

## **Relationship between Lip Print Pattern and Academic Performance of Secondary School Students in Dutse Local Government, Dutse, Jigawa State**

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### **Abstract**

Identity means a set of physical characteristics which could be functional or physical, normal or pathological that defines an individual. Lip prints are usual outlines and cracks, which can be seen like lines and rucks present on human lip. The groove present on the red part of human lips is unique and it is used to determine the identity of a person. Students' performances play a role in the production of best quality graduate who will become great leaders and manpower for the country thus responsible for country's economic and social development. The aim of the study is to investigate relationship between lip print pattern and academic performance among students in selected secondary school in Dutse local government area. Of the 225 participants, it shows that females (55.55%) participants were much than males (44.45%) participants. It also shows the distribution of academic performances in the study population showing that average performance (49.45%) has the highest frequency, followed by high performance (28.11%) and the least is low performance (22.33%). This research study shows that students with high, average and low academic performances in the Upper quadrants for both males and females have Type IIA as their most common lip pattern while in the Lower Quadrants, the most common lip pattern was TypeIII and IIA in males with high and average performances, Type IIB for Lower performances. In females, the most common pattern for students with high performance was TypeIII, TypeIIA for Average and Low performances. Based on the research carried out between lip print and academic performances, the results shows clearly that there was no relationship between them and were not statistically significant.

**Keywords:** Lip print, Academic Performance, quadrants, pattern

**Citation:** Umar MI, Liman HJ, Yunusa BM, Aminu I, Adam SA, Umar KB, Umar HO, Obeagu EI. Relationship between Lip Print Pattern and Academic Performance of Secondary School Students in Dutse Local Government, Dutse, Jigawa State. *Elite Journal of Scientific Research and Review*, 2024; 2(3): 37-48

## Introduction

Establishment of human identification using features such as skeletal and dental traits has provided a wide range of data for routine forensic findings, law enforcement agencies, judicial system, mass disasters, legal proceedings and paleoanthropology.<sup>1</sup> This is based upon proved scientific methodological ideologies and certain physical unique individual characteristics, the objective of which is used to predict, identify and register individuals for civil, criminal and forensic purposes.<sup>2</sup> Identity means a set of physical characteristics which could be functional or physical, normal or pathological that defines an individual.<sup>3</sup> Lip prints are usual outlines and cracks, which can be seen like lines and rucks present on human lip. The groove present on the red part of human lips is unique and it is used to determine the identity of a person.<sup>3</sup> Forensic anthropologist employ different methods in which an individual can be identified such as fingerprinting, DNA fingerprinting, postmortem report and lip print.<sup>4</sup>

Assessing students' academic performance serves as a cautionary tale for the students and to know their performance level and make subsequent improvements.<sup>5</sup> Education is a key factor of human resource development.<sup>6</sup> Students should demonstrate their knowledge in different ways mostly by taking oral and written tests, practicals, assignments, presentations and participating in class activities and discussions. Students' performances play a role in the production of best quality graduate who will become great leaders and manpower for the country thus responsible for country's economic and social development.<sup>6-11</sup>

## Materials and Methods

### Study Area

The study was conducted at Dutse local government area of Jigawa State.

### Study Population

A total number of 225 students were selected comprising both genders from secondary section of Dutse Capital School and Dutse International Science College.

### Ethical Approval

The research work was approved by the Chairman of Ethical Review Committee, Department of Anatomy, Faculty of Basic Medical Sciences, Federal University Dutse, Jigawa State, Nigeria. The informed consents of the participated students were signed by the school management on behalf of the students.

**Citation:** Umar MI, Liman HJ, Yunusa BM, Aminu I, Adam SA, Umar KB, Umar HO, Obeagu EI. Relationship between Lip Print Pattern and Academic Performance of Secondary School Students in Dutse Local Government, Dutse, Jigawa State. *Elite Journal of Scientific Research and Review*, 2024; 2(3): 37-48

### **Sample size and Sampling Method**

A sample size of two hundred and twenty-five (225) subjects was obtained from two secondary schools within Dutse comprising of 125 females and 100 males within the ages of 10 to 18years. The subjects were randomly selected through Simple Random Sampling method.

