

COMPARATIVE STUDY ON CHILDREN'S IMMUNE POWER

(Consanguineous Married Parents VS Non-Consanguineous Married Parents)

Science Fair Project Report

Level : Middle Level

Category : Life Science

Submitted by

S. Abdul Haris

(Grade 8)



ARRAHMAAN
INTERNATIONAL SCHOOL

(Creating the community of Excellence)

COMPARATIVE STUDY ON CHILDREN'S IMMUNE POWER

(Consanguineous Married Parents VS Non-Consanguineous Married Parents)

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COMPARATIVE STUDY ON CHILDREN'S IMMUNE POWER

(Consanguineous Married Parents VS Non-Consanguineous Married Parents)

ABSTRACT

Immune power is playing an important role in our human body. This research is mainly aims to create an awareness based on this topic particularly to the rural people. I prepared a survey form which includes,

- Family information
- Food habits
- Personal health history
- Family health history

I collected information from various places in Melur and I separated the survey form as both consanguineous a non-consanguineous married parents. I analyzed the survey form of both consanguineous and non-consanguineous married parent's children with the help of Microsoft excel sheet. And I collected accurately 3 ml of blood from selected subjects with the help of a trained biochemist. And I tested the blood samples in a clinical laboratory for differential count of white blood corpuscles, albumin and globulin count. I analyzed both reports to find answer to my question whether the consanguineous parent's children are affected with genetic problem, physical disability and any health problems.

INTRODUCTION

Immune power is a natural defense system that provides resistance to our body and helps in fighting the diseases and infections. Immunity power acts as a shield and soldier, it protects and keeps away the diseases and illnesses from attacking our body. It is a state of having balanced multi-cellular organisms in body to protect against several diseases and infections. Immunity power is very important for each and every individual to stay healthy and fit. It not only protects our body from common cold and flu but also from serious health issues like Asthma disorders, allergies and some cancers. Immune power attacks foreign invaders attacking and causing harm to our health by using body fluids. Our immune system protects our body continuously from foreign substances or allergens like viruses, bacteria, parasites and fungus.

There are two types of immunity power like active immunity power and passive immunity power.

- **Active immunity power:** It is a state where our body's own cells produce antibodies to fight against the foreign substances and to protect our body.
- **Passive immunity power:** When our body fails to develop antibodies, readymade antibodies is injected into our body to protect against these invaders.

The immune power plays a major role in every human-being. The illness rate is depends upon the immune power. Nowadays the disease rate is highly increasing due to the different;

- food habits,
- personal health habits,
- environmental pollution,
- and heredity.

All these differences affect each & every human being's immune power. This immune power varies mainly with their family health conditions particularly the drastic changeover between the consanguineous and non-consanguineous parent's children.

STATEMENT OF THE PROBLEM

I am living in Mohamathiyapuram, Melur where most of the children are facing health problems often. I try to find out the reason in various aspects. First I studied the reasons for acquiring diseases. There are lots of reasons like food habits, environment pollution, heredity and so on. Whatever the reasons may be, if the immune system of the humans function properly then humans can fight against diseases.

I am very eager to find the factors that can affect the immune system. I studied that the relationship between the parents has some impact on the immune system. Suddenly I remembered most of my neighbours and my family preferred consanguineous marriage for various reasons like safety, asset and so on. So I decided to do a research to find whether the immune power of the children's of consanguineous parents differ from the immune power of the children's of non- consanguineous parents. Thereby I want to create awareness among the rural areas where the consanguineous marriages are very common.

HYPOTHESIS

Children of Non-consanguineous married parents have high immune power rather than consanguineous married parents.

