats, among others. Final year undergraduate nursing students are expected to carryout research and produce up-to-standard academic writing [2, 3]. This is to prepare them for the job market and enhance their personal and professional growth [10]. There is available data on the information literacy and academic writing skills of nursing students in other countries [2, 10, 13, 14]. However, there is no data on the information literacy and academic writing skills of final year undergraduate nursing students in Buea, Cameroon. So, this study was conducted to provide information on the actual skills of the students given that the targeted institutions are the main institutions in Buea which produce the highest number of nurses in the field. Therefore, the aim of this study is to investigate the information literacy and academic writing skills of final year undergraduate nursing students in Buea, identify the various challenges they face during academic writing and to investigate their perceived opinions on majors which educators could implement to ensure effective assistance to the student nurses during academic writing. Findings from this study will provide information on the actual information literacy and academic writing skills of final year undergraduate nursing students and motivate administrators of the various nursing schools to plan for effective and continues information literacy and academic writing education for the nursing students.

## II. MATERIAL AND METHODS

This study was conducted using a cross-sectional design. This study was carried out in the South West Region of Cameroon, precisely in the Buea Sub-Division of the Fako Division. The study participants were contacted through four nursing schools in Buea: University of Buea (UB), Biaka University Institute Buea (BUIB), Redemption Higher Institute of Biomedical and Management Sciences Buea (RHIBMS) and Higher Institute of Applied Medical Sciences Buea (HIAMS). UB is the lone state university in the Fako Division. It is located in Molyko, about 2.1km from mile 17. BUIB is located at Bokoko-Buea, few kilometers after the new GCE board climbing the hill. RHIBMS is situated in Molyko at Malingo. HIAMS is situated at Mile 17 and shares the same building with the NtarikonCooperative Credit Union. These institutions train nurses under the Department of Nursing. These institutions were chosen because they produce the highest number of nurses in the field.

The study population included all fourth year undergraduate nursing students: Bachelor of Science Degree (BSc) students in the chosen institutions. A semi-structured questionnaire was used to collect data. Data was collected on socio-demographic characteristics, the information literacy skills of student nurses, the academic writing skills of student nurses, challenges faced by student nurses during academic writing and students' perceived opinions to ensure that educators assist student nurses effectively during academic writing. The information literacy and academic writing skills of the students were categorized as low, moderate and high. The cumulative frequency was obtained.

Reliability was ensured by pre-testing the questionnaire with fourth year undergraduate nursing students of H.O.P.E University Institute (HUI)Limbe, and some corrections were made. This study was authorized by the Department of Nursing, Faculty of Health Sciences, University of Buea, Cameroon. Ethical clearance was obtained from the Faculty of Health Sciences Institutional Review Board (No. 1828-05). Administrative authorization was first obtained from the Regional Delegation of Public Health, Southwest Region (No. 688/523), and then from the administration of the selected nursing schools. Informed consent was obtained before the students were allowed to participate in the study. Data collected was entered into Epi Data version 3.1 which had in-built consistency and validation checks. Quantitative data was analyzed using SPSS version 23.0. Open-ended questions were analyzed using the process of thematic content analysis whereby concepts or ideas were grouped under the umbrella terms or key words.

Chi-square test of equality was used to compare proportions for significant difference and to measure association between categorical variables. The confidence level (CL) was fixed at 95% and  $p < 0.05$  was considered statistically significant.

## III. RESULTS

A total of 200 participants took part in this study and were aged 20 years old and above. The majority of the participants were 26-28 years old 66(33.0%), females 138(69.0%), single 130(65.0%) and studied at BUIB 142(71.0%) (Table 1).

Based on the information literacy skills of the students, a majority reported to have moderate skills to formulate keywords for search 118 (59.0%), could use search engines properly 106 (53.0), locate relevant information from the abundance of information in the media 118(59.0), critically evaluate information for literature review 96(48.0) and use journal articles during the literature review 106 (53.0) (Table 2). Cumulatively, a majority of the respondents 102(51.0%) reported to have moderate information literacy skills, 43(21.5%) had low information literacy skills and 55(27.5%) had high information literacy skills (Fig. 1).