### **Inclusion Criteria**

1. Participants are residents of Dutse Local Government
2. Participant must be a student in secondary school and must have spent at least one academic year in the selected school
3. Participants whose lips are free from inflammation
4. Participants with proper and complete records of his/her 2021/2022 session results.

### **Exclusion Criteria**

1. Participant with any congenital lip deformity
2. Presence of inflammatory lip diseases
3. Participants who have not spent at least one academic year in the selected school

### **Data Collection Methods**

#### **Lip Print Collection**

The Subjects were made to stand in a relaxed position, clean his/her lips of any dirt and apply lip gloss on their lips. After the application of the lip gloss, the subject is asked to rub their lips together for the even distribution of the lip gloss. The lip impression was taken on a glass slide by placing the glass slide on the subject lip, then the glass slides is removed from the lip and a black carbon powder is sprinkled on the glass slide with a puff. Excessive carbon powder was blown away with air from the mouth. The carbon black powder helps to develop the lip print and preserve it before interpretation.

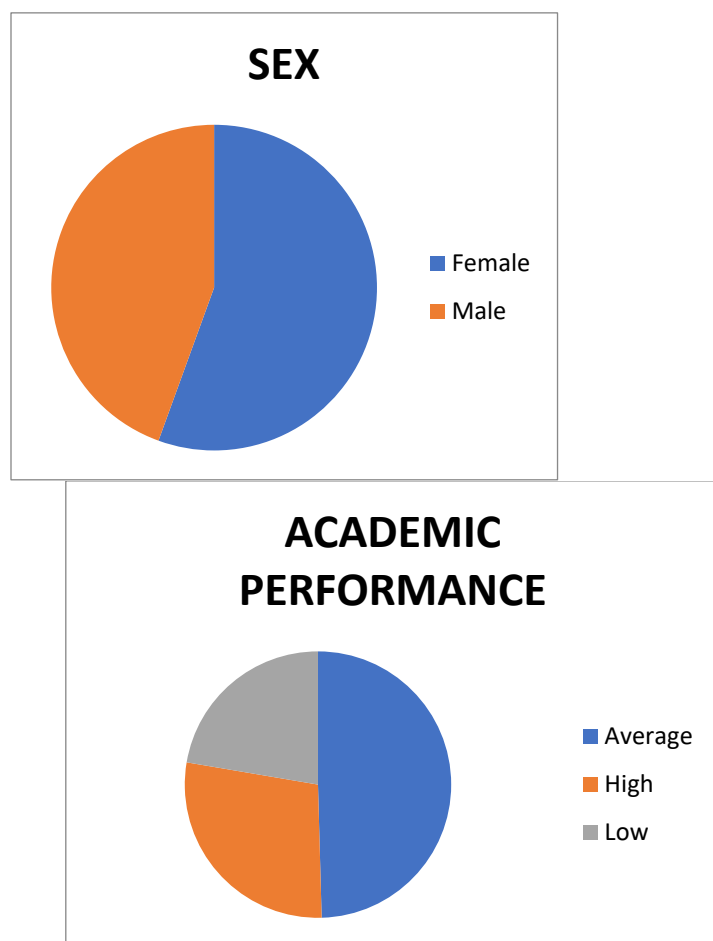
Lip print is protected and attached by a strip of transparent cellophane tape on the individual questionnaire. The lip prints are studied and interpreted with a magnifying lens using Hassan and Fahmy classification

### **Statistical Analysis**

Descriptive statistics for variables were presented with tables. The percentage (%) distribution of lip prints pattern for sex and academic performances was calculated using SPSS (Statistical Product and Service Solutions version20.0) software. Statistical significance was put into consideration using one-way Analysis of Variance (ANOVA) where level of significance was deemed acceptable at  $p < 0.005$ .

### **Results**

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**Figure 1: Sex and academic performance for the study population**

Figure 1 shows the distribution of both sexes in the study population. It shows that females (55.55%) participants were much than males (44.45%) participants. It also shows the distribution of academic performances in the study population showing that average performance (49.45%) has the highest frequency, followed by high performance (28.11%) and the least is low performance (22.33%).