DESIGN OF STUDY

INDEPENDENT VARIABLE:

- Human beings

DEPENDENT VARIABLE:

- White Blood corpuscles count
- Range of globulin
- Range of albumin
- Immune power

CONTROLLED VARIABLES:

- Method of testing
- Survey list

MATERIALS:

- Blood samples
- Survey form
- Children of different parents

PROCEDURE:

- Prepare a survey form which includes,
 - Family Information
 - Food Habits
 - Personal Health History
 - Family Health History
- Collect the information from various subjects in Melur.
- Separate the survey form as consanguineous married parents and non-consanguineous married parents' children.
- Analyze the survey form of both consanguineous and non-consanguineous married parents' children information with the help of Microsoft Excel sheet.
- Prepare a consolidated master table for the survey form and conclude the result for the higher immune power.
- Collect the blood samples (approximately 2 ml) from the selected subjects with the help of a trained biochemist.
- Test the blood samples in a clinical laboratory for differential count of White blood corpuscles, Albumin & Globulin count.

Analyze the blood report and the survey report for studying the impact of consanguineous marriage on immune power.

COLLECTION OF DATA

Survey Questionnaire

ARRAHMAAN INTERNATIONAL SCHOOL

Survey form-Comparative Study on Children's Immune power (Consanguineous married Parents Vs Non-Consanguineous married Parents)

General information

Name : _____ Phone Number: _____
Age : _____
Size of the family : _____
Physically disabled : Yes/ No ; If yes, _____
Blood Group : _____
Weight : _____
Height : _____
Pressure : _____ (Normal/ High/ Low)
Residential place : _____ (Rural/ Urban)

I. Family Information:

S. No	Questions	Answer	Description
1.	At what age your mother got married?		Early Marriage/ Late Marriage/ Normal
2.	At what age your father got married?		Early Marriage/ Late Marriage/ Normal
3.	Are your father and mother closely related?	Yes/ No	<i>Consanguineous marriage/ Non-Consanguineous marriage</i>
4.	If yes, how they are related?		
5.	Does your mother have any physical disabilities?	Yes/ No	If yes, _____
6.	Does your father have any physical disabilities?	Yes/ No	If yes, _____
7.	How many siblings do you have?		
8.	Among your siblings what is your position?		

II. Food Habits:

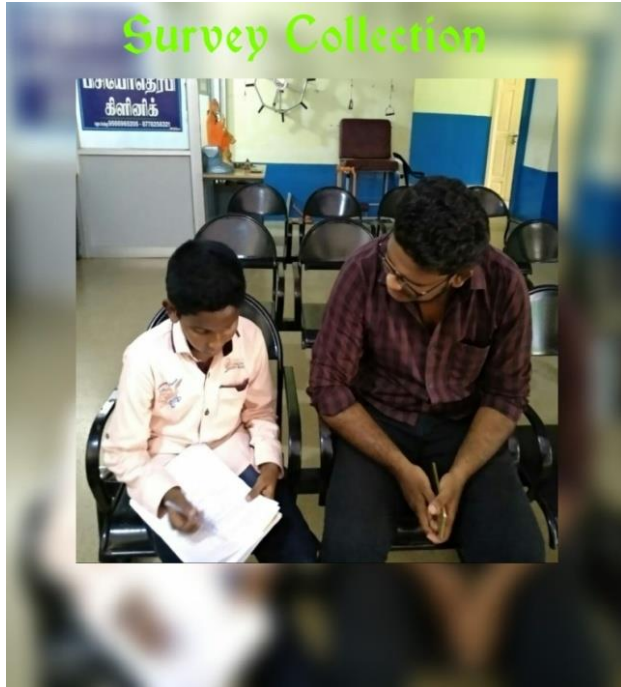
S. No	QUESTIONS	Answer	Description
1.	Do you skip your breakfast?	Often/Sometimes /Never	
2.	Are you taking your food on time?	Often/Sometimes /Never	
3.	Are you drinking enough water?	Yes/ No	If Yes, _____ If No, _____ (How much?)
4.	What is the source of drinking water?	Street tap water/ RO water	If street tap water, then _____ for Purification.