Based on the academic writing skills of the respondents, a majority reported to have moderate skills to formulate a good research topic 114 (57.0), write specific objectives to achieve appropriate results in line with research topic 86 (43.0), choose an appropriate study design 112 (56.0) and had low skills to clearly identify the research problem 106(53.0) and interpret and present results 108(54.0) (Table 3). Cumulatively, the majority of our respondents 92(46.0%) reported to have moderate academic writing skills, 50(25.0%) had low academic writing skills and 58(29.0%) had high academic writing skills (Fig. 2). Academic writing was dependent on information literacy ( $p=0.019$ ) (Table 4).

Challenges faced by the respondents during academic writing included: poor supervision 128(64.0%), ineffective feedback 120(60.0%), poor knowledge on search engines 114(57.0%), incompetency making conclusions on work read 112(56.0%), ineffective teaching of academic writing 106(53.0%) and poor usage of search engines 102(51.0%) (Table 5). Academic writing was associated to challenges such as poor supervision ( $p=0.013$ ), poor knowledge on search engines ( $p=0.014$ ), ineffective teaching of academic writing ( $p=0.018$ ) and poor usage of search engines ( $p=0.007$ ) (Table 6).

The students suggested that effective and efficient teaching of academic writing 130(65.0%), effective feedback 80(40.0%), close supervision 60(30.0%), effective teaching of information literacy 25(12.5%) and search engines 23(11.5%), and seminars 7(3.5%) could enhance their academic writing (Table 7).

#### IV. DISCUSSION

The aim of this study was to explore the information literacy and academic writing skills of final year undergraduate nursing students in Buea, identify the various challenges they face during academic writing and identify their perceived opinions to ensure that nurse educators assist them effectively during academic writing. The majority of our respondents reported to have moderate 118(59.0%) to low skills 46(23.0%) to formulate key word for search. This means that students have intermediate skills to identify keywords for search and they do not know their search needs. These findings are similar to that of Dorvlo [13] where nursing students were incompetent in formulating keywords for their search and did not know how to identify their search needs. Also, this study revealed that, the majority of the respondents reported to have moderate 106(53.0%) to low skills 50(25.0%) to properly use search engines. Similarly, findings from the study of Tarrant *et al* [12] showed that students did not feel competent to choose appropriate databases for search. Interestingly, the majority of the respondents reported to have moderate skills 96(48.0%) to high skills 56(28.0%) to critically evaluate information for use. This means that nursing students can assess and make judgment on the information available and use it for literature review. These findings are different to that of Tarrant *et al*. [12] that showed that nursing students had poor evaluation skills. This difference in results could be because our respondents were full-time students who spend more hours in the classroom and are exposed to more exercises which might have helped them build evaluation skills for literature review while that of Tarrant *et al*. [12] were part-time students who spend lesser hours in the classroom. The mean overall information literacy skills of the nursing students in our study was moderate 102(51.0%), which was sparsely followed by high skills 55(27.5%). These findings are dissimilar to others [12, 13], where nursing students reported to have poor information literacy skills. This difference was probably because of the difference in study area and setting, and the fact that while our respondents were full-time students, theirs were part-time students.

This study revealed that student nurses have moderate 118(59.0%) to high skills 44(22.0%) in observing grammar rules. These findings are different to that of Padagas and Hajan [10] who showed that nursing students did not properly use tenses when writing. This difference in findings could probably be because English language is not the first language in the Philippines. The mean overall academic writing skills as reported by our respondents are moderate 92(46.0%), which is sparsely followed by high skills 58(29.0%). This implies that the respondents have intermediate writing skills and this can be related to the fact that scientific writing is not taught as a topic at the undergraduate level in our setting, but it is rather given as a template to be followed when writing thesis. Additionally, the students may have gained skills during the research process and learned some

tips from their supervisors, mentors and peers. These findings are contrary to that of Shellenbarger and Hunker [14] who showed that nursing students had high proficiency in academic writing. This difference in findings could be due to the difference in study setting, since their study participants are from the developed world and are more advanced than ours in education. Academic writing was dependent on information literacy ( $p=0.019$ ).