**Table 2: Distribution of lip print pattern and Academic performance on the upper right quadrant**

Group	A.P	URQ								Chi-square analysis		
		IA	IIA	IB	IIB	III	IV	V	V*	$\chi^2$ -value	df	P-value
Male	High	11 11.0%	37 37.0%	10 10.0%	9 9.0%	22 22.0%	2 2.0%	9 9.0%		10.159	12	0.602

**Citation:** Umar MI, Liman HJ, Yunusa BM, Aminu I, Adam SA, Umar KB, Umar HO, Obeagu EI. Relationship between Lip Print Pattern and Academic Performance of Secondary School Students in Dutse Local Government, Dutse, Jigawa State. *Elite Journal of Scientific Research and Review*, 2024; 2(3): 37-48

	<b>Average</b>	15 7.9%	69 36.5%	12 6.3%	11 5.8%	51 27.0%	4 2.1%	27 14.3%				
	<b>Low</b>	7 7.4%	45 47.9%	4 4.3%	6 6.4%	19 20.2%	3 3.2%	10 10.6%				
	<b>Total</b>	33 8.6%	151 39.4%	26 6.8%	26 6.8%	92 24.0%	9 2.3%	46 12.0%				
<b>Female</b>	<b>High</b>	8 5.2%	41 26.8%	17 11.1%	13 8.5%	51 33.3%	6 3.9%	15 9.8%	2 1.3%			
	<b>Average</b>	11 4.3%	96 37.4%	24 9.3%	27 10.5%	54 21.0%	7 2.7%	36 14.0%	2 0.8%	15.181	14	0.366
	<b>Low</b>	6 5.6%	38 35.5%	11 10.3%	12 11.2%	29 27.1%	2 1.9%	9 8.4%	0 0.0%			
	<b>Total</b>	25 4.8%	175 33.8%	52 10.1%	52 10.1%	134 25.9%	15 2.9%	60 11.6%	4 0.8%			
	<b>High</b>	19 7.5%	78 30.8%	27 10.7%	22 8.7%	73 28.9%	8 3.2%	24 9.5%	2 0.8%			
<b>Total</b>	<b>Average</b>	26 5.8%	165 37.0%	36 8.1%	38 8.5%	105 23.5%	11 2.5%	63 14.1%	2 0.4%	13.969	14	0.452
	<b>Low</b>	13 6.5%	83 41.3%	15 7.5%	18 9.0%	48 23.9%	5 2.5%	19 9.5%	0 0.0%			
	<b>Total</b>	58 6.4%	326 36.2%	78 8.7%	78 8.7%	226 25.1%	24 2.7%	106 11.8%	4 0.4%			

Note: URQ=Upper right quadrant, A.P=Academic performance,  $\chi^2$ =Chi-square, df=degree of freedom

**Table 3: Academic performance and distribution of lip print pattern on the upper middle quadrant**

Group	A.P	UMQ								Chi-square analysis		
		IA	IIA	IB	IIB	III	IV	V	V*	$\chi^2$ -value	df	P-value
<b>Male</b>	<b>High</b>	5 5.0%	45 45.0%	6 6.0%	9 9.0%	17 17.0%	10 10.0%	8 8.0%				
	<b>Average</b>	14 7.4%	83 43.9%	3 1.6%	13 6.9%	31 16.4%	17 9.0%	28 14.8%				
	<b>Low</b>	6 6.4%	43 45.7%	4 4.3%	6 6.4%	14 14.9%	9 9.6%	12 12.8%				
	<b>Total</b>	25 6.5%	171 44.6%	13 3.4%	28 7.3%	62 16.2%	36 9.4%	48 12.5%				
	<b>High</b>	6 3.9%	62 40.5%	14 9.2%	10 6.5%	30 19.6%	16 10.5%	11 7.2%	4 2.6%			
<b>Female</b>	<b>Average</b>	7 2.7%	116 45.1%	19 7.4%	18 7.0%	43 16.7%	29 11.3%	24 9.3%	1 .4%	14.748	14	0.396

**Citation:** Umar MI, Liman HJ, Yunusa BM, Aminu I, Adam SA, Umar KB, Umar HO, Obeagu EI. Relationship between Lip Print Pattern and Academic Performance of Secondary School Students in Dutse Local Government, Dutse, Jigawa State. *Elite Journal of Scientific Research and Review*, 2024; 2(3): 37-48