5.	Are you a Vegetarian or Non Vegetarian?	Vegetarian /Non Vegetarian	
6.	What is the most favourite food?		
7.	What is your favourite beverage?	Tea/ Coffee/ Others	
8.	How often do you take beverage per day?	Once/ Twice/ Thrice/ Many times/ Never	
9.	Are you taking healthy foods? (Example: Cereals, pulses, nuts, fruits, vegetables ...)	Yes/ No	If Yes, _____ _____ If No, _____ _____
10.	Do you prefer fresh foods than packed foods?	Yes/ No	
11.	Do you prefer steamed foods than fried foods?	Yes/ No	
12.	From where you are buying the fruits and vegetables?	Supermarkets / Local markets/ Kitchen Garden	
13.	Do you take the foods which are kept in refrigerator?	Often/Sometimes/ Never	
14.	How often do you take junk foods?	Daily/ Sometimes/ Never	
15.	How often do you take hotel foods?	Daily/ Sometimes/ Never	
16.	Do you allergic to any food?	Yes/ No	If Yes, _____

III. Personal Health History:

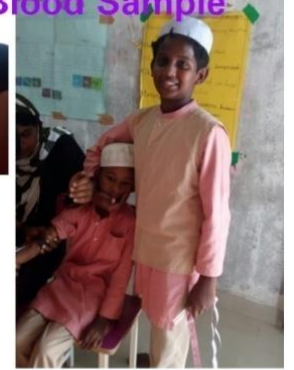
S.NO	QUESTIONS	Answer	Description
1.	Do you take proper vaccination from your childhood?	Yes/ No	
2.	How long do you sleep per day?		
3.	How often do you get sick in a month?	Often/Sometimes/ Never	
4.	For the past six months, what type of disease did you get often?		
5.	How long did the sickness take to cure?		
6.	Do you have any skin allergy?	Yes/ No	If Yes, _____
7.	Do you have any dust allergy?	Yes/ No	If Yes, _____
8.	Do you get tired easily?	Yes/ No	If Yes, _____
9.	Do you have any deficiency disease?	Yes/ No	If Yes, _____
10.	Are you a diabetic patient?	Yes/ No	If Yes, _____
11.	Are you taking any regular medicines for any diseases?	Yes/ No	If Yes, _____
12.	Does your wound take too long to heal?	Yes/ No	If Yes, _____
13.	Does your body adapt to every season?	Yes/ No	If No, _____
14.	Do you have the habit of smoking/ alcoholic intake/ tobacco intake?	Yes/ No	If Yes, _____

Photographs





selected subjects for blood test



Blood Collection



Measurement of Height



OBSERVATION IN CLINICAL LABORATORY



Qualitative Data

SUMMARY OF SURVEY REPORT

I. NON-Consanguineous Marriage Parent's Children

A. GENERAL INFORMATION:

S.NO	GENDER		AGE		PARENT MARRIAGE	
	M	F	BELOW 15	ABOVE 15	EARLY	NORMAL
1	25	30	50	05	27	28

B. FOOD HABITS:

SKIPPING BREAKFAST		SOURCES OF WATER		VEGETARIAN	NON-VEGETARIAN	JUNK FOOD EATING	
Yes	No	RO WATER	TAP WATER	12	43	Yes	No
28	27	41	14			9	46

C. PERSONAL HEALTH HISTORY:

Complete vaccination		Skin allergy		Dust allergy having members		Deficiency disease having members	
Yes	No	Yes	No	Yes	No	Yes	No
55	-	16	39	5	50	7	48

D. FAMILY HEALTH HISTORY:

Is you are a premature baby		Family genetic disease		Transfer of genetic disease –siblings		Abortion	
Yes	No	Yes	No	Yes	No	Yes	No
11	44	16	39	5	50	14	41

II. Consanguineous Marriage Parent's Children

A. GENERAL INFORMATION:

S.NO	GENDER		AGE		PARENT MARRIAGE	
	M	F	BELOW 15	ABOVE 15	EARLY	NORMAL
1	19	20	21	18	20	19

B. FOOD HABITS:

SKIPPING BREAKFAST		SOURCES OF WATER		VEGETARIAN	NON-VEGETARIAN	JUNK FOOD EATING	
Yes	No	RO WATER	TAP WATER	07	32	Yes	No
09	30	23	06			26	13