Majority of the respondents reported that poor supervision 128(64.0%) and ineffective feedback 120(60.0%) was a major challenge to them during academic writing. This could be related to the fact that; teachers supervising nursing students in our setting are often overloaded with work and may not always have the time to properly follow-up students and give detailed and timely feedback as needed. Moreover, students do not show up for meetings with supervisors due to clashes in their programs. These findings are similar to that of Musoro [2] which reported that supervisors' influence was a major challenge to the students during writing of research proposal. Also, the majority of our respondents 106(53.0%) reported that ineffective teaching of academic writing in school was a major challenge to them. This shows that academic writing is not properly taught in school and most final year undergraduate students hear about academic writing in their fourth year, when they are expected to produce a seminar paper and thesis. Furthermore, there was an association between academic writing and poor supervision ( $p=0.013$ ), and ineffective teaching of academic writing ( $p=0.018$ ).

To ensure that nurse educators assist nursing students effectively during academic writing, majority of the respondents 130 (65.5%) suggested that; academic writing should be effectively taught as a course or major topic before they are required to conduct research, and write their seminar paper and thesis. This could ensure that the students understand the entire concept before engaging into scientific writing. This is similar to the suggestions reported in the study of Hawks J. *et al* [15] which suggested that theory should be taught before practical which involves the research and writing. Also, the respondents suggested that supervisors should closely follow-up students 60(30.0%) and give timely and detailed feedback 80(40.0%). Timely and detailed feedback could help the students to specifically identify their mistakes and correct them appropriately. These results are the same as those reported in other studies [16, 17] which suggest that effective feedback helps the students improve on the logical flow, grammar and style of their work and help them quickly become proficient in writing. Also, the respondents suggested that information literacy 25(12.5%), including the various search engines 23(11.5%) should be taught in school for the undergraduate nursing students. This could ensure that the students have the required skills to locate and use relevant information properly and also know relevant sources to get this information. This could be enhanced through a blend of interactive and student-centered learning approach in the classroom, as proposed by some studies [18, 19].

## V. CONCLUSION

The study revealed that the information literacy and academic writing skills of undergraduate nursing students is moderate. Academic writing is dependent on information literacy. Although the students had moderate academic writing skills, effective and efficient teaching of academic writing, provision of timely and detailed feedback and close supervision can enhance their skills to proficiency. In addition, a qualitative study should be carried out on educators to determine the actual undergraduate final year nursing students' performance on academic writing since they are the students' examiners.

## VI. ACKNOWLEDGEMENTS

The authors would like to thank all the participants who took part in this study.

### Limitations of the Study

This study was a self-report done by the students, and some students may have exaggerated or withheld some important information.

### Conflict of Interest

The authors declare that they have no conflicts of interest.

### Author's Contribution

All authors participated in the methodological assessment and design of the study. BV conceived the research idea. BV and NC collected and analyzed the data under the academic supervision of BF and PJ. BV wrote the initial draft of this paper while NC, BF and PJ gave comments on the subsequent and final version of the paper. All authors read and approved the final manuscript.

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## TABLES

**Table 1: Socio-demographic Characteristics of the Participants**

Variables	Categories	Frequency (n)	Percentage (%)
Age	20-22	48	24.0
	23-25	58	29.0
	26-28	66	33.0
	29-31	12	6.0
	32+	16	8.0
	<b>Total</b>		200
Gender	Male	62	31.0
	Female	138	69.0
	<b>Total</b>	200	100.0
Marital Status	Married	70	35.0
	Single	130	65.0
	<b>Total</b>	200	100.0



School	UB	17	8.5
	BUIB	142	71.0
	RHIBMS	34	17.0
	HIAMS	7	3.5
	<b>Total</b>	200	100.0