	<b>Low</b>	4 3.7%	53 49.5%	10 9.3%	4 3.7%	14 13.1%	8 7.5%	14 13.1%	0 0.0%			
	<b>Total</b>	17 3.3%	231 44.7%	43 8.3%	32 6.2%	87 16.8%	53 10.3%	49 9.5%	5 1.0%			
	<b>High</b>	11 4.3%	107 42.3%	20 7.9%	19 7.5%	47 18.6%	26 10.3%	19 7.5%	4 1.6%			
<b>Total</b>	<b>Average</b>	21 4.7%	199 44.6%	22 4.9%	31 7.0%	74 16.6%	46 10.3%	52 11.7%	1 .2%	17.038	14	0.254
	<b>Low</b>	10 5.0%	96 47.8%	14 7.0%	10 5.0%	28 13.9%	17 8.5%	26 12.9%	0 0.0%			
	<b>Total</b>	42 4.7%	402 44.7%	56 6.2%	60 6.7%	149 16.6%	89 9.9%	97 10.8%	5 .6%			

Note: UMQ=Upper middle quadrant, A.P=Academic performance,  $\chi^2$ =Chi-square, df=degree of freedom

**Table 4: Distribution of lip print types and academic performance the upper left quadrant**

Group	A.P	ULQ								Chi-square analysis		
		IA	IIA	IB	IIB	III	IV	V	V*	$\chi^2$ -value	df	P-value
Male	<b>High</b>	10 10.0%	31 31.0%	7 7.0%	4 4.0%	21 21.0%	8 8.0%	18 18.0%	1 1.0%			
	<b>Average</b>	12 6.3%	61 32.3%	13 6.9%	16 8.5%	41 21.7%	8 4.2%	37 19.6%	1 .5%	7.451	14	0.916
	<b>Low</b>	5 5.3%	34 36.2%	7 7.4%	9 9.6%	17 18.1%	4 4.3%	17 18.1%	1 1.1%			
	<b>Total</b>	27 7.0%	126 32.9%	27 7.0%	29 7.6%	79 20.6%	20 5.2%	72 18.8%	3 .8%			
	<b>High</b>	4 2.6%	45 29.4%	23 15.0%	6 3.9%	40 26.1%	13 8.5%	18 11.8%	4 2.6%			
Female	<b>Average</b>	10 3.9%	89 34.6%	26 10.1%	19 7.4%	53 20.6%	20 7.8%	37 14.4%	3 1.2%	12.507	14	0.566
	<b>Low</b>	7 6.5%	35 32.7%	9 8.4%	7 6.5%	27 25.2%	6 5.6%	15 14.0%	1 .9%			
	<b>Total</b>	21 4.1%	169 32.7%	58 11.2%	32 6.2%	120 23.2%	39 7.5%	70 13.5%	8 1.5%			
	<b>High</b>	14 5.5%	76 30.0%	30 11.9%	10 4.0%	61 24.1%	21 8.3%	36 14.2%	5 2.0%			
	<b>Average</b>	22 4.9%	150 33.6%	39 8.7%	35 7.8%	94 21.1%	28 6.3%	74 16.6%	4 .9%	12.433	14	0.572
Total	<b>Low</b>	12	69	16	16	44	10	32	2			

**Citation:** Umar MI, Liman HJ, Yunusa BM, Aminu I, Adam SA, Umar KB, Umar HO, Obeagu EI. Relationship between Lip Print Pattern and Academic Performance of Secondary School Students in Dutse Local Government, Dutse, Jigawa State. *Elite Journal of Scientific Research and Review*, 2024; 2(3): 37-48

	6.0%	34.3%	8.0%	8.0%	21.9%	5.0%	15.9%	1.0%
	48	295	85	61	199	59	142	11
<b>Total</b>	5.3%	32.8%	9.4%	6.8%	22.1%	6.6%	15.8%	1.2%

Note: ULQ=Upper left quadrant, A.P=Academic performance,  $\chi^2$ =Chi-square, df=degree of freedom