C. PERSONAL HEALTH HISTORY:

Complete vaccination		Skin allergy		Dust allergy having members		Deficiency disease having members	
Yes	No	Yes	No	Yes	No	Yes	No
39	-	15	24	05	34	05	34

D. FAMILY HEALTH HISTORY:

Is you are a premature baby		Family genetic disease		Transfer of genetic disease –siblings		Abortion	
Yes	No	Yes	No	Yes	No	Yes	No
05	34	23	16	03	36	04	35

Blood Report of the selected subjects

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ISO 9001 : 2015 Certified Laboratory

Pt.Name : SELVI.R.THAHIRA THASNEEM **AGE:BY/F**
Ref By : DR.K.SYED MUBARAK,MD.,(AM),
Patient ID : IS125529
 Collected Date : 08.10.18
 Received Date : 08.10.18
 Reported Date : 08.10.18


Final Test Report

Specimen	Test Name	Result	Units	Reference Range
EDTA.Blood	HAEMATOLOGY			
Cellcounter	Total WBC Count	9,700	cells/cumm	5000-10,000
	Differential Count			
	Neutrophils	50 %		50-65
	Lymphocytes	45 %		25-40
	Eosinophils	05 %		03-05
	BIO-CHEMISTRY			
SERUM	Total Protein	6.0	g/dl	6.0-8.3
SERUM	Albumin	3.7	g/dl	3.2-5.0
SERUM	Globulin	2.3	g/dl	2.5-3.5
	A/G RATIO :	1.6		

HIGHT : 117CM
WEIGHT : 17KG
B/P : 90/70mm/Hg

End of Report

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Pt.Name : MST.S.MOHAMMED ATHAF **AGE:BY/F**
Ref By : DR.K.SYED MUBARAK,MD.,(AM),
Patient ID : IS125533
 Collected Date : 08.10.18
 Received Date : 08.10.18
 Reported Date : 08.10.18

Final Test Report

Specimen	Test Name	Result	Units	Reference Range
EDTA.Blood	HAEMATOLOGY			
Cellcounter	Total WBC Count	11,400	cells/cumm	5000-10,000
	Differential Count			
	Neutrophils	52 %		50-65
	Lymphocytes	43 %		25-40
	Eosinophils	05 %		03-05
	BIO-CHEMISTRY			
SERUM	Total Protein	5.5	g/dl	6.0-8.3
SERUM	Albumin	3.9	g/dl	3.2-5.0
SERUM	Globulin	1.6	g/dl	2.5-3.5
	A/G RATIO :	2.4		

HIGHT : 122CM
WEIGHT : 19KG
B/P : 100/70mm/Hg

End of Report

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Pt.Name : SELVI.A.RASITHA **AGE:BY/F**
Ref By : DR.K.SYED MUBARAK,MD.,(AM),
Patient ID : IS125523
 Collected Date : 08.10.18
 Received Date : 08.10.18
 Reported Date : 08.10.18


Final Test Report

Specimen	Test Name	Result	Units	Reference Range
EDTA.Blood	HAEMATOLOGY			
Cellcounter	Total WBC Count	10,100	cells/cumm	5000-10,000
	Differential Count			
	Neutrophils	61 %		50-65
	Lymphocytes	31 %		25-40
	Eosinophils	06 %		03-05
	BIO-CHEMISTRY			
SERUM	Total Protein	5.6	g/dl	6.0-8.3
SERUM	Albumin	3.6	g/dl	3.2-5.0
SERUM	Globulin	2.0	g/dl	2.5-3.5
	A/G RATIO :	1.8		

HIGHT : 127CM
WEIGHT : 24KG
B/P : 120/60mm/Hg

End of Report

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Pt.Name : MST.NAHAMED ADHIL **AGE:BY/M**
Ref By : DR.K.SYED MUBARAK,MD.,(AM),
Patient ID : IS125526
 Collected Date : 08.10.18
 Received Date : 08.10.18
 Reported Date : 08.10.18