**Table 2: Information Literacy Skills of Student Nurses**

Skills	Low [n(%)]	Moderate [n(%)]	High [n(%)]	Total [n(%)]	Mean $\pm$ SD
Formulate key word for search	46 (23.0)	118 (59.0)	36(18.0)	200(100.0)	1.9500 $\pm$ 0.64157
Use search engines properly	50 (25.0)	106 (53.0)	44(22.0)	200(100.0)	1.9700 $\pm$ 0.67652
Locate relevant information from the abundance of information in the media	44(22.0)	118(59.0)	58(29.0)	200(100.0)	2.1000 $\pm$ 0.72363
Critically evaluate information for my literature review	48(24.0)	96(48.0)	56(28.0)	200(100.0)	2.0700 $\pm$ 0.71428
Use journal articles during the literature review because they are highly reliable	34 (17.0)	106 (53.0)	60(30.0)	200(100.0)	2.0400 $\pm$ 0.68902
Use information ethically and legally	34 (17.0)	66 (33.0)	60(30.0)	200(100.0)	2.1300 $\pm$ 0.68836

**Table 3: Academic Writing Skills of Student Nurses**

Skills	Low [n(%)]	Moderate [n(%)]	High [n(%)]	Total [n(%)]	Mean $\pm$ SD
Formulate a good research topic	32 (16.0)	114 (57.0)	54(27.0)	200(100.0)	2.1100 $\pm$ 0.64971
Clearly identify the research problem	106(53.0)	30 (15.0)	64(32.0)	200(100.0)	2.1700 $\pm$ 0.66750
Ask appropriate research questions in line with the research topic	42 (21.0)	86 (43.0)	72(36.0)	200(100.0)	2.1500 $\pm$ 0.74366
Come up with specific objective to achieve appropriate results in line with my research topic	32 (16.0)	86 (43.0)	82(41.0)	200(100.0)	2.2500 $\pm$ 0.71598
Write an organized and standard literature review	52 (26.0)	116 (58.0)	32(16.0)	200(100.0)	1.9000 $\pm$ 0.64354
Choose the appropriate study design for the research	44 (22.0)	112 (56.0)	44(22.0)	200(100.0)	2.0000 $\pm$ 0.66667
Technical writing skills	42(21.0)	120(60.0)	38(19.0)	200(100.0)	2.0200 $\pm$ 0.63532
Use grammar rules properly	38 (19.0)	118 (59.0)	44(22.0)	200(100.0)	2.0300 $\pm$ 0.64283
Interpret and present results	108(54.0)	48(24.0)	44(22.0)	200(100.0)	1.9800 $\pm$ 0.68135
Cite sources of information both in text and references according to the specific style used by the institution	36 (18.0)	94 (47.0)	70(35.0)	200(100.0)	2.1700 $\pm$ 0.71145
Follow all ethical considerations during research	26 (13.0)	88 (44.0)	84(42.0)	200(100.0)	2.5000 $\pm$ 2.18119

**Table 4: Association between Information Literacy and Academic Writing skills of Student Nurses using the Chi Square Test**

	Value	df	P-value
<b>Pearson Chi-Square (<math>X^2</math>)</b>	6.188	4	0.019
<b>N of Valid Cases</b>	200		

**Table 5: Challenges faced by Student Nurses during Academic Writing**

Challenges	Yes [n(%)]	No [n(%)]	Total [n(%)]	Mean $\pm$ SD
Difficulties in the formation of key words for search	98 (49.0)	102 (51.0)	200(100.0)	1.5500 $\pm$ 0.53889
Difficulties constructing a good topic	86 (43.0)	114 (57.0)	200(100.0)	1.5900 $\pm$ 0.53362
Difficulties constructing research objectives	98 (49.0)	102 (51.0)	200(100.0)	1.6700 $\pm$ 0.51355
Difficulties in citation	80 (40.0)	120 (60.0)	200(100.0)	1.5500 $\pm$ 0.51981
Difficulties evaluating literature available online	98 (49.0)	102 (51.0)	200(100.0)	1.5200 $\pm$ 0.52185
Difficulties in writing literature review	96 (48.0)	104 (52.0)	200(100.0)	1.5400 $\pm$ 1.16706
Teachers do not teach information literacy in school	90 (45.0)	110 (55.0)	200(100.0)	1.4900 $\pm$ 0.50242
Teachers do not teach academic writing in school	96 (48.0)	104 (52.0)	200(100.0)	1.3700 $\pm$ 0.48524