**Table 5: Distribution and association of academic performance and lip pint pattern in the LRQ stratified by sex**

Group	A.P	LRQ								Chi-square analysis		
		IA	IIA	IB	IIB	III	IV	V	V*	$\chi^2$ -value	df	P-value
Male	High	3	34	8	16	34	1	4	0	30.595	14	0.006
		3.0%	34.0%	8.0%	16.0%	34.0%	1.0%	4.0%	0.0%			
	Average	17	46	13	42	50	3	16	2			
		9.0%	24.3%	6.9%	22.2%	26.5%	1.6%	8.5%	1.1%			
	Low	5	23	4	26	16	7	12	1			
Female		5.3%	24.5%	4.3%	27.7%	17.0%	7.4%	12.8%	1.1%	14.546	14	0.410
	Total	25	103	25	84	100	11	32	3			
		6.5%	26.9%	6.5%	21.9%	26.1%	2.9%	8.4%	.8%			
	High	5	38	21	32	40	7	10	0			
		3.3%	24.8%	13.7%	20.9%	26.1%	4.6%	6.5%	0.0%			
Total	Average	11	55	33	64	74	5	14	1	26.932	14	0.020
		4.3%	21.4%	12.8%	24.9%	28.8%	1.9%	5.4%	.4%			
	Low	11	25	10	25	24	3	9	0			
		10.3%	23.4%	9.3%	23.4%	22.4%	2.8%	8.4%	0.0%			
	Total	27	118	64	121	138	15	33	1			
Total		5.2%	22.8%	12.4%	23.4%	26.7%	2.9%	6.4%	.2%	26.932	14	0.020
	High	8	72	29	48	74	8	14	0			
		3.2%	28.5%	11.5%	19.0%	29.2%	3.2%	5.5%	0.0%			
	Average	28	101	46	106	124	8	30	3			
		6.3%	22.6%	10.3%	23.8%	27.8%	1.8%	6.7%	.7%			
Total	Low	16	48	14	51	40	10	21	1	26.932	14	0.020
		8.0%	23.9%	7.0%	25.4%	19.9%	5.0%	10.4%	.5%			
	Total	52	221	89	205	238	26	65	4			
		5.8%	24.6%	9.9%	22.8%	26.4%	2.9%	7.2%	.4%			

Note: LRQ=Lower right quadrant, A.P=Academic performance,  $\chi^2$ =Chi-square, df=degree of freedom

**Table 6: Distribution and association of lip print pattern and academic performance in the LMQ stratified by sex**

Group	A.P	LMQ								Chi-square analysis		
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**Citation:** Umar MI, Liman HJ, Yunusa BM, Aminu I, Adam SA, Umar KB, Umar HO, Obeagu EI. Relationship between Lip Print Pattern and Academic Performance of Secondary School Students in Dutse Local Government, Dutse, Jigawa State. *Elite Journal of Scientific Research and Review*, 2024; 2(3): 37-48



		IA	IIA	IB	IIB	III	IV	V	V*	$\chi^2$ - value	df	P- value
Male	High	10 10.0%	47 47.0%	7 7.0%	4 4.0%	18 18.0%	2 2.0%	11 11.0%	1 1.0%	15.949b	14	0.317
	Average	19 10.1%	90 47.6%	5 2.6%	10 5.3%	25 13.2%	17 9.0%	21 11.1%	2 1.1%			
	Low	12 12.8%	51 54.3%	6 6.4%	4 4.3%	7 7.4%	4 4.3%	10 10.6%	0 0.0%			
	Total	41 10.7%	188 49.1%	18 4.7%	18 4.7%	50 13.1%	23 6.0%	42 11.0%	3 .8%			
Female	High	15 9.8%	77 50.3%	5 3.3%	7 4.6%	18 11.8%	18 11.8%	12 7.8%	1 .7%	8.593	14	0.856
	Average	22 8.6%	128 49.8%	6 2.3%	16 6.2%	35 13.6%	21 8.2%	28 10.9%	1 .4%			
	Low	12 11.2%	49 45.8%	1 .9%	7 6.5%	14 13.1%	8 7.5%	16 15.0%	0 0.0%			
	Total	49 9.5%	254 49.1%	12 2.3%	30 5.8%	67 13.0%	47 9.1%	56 10.8%	2 .4%			
Total	High	25 9.9%	124 49.0%	12 4.7%	11 4.3%	36 14.2%	20 7.9%	23 9.1%	2 .8%	9.818	14	0.775
	Average	41 9.2%	218 48.9%	11 2.5%	26 5.8%	60 13.5%	38 8.5%	49 11.0%	3 .7%			
	Low	24 11.9%	100 49.8%	7 3.5%	11 5.5%	21 10.4%	12 6.0%	26 12.9%	0 0.0%			
	Total	90 10.0%	442 49.1%	30 3.3%	48 5.3%	117 13.0%	70 7.8%	98 10.9%	5 .6%			