Final Test Report

Specimen	Test Name	Result	Units	Reference Range
EDTA.Blood	HAEMATOLOGY			
Cellcounter	Total WBC Count	10,200	cells/cumm	5000-10,000
	Differential Count			
	Neutrophils	44 %		50-65
	Lymphocytes	51 %		25-40
	Eosinophils	05 %		03-05
	BIO-CHEMISTRY			
SERUM	Total Protein	5.5	g/dl	6.0-8.3
SERUM	Albumin	3.9	g/dl	3.2-5.0
SERUM	Globulin	1.6	g/dl	2.5-3.5
	A/G RATIO :	2.4		

HIGHT : 118CM
WEIGHT : 18KG
B/P : 110/70mm/Hg

End of Report



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Patient ID: ISL25524
Collected Date: 08.10.18
Received Date: 08.10.18
Reported Date: 08.10.18

Pl.Name : MST.M.MUHAMMED IBRAHIM AGE:BY/M
Ref By : DR.K.SYED MUBARAK,MD.,(AM),
Final Test Report

Specimen	Test Name	Result	Units	Reference Range
EDTA.Blood	HAEMATOLOGY			
Cellcounter	Total WBC Count	11,300	cells/cumm	5000-20,000
	Differential Count			
	Neutrophils	57 %		50-65
	Lymphocytes	38 %		25-40
	Eosinophils	05 %		03-05
	BIO-CHEMISTRY			
SERUM	Total Protein	5.2	g/dl	6.0-8.3
SERUM	Albumin	3.6	g/dl	3.2-5.0
	Globulin	1.6	g/dl	2.5-3.5
	A/G RATIO :	2.2		
	HIGHT :	127CM		
	WEIGHT :	21KG		
	B/P :	80/60mm/Hg		

End of Report

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Patient ID: ISL25525
Collected Date: 08.10.18
Received Date: 08.10.18
Reported Date: 08.10.18

Pl.Name : SELVI.R.SYED ALIFATHIMA SOWMI AGE:BY/F
Ref By : DR.K.SYED MUBARAK,MD.,(AM),
Final Test Report

Specimen	Test Name	Result	Units	Reference Range
EDTA.Blood	HAEMATOLOGY			
Cellcounter	Total WBC Count	11,700	cells/cumm	5000-10,000
	Differential Count			
	Neutrophils	54 %		50-65
	Lymphocytes	40 %		25-40
	Eosinophils	06 %		03-05
	BIO-CHEMISTRY			
SERUM	Total Protein	5.5	g/dl	6.0-8.3
SERUM	Albumin	3.4	g/dl	3.2-5.0
	Globulin	2.1	g/dl	2.5-3.5
	A/G RATIO :	1.6		
	HIGHT :	119CM		
	WEIGHT :	20KG		
	B/P :	100/60mm/Hg		

End of Report

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Patient ID: ISL25521
Collected Date: 08.10.18
Received Date: 08.10.18
Reported Date: 08.10.18

Pl.Name : SELVI.P.ALSHIFA AGE:BY/F
Ref By : DR.K.SYED MUBARAK,MD.,(AM),
Final Test Report

Specimen	Test Name	Result	Units	Reference Range
EDTA.Blood	HAEMATOLOGY			
Cellcounter	Total WBC Count	10,200	cells/cumm	5000-10,000
	Differential Count			
	Neutrophils	58 %		50-65
	Lymphocytes	36 %		25-40
	Eosinophils	06 %		03-05
	BIO-CHEMISTRY			
SERUM	Total Protein	5.6	g/dl	6.0-8.3
SERUM	Albumin	3.7	g/dl	3.2-5.0
	Globulin	1.9	g/dl	2.5-3.5
	A/G RATIO :	1.9		
	HIGHT :	122 CM		
	WEIGHT :	21 KG		
	B/P :	100/70mm/Hg		

End of Report

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Patient ID: ISL25518
Collected Date: 08.10.18
Received Date: 08.10.18
Reported Date: 08.10.18

Pl.Name : SELVI.R.THANSEEN NISHA AGE:BY/F
Ref By : DR.K.SYED MUBARAK,MD.,(AM),
Final Test Report