**Table 6: Association between Students' Challenges and Academic writing**

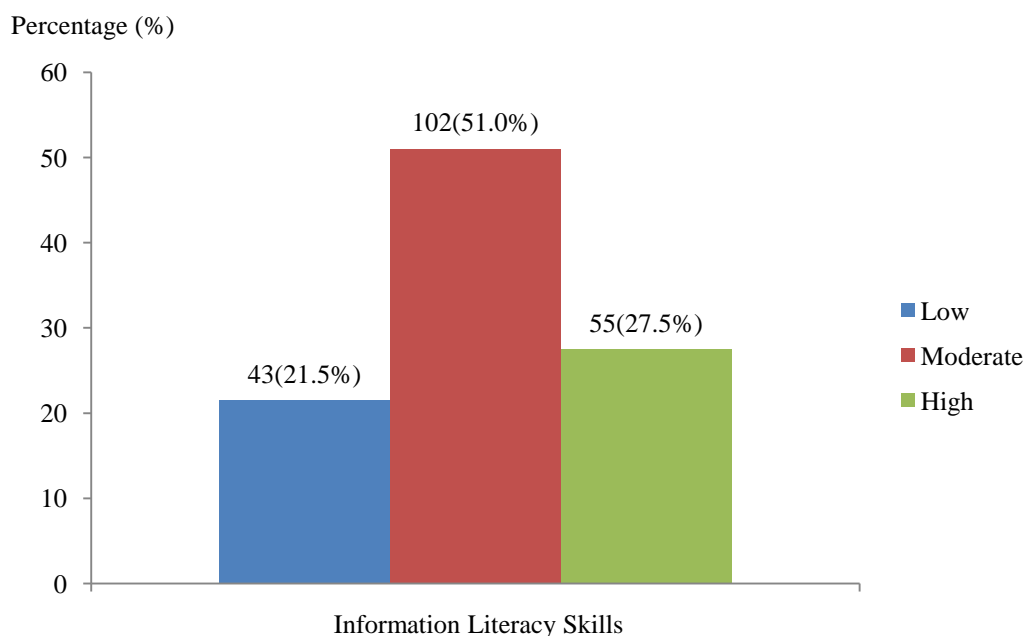
Challenges	Yes [n(%)]	No [n(%)]	Total [n(%)]	$X^2$	df	P-value
Difficulties in the formation of key words for search	98 (49.0)	102 (51.0)	200(100.0)	10.787	4	0.003
Difficulties constructing a good topic	86 (43.0)	114 (57.0)	200(100.0)	19.683	4	0.000
Difficulties constructing research objectives	98 (49.0)	102 (51.0)	200(100.0)	9.272	4	0.006
Difficulties in citation	80 (40.0)	120 (60.0)	200(100.0)	4.842	4	0.030
Difficulties evaluating literature available online	98 (49.0)	102 (51.0)	200(100.0)	2.225	4	0.070
Difficulties making conclusions on work read	112(56.0)	88(44.0)	200(100.0)	0.195	4	0.091
Poor knowledge on search engines	114(57.0)	86(43.0)	200(100.0)	3.876	4	0.014
Difficulties in using search engines properly	102(51.0)	98(49.0)	200(100.0)	8.646	4	0.007
Difficulties in writing literature review	96 (48.0)	104 (52.0)	200(100.0)	3.155	2	0.027
Teachers do not teach information literacy in school	90 (45.0)	110 (55.0)	200(100.0)	2.481	2	0.029
Teachers do not teach academic writing in school	96 (48.0)	104 (52.0)	200(100.0)	3.460	2	0.018
My supervisor does not closely interact and collaborate with me	128(64.0)	72(36.0)	200(100.0)	7.211	4	0.013
Teachers do not take time to teach academic writing in school	106(53.0)	94(47.0)	200(100.0)	5.037	2	0.081
Teachers do not provide specific and	120(60.0)	80(40.0)	200(100.0)	0.407	2	0.082

timely feedback during research activities

**Table 7: Thematic Analysis depicting the Perceived Opinions of the Students to ensure that Educators assist Student Nurses Effectively during Academic Writing**