Note: LMQ=Lower middle quadrant, A.P=Academic performance,  $\chi^2$ =Chi-square, df=degree of freedom

**Table 7: Distribution and association of lip print pattern and academic performance in the LLQ stratified by sex**

Group	A.P	LLQ								Chi-square analysis		
		IA	IIA	IB	IIB	III	IV	V	V*	$\chi^2$ - value	df	P- value
Male	High	10 10.0%	24 24.0%	8 8.0%	23 23.0%	26 26.0%	3 3.0%	4 4.0%	2 2.0%	6.226	14	0.960
	Average	23 12.2%	46 24.3%	11 5.8%	39 20.6%	47 24.9%	8 4.2%	13 6.9%	2 1.1%			
	Low	13 13.8%	18 19.1%	5 5.3%	24 25.5%	23 24.5%	5 5.3%	6 6.4%	0 0.0%			
	Total	46	88	24	86	96	16	23	4			

**Citation:** Umar MI, Liman HJ, Yunusa BM, Aminu I, Adam SA, Umar KB, Umar HO, Obeagu EI. Relationship between Lip Print Pattern and Academic Performance of Secondary School Students in Dutse Local Government, Dutse, Jigawa State. *Elite Journal of Scientific Research and Review*, 2024; 2(3): 37-48



		12.0%	23.0%	6.3%	22.5%	25.1%	4.2%	6.0%	1.0%			
	<b>High</b>	8	38	19	25	45	6	9	3			
		5.2%	24.8%	12.4%	16.3%	29.4%	3.9%	5.9%	2.0%			
<b>Female</b>	<b>Average</b>	16	58	11	66	65	17	21	3	20.339	14	0.120
		6.2%	22.6%	4.3%	25.7%	25.3%	6.6%	8.2%	1.2%			
	<b>Low</b>	6	31	9	21	28	3	9	0			
		5.6%	29.0%	8.4%	19.6%	26.2%	2.8%	8.4%	0.0%			
	<b>Total</b>	30	127	39	112	138	26	39	6			
		5.8%	24.6%	7.5%	21.7%	26.7%	5.0%	7.5%	1.2%			
	<b>High</b>	18	62	27	48	71	9	13	5			
		7.1%	24.5%	10.7%	19.0%	28.1%	3.6%	5.1%	2.0%			
<b>Total</b>	<b>Average</b>	39	104	22	105	112	25	34	5	17.888	14	0.212
		8.7%	23.3%	4.9%	23.5%	25.1%	5.6%	7.6%	1.1%			
	<b>Low</b>	19	49	14	45	51	8	15	0			
		9.5%	24.4%	7.0%	22.4%	25.4%	4.0%	7.5%	0.0%			
	<b>Total</b>	76	215	63	198	234	42	62	10			
		8.4%	23.9%	7.0%	22.0%	26.0%	4.7%	6.9%	1.1%			

Note: LLQ=Lower left quadrant, A.P=Academic performance,  $\chi^2$ =Chi-square, df=degree of freedom

### Discussion

Based on the data presented on Table 2; In males, the most frequent lip pattern with high, average and low academic performances in the upper right quadrant was TypeIIA (37.0%,36.5% and 47.9%) respectively. In females, the most frequent lip print pattern with high academic performance was TypeIII (33.3%), average and low academic performance was TypeIIA (37.4% and 35.5%) respectively. In the URQ, the most frequent lip pattern for students with high, average and low academic performance was Type IIA in males. In females, the most frequent lip pattern was TypeIIA for Average and low A.P and Type III for High A.P The test of association between lip print and academic performance in the URQ was not significant ( $X^2=13.696$ ,  $P=0.452$ ) Based on the data presented on Table 3; In males, the most frequent lip print pattern in the UMQ for high, average and low academic performance was TypeIIA (45.0%,43.9% and 45.7%) respectively. In females, the most frequent lip print pattern for high, average and low academic performance was TypeIIA (40.5%,45.1% and 49.5%) respectively. In both sexes, the most frequent lip print pattern for student with high, average and low academic performance was Type IIA. The test of association between lip print pattern and A.P in the UMQ was not significant ( $X^2=17.038$ ,  $P=0.254$ ) Based on the data presented on Table 4; in both sexes, the most frequent lip print pattern for students with high, average and low academic performance was TypeIIA. The test of association between lip print pattern and A.P in the ULQ was not significant ( $X^2=12.433$ ,  $P=0.572$ ) In both sexes, the predominant lip pattern in the ULQ for students with high, average and low performances was TypeIIA Based on the data presented on Table 5; In males, the most frequent lip pattern for high A.P was TypeIIA and TypeIII(34.0%), average A.P Type III(26.5%), low A.P TypeIIB (22.7%).In females, the most frequent lip pattern for high A.P was TypeIII (26.1%),