Specimen	Test Name	Result	Units	Reference Range
EDTA.Blood	HAEMATOLOGY			
Cellcounter	Total WBC Count	6,000	cells/cumm	5000-10,000
	Differential Count			
	Neutrophils	43 %		50-65
	Lymphocytes	52 %		25-40
	Eosinophils	05 %		03-05
	BIO-CHEMISTRY			
SERUM	Total Protein	5.5	g/dl	6.0-8.3
SERUM	Albumin	3.5	g/dl	3.2-5.0
	Globulin			
	A/G RATIO :			
	HIGHT :	126 CM		
	WEIGHT :	25KG		
	B/P :	90/60mm/Hg		

End of Report

SNAPCIAL

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Pt Name: :SELVI.R.AIMAN HUDHA AGE:8Y/F
Patient ID: IS125515
Collected Date: 08.10.18
Received Date: 08.10.18
Ref By: :DR.K.SYED MUBARAK,MD.,(AM),
Reported Date: 08.10.18

Final Test Report

Specimen	Test Name	Result	Units	Reference Range
EDTA,Blood	HAEMATOLOGY			
Cellcounter	Total WBC Count	14,300	cells/cumm	5000-10,000
	Differential Count			
	Neutrophils	69 %		50-65
	Lymphocytes	26 %		25-40
	Eosinophils	05 %		03-05
	BIO-CHEMISTRY			
SERUM	Total Protein	6.2	g/dl	6.0-8.3
SERUM	Albumin	3.9	g/dl	3.2-5.0
	Globulin	2.3	g/dl	2.5-3.5
	A/G RATIO :	1.7		
	HIGHT :	113 CM		
	WEIGHT :	18 KG		
	B/P :	90/70Mm/Hg		

End of Report

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Pt Name: :SELVI.A.JUVARIYA AGE:8Y/F
Patient ID: IS125517
Collected Date: 08.10.18
Received Date: 08.10.18
Ref By: :DR.K.SYED MUBARAK,MD.,(AM),
Reported Date: 08.10.18

Final Test Report

Specimen	Test Name	Result	Units	Reference Range
EDTA,Blood	HAEMATOLOGY			
Cellcounter	Total WBC Count	10,400	cells/cumm	5000-10,000
	Differential Count			
	Neutrophils	53 %		50-65
	Lymphocytes	43 %		25-40
	Eosinophils	04 %		03-05
	BIO-CHEMISTRY			
SERUM	Total Protein	5.9	g/dl	6.0-8.3
SERUM	Albumin	3.6	g/dl	3.2-5.0
	Globulin	2.3	g/dl	2.5-3.5
	A/G RATIO :	1.6		
	HIGHT :	121 CM		
	WEIGHT :	21 KG		
	B/P :	100/80Mm/Hg		

End of Report

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Pt Name: :SELVI.N.SAFREEN AGE:8Y/F
Patient ID: IS125532
Collected Date: 08.10.18
Received Date: 08.10.18
Ref By: :DR.K.SYED MUBARAK,MD.,(AM),
Reported Date: 08.10.18

Final Test Report

Specimen	Test Name	Result	Units	Reference Range
EDTA,Blood	HAEMATOLOGY			
Cellcounter	Total WBC Count	6,100	cells/cumm	5000-10,000
	Differential Count			
	Neutrophils	50 %		50-65
	Lymphocytes	35 %		25-40
	Eosinophils	07 %		03-05
	BIO-CHEMISTRY			
SERUM	Total Protein	5.4	g/dl	6.0-8.3
SERUM	Albumin	3.6	g/dl	3.2-5.0
	Globulin	1.8	g/dl	2.5-3.5
	A/G RATIO :	2.0		
	HIGHT :	117CM		
	WEIGHT :	17KG		
	B/P :	10/60Mm/Hg		

End of Report

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Pt Name: :SELVI.A.NATHIRA AGE:8Y/F
Patient ID: IS125538
Collected Date: 08.10.18
Received Date: 08.10.18
Ref By: :DR.K.SYED MUBARAK,MD.,(AM),
Reported Date: 08.10.18

Final Test Report

Specimen	Test Name	Result	Units	Reference Range
EDTA,Blood	HAEMATOLOGY			
Cellcounter	Total WBC Count	9,400	cells/cumm	5000-10,000
	Differential Count			
	Neutrophils	42 %		50-65
	Lymphocytes	53 %		25-40
	Eosinophils	05 %		03-05
	BIO-CHEMISTRY			
SERUM	Total Protein	5.5	g/dl	6.0-8.3
SERUM	Albumin	3.9	g/dl	3.2-5.0
	Globulin	1.6	g/dl	2.5-3.5
	A/G RATIO :	2.4		
	HIGHT :	126CM		
	WEIGHT :	21KG		
	B/P :	90/70Mm/Hg		

End of Report



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Certificate No.: ISO/15189/152529

ISO 9001 : 2015 Certified Laboratory

Pt Name : **MS.T.A.MOHAMMED AADHIL** AGE:BY/M
Collected Date : **08.10.18**
Reported Date : **08.10.18**

Ref By : **DR.K.SYED MUBARAK,MD.,(AM),**
Reported Date : **08.10.18**

Patient ID : **IS125519**
Collected Date : **08.10.18**
Reported Date : **08.10.18**

Final Test Report

Specimen	Test Name	Result	Units	Reference Range
EDTA.Blood	HAEMATOLOGY			
Cellcounter	Total WBC Count	7,800	cells/cumm	5000-10,000
	Differential Count			
	Neutrophils	47 %		50-65
	Lymphocytes	48 %		25-40
	Eosinophils	0.5 %		0.3-0.5
	BIO-CHEMISTRY			
SERUM	Total Protein	5.4	g/dl	6.0-8.3
SERUM	Albumin	3.8	g/dl	3.2-5.0
	Globulin	1.6	g/dl	2.5-3.5
	A/G RATIO :	2.4		
	HEIGHT :	123 CM		
	WEIGHT :	18 KG		
	B/P :	80/40mm/Hg		

End of Report

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BMQR
ISO 9001 CERTIFIED
Certificate No.: ISO/15189/152522

ISO 9001 : 2015 Certified Laboratory

Pt Name : **MS.T.A.MOHAMED ASKAR** AGE:BY/M
Collected Date : **08.10.18**
Reported Date : **08.10.18**

Ref By : **DR.K.SYED MUBARAK,MD.,(AM),**
Reported Date : **08.10.18**

Patient ID : **IS125522**
Collected Date : **08.10.18**
Reported Date : **08.10.18**

Final Test Report

Specimen	Test Name	Result	Units	Reference Range
EDTA.Blood	HAEMATOLOGY			
Cellcounter	Total WBC Count	10,100	cells/cumm	5000-10,000
	Differential Count			
	Neutrophils	55 %		50-65
	Lymphocytes	39 %		25-40
	Eosinophils	0.6 %		0.3-0.5
	BIO-CHEMISTRY			
SERUM	Total Protein	5.7	g/dl	6.0-8.3
SERUM	Albumin	3.8	g/dl	3.2-5.0
	Globulin	1.9	g/dl	2.5-3.5
	A/G RATIO :	2.0		
	HEIGHT :	121 CM		
	WEIGHT :	24 KG		
	B/P :	100/80mm/Hg		

End of Report

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Certificate No.: ISO/15189/152530

ISO 9001 : 2015 Certified Laboratory

Pt Name : **SELV.S.HUMAIRA** AGE:BY/Y
Collected Date : **08.10.18**
Reported Date : **08.10.18**

Ref By : **DR.K.SYED MUBARAK,MD.,(AM),**
Reported Date : **08.10.18**

Patient ID : **IS125530**
Collected Date : **08.10.18**
Reported Date : **08.10.18**

Final Test Report

Specimen	Test Name	Result	Units	Reference Range
EDTA.Blood	HAEMATOLOGY			
Cellcounter	Total WBC Count	9,800	cells/cumm	5000-10,000
	Differential Count			
	Neutrophils	55 %		50-65
	Lymphocytes	40 %		25-40
	Eosinophils	0.5 %		0.3-0.5
	BIO-CHEMISTRY			
SERUM	Total Protein	5.9	g/dl	6.0-8.3
SERUM	Albumin	3.6	g/dl	3.2-5.0
	Globulin	2.3	g/dl	2.5-3.5
	A/G RATIO :	1.6		
	HEIGHT :	121CM		
	WEIGHT :	24KG		
	B/P :	90/60mm/Hg		

End of Report

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Certificate No.: ISO/15189/152534

ISO 9001 : 2015 Certified Laboratory

Pt Name : **MS.T.B.MUHAMMAD FAHIM** AGE:BY/M
Collected Date : **08.10.18**
Reported Date : **08.10.18**

Ref By : **DR.K.SYED MUBARAK,MD.,(AM),**
Reported Date : **08.10.18**

Patient ID : **IS125534**
Collected Date : **08.10.18**
Reported Date : **08.10.18**

Final Test Report

Specimen	Test Name	Result	Units	Reference Range
EDTA.Blood	HAEMATOLOGY			
Cellcounter	Total WBC Count	10,200	cells/cumm	5000-10,000
	Differential Count			
	Neutrophils	46 %		50-65
	Lymphocytes	50 %		25-40
	Eosinophils	0.4 %		0.3-0.5
	BIO-CHEMISTRY			
SERUM	Total Protein	6.1	g/dl	6.0-8.3
SERUM	Albumin	4.0	g/dl	3.2-5.0
	Globulin			
	A/G RATIO :			
	HEIGHT :	120 CM		
	WEIGHT :	24 KG		
	B/P :	70/60mm/Hg		

End of Report



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Certificate No.: ISO9115150067

ISO 9001 : 2015 Certified Laboratory

Pt Name : SELVI.K.L.AAYSHA SULTHANA AGE:BY/F
Ref By : DR.K.SYED MUBARAK,MD.,(AM),
Patient ID : IS125527
Collected Date : 08.10.18
Received Date : 08.10.18
Reported Date : 08.10.18

Final Test Report

Specimen	Test Name	Result	Units	Reference Range
EDTA.Blood	HAEMATOLOGY			
Cellcounter	Total WBC Count	7,700	cells/cumm	5000-10,000
	Differential Count			
	Neutrophils	56 %		50-65
	Lymphocytes	39 %		25-40
	Eosinophils	05 %		0.3-0.5
	BIO-CHEMISTRY			
SERUM	Total Protein	5.7	g/dl	6.0-8.3
SERUM	Albumin	3.7	g/dl	3.5-5.0
	Globulin	2.0	g/dl	2.5-3.5
	A/G RATIO :	1.9		

HIGHT : 117CM
WEIGHT : 16KG
B/P : 80/60mm/Hg

End of Report

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Certificate No.: ISO9115150067

ISO 9001 : 2015 Certified Laboratory

Pt Name : MST.C.MOHAMED ANAS AGE:BY/F
Ref By : DR.K.SYED MUBARAK,MD.,(AM),
Patient ID : IS125531
Collected Date : 08.10.18
Received Date : 08.10.18
Reported Date : 08.10.18

Final Test Report

Specimen	Test Name	Result	Units	Reference Range
EDTA.Blood	HAEMATOLOGY			
Cellcounter	Total WBC Count	11,600	cells/cumm	5000-10,000
	Differential Count			
	Neutrophils	67 %		50-65
	Lymphocytes	28 %		25-40
	Eosinophils	05 %		0.3-0.5
	BIO-CHEMISTRY			
SERUM	Total Protein	5.6	g/dl	6.0-8.3
SERUM	Albumin	3.8	g/dl	3.5-5.0
	Globulin	1.8	g/dl	2.5-3.5
	A/G RATIO :	2.1		

HIGHT : 126CM
WEIGHT : 27KG
B/P : 110/60mm/Hg

End of Report

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Certificate No.: ISO9115150067

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Pt