Code Description	Grounding	Quotation
Effective and efficient teaching of academic writing for under-Graduates	130	<i>'I suggest academic writing is taught in lower classes before final year to avoid difficulties faced by students'</i> <i>'teach academic writing as a course or full topic on its own and not just tell us about it'</i> <i>'teachers should take their time to teach academic writing in school than just rushing over it'</i> <i>'teachers should teach academic writing in details and ensure that we understand what they are teaching'</i> <i>'teachers should be organized in teaching research and academic writing'</i>
Timely and detailed feedback	80	<i>'timely feedback'</i> <i>'detailed correction of thesis work''</i> <i>'provide specific and adequate feedback'</i>
Close Supervision and follow up	60	<i>'close supervision and constant follow-up each time'</i> <i>'teachers should create more time for supervision and follow-up'</i> <i>'teachers should know their supervisees'</i> <i>'cordial relationship with students will ease understanding better'</i> <i>'teachers should try and follow us up even through phone calls'</i> <i>'proper explanation of what to do at each stage of writing'</i>
Teach information literacy	25	<i>'teach information literacy in school'</i> <i>'teach us how to identify all the keywords for search'</i>
Teach search engines	23	<i>'teach the search engines that can be used to locate relevant information and how to use them'</i> <i>'create awareness on the search engines which we students can use so that we have the correct information'</i> <i>'more emphasis should be made on how to use various search engines in research'</i>
Seminars	7	<i>'organize seminars where students will write and present on other published works so that they learn better'</i>

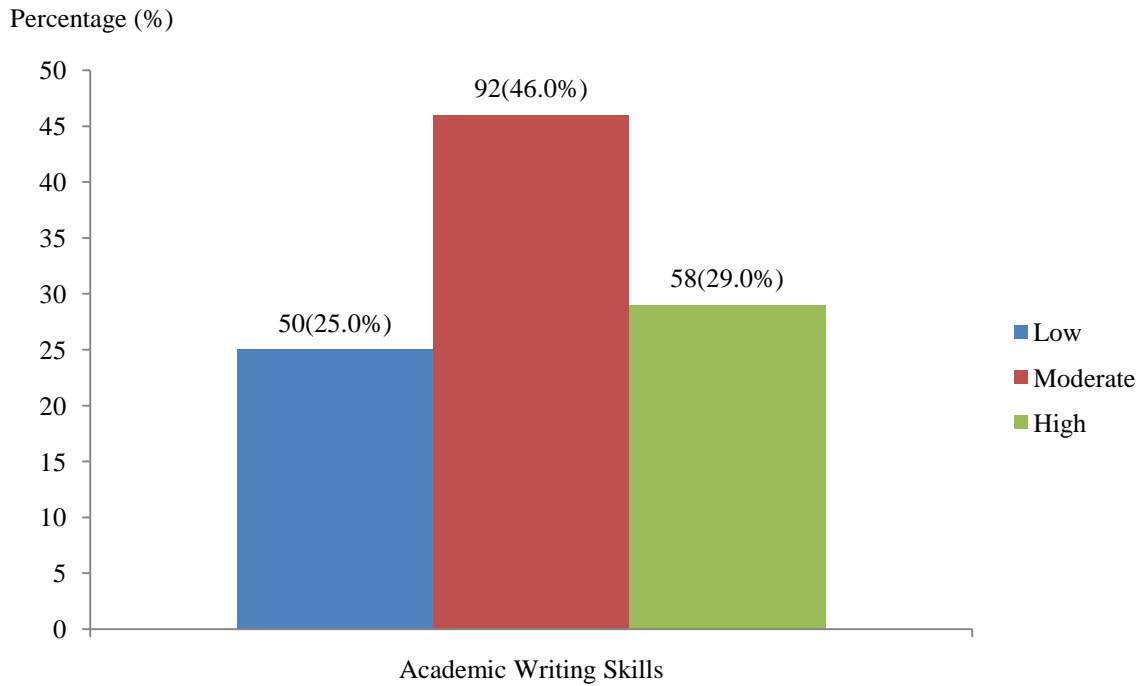
### FIGURES





(Mean=2.0433 and SD=0.04679)

**Figure 1: Cumulative information literacy skills of the student nurses**



(Mean=2.0788 and SD=1.51369)

**Figure 2: Cumulative academic writing skills of the student nurses**