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average A.P TypeIII (28.8%), low A.P TypeIIB and TypeIIA (23.4%). In the study population, the predominant lip patterns in the LRQ for males with high academic performance are TypeIIA and TypeIII, TypeIII for average performance and TypeIIB for low performance. For females, the predominant lip pattern for students with high and average academic performance is TypeIII and Type IIA and TypeIIB for low performances.

The test of association between lip print pattern and academic performance was significant ( $X^2=26.932$ ,  $P=0.020$ ) Based on data presented on Table 6; males, the most frequent lip pattern for high, average and low A.P was TypeIIA. In females, the most frequent lip print pattern for high, average and low A.P was TypeIIA. In the study population, the predominant lip pattern for both sexes in the LMQ for students with high, average and low academic performances is TypeIIA The test of association between lip print pattern and Academic Performance was not significant ( $X^2=9.818$ ,  $P=0.775$ ) Based on the data presented on Table 7; In males, the most frequent lip print pattern for high, average and low A.P was TypeIII. In females, the most frequent lip pattern for high A.P was TypeIII (29.4%), average A.P TypeIIB (25.7%) and low A.P was TypeIIA (29.0%). In the study population, in males, the predominant lip pattern in the LLQ for students with high and average academic performances is TypeIII and TypeIIB for low performances. For females, the predominant lip pattern for students with high, low and average academic performance are TypeIII, TypeIIA and TypeIIB respectively. The test of association between lip print pattern and academic performance was not significant ( $X^2=17.888$ ,  $P=0.212$ )

Researches based on the study on Cheiloscopy and academic performances has not been well patronized by researchers in Nigeria has the available data suggest. In the present study, Type IIA was the most common lip pattern in students with high, average and low academic performances in the Upper quadrants for both males and females. In the Lower Quadrants, the most common lip pattern was TypeIII and IIA in males with high and average performances, Type IIB for Lower performances. In females, the most common pattern for students with high performance was TypeIII, TypeIIA for Average and Low performances.

These results were different from the studies carried out by Umana *et al.*<sup>12</sup> where TypeIA (long vertical pattern) was the most common pattern for students with high, average and low academic performances. Also in this present study, Lower performing students has the highest frequency for TypeIIA (41.3%, 47.8%, 34.3%) lip pattern followed by average (37.0%, 44.6%, 33.6%) and higher (30.8%, 42.3%, 30.0%) performing students has the lowest frequency in the upper quadrants (R, M and L) In lower right quadrant LRQ, higher (29.2%) and average (27.8%) performing students has Type III the highest frequency of lip prints and Type IIB for lower (25.4%) performing students. For lower middle quadrant LMQ, lower performing students has the frequency for Type IIA (49.8%) lip pattern followed by high (49.0%) and average (48.9%) performing students and in the lower left quadrant LLQ high performing students has the highest frequency of TypeIII (28.1%) followed by lower (25.4%) and average (25.1%) performing students.

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## Conclusion

Based on the research carried out between lip print and academic performances, the result shows clearly that there was no relationship between them and were not statistically significant. It was also concluded that the most common lip pattern in the upper quadrants for both males and females is Type IIA while in the Lower Quadrants, the most common lip pattern was TypeIII and IIA in males with high and average performances, Type IIB for Lower performances. In females, the most common pattern for students with high performance was TypeIII, TypeIIA for Average and Low performances.

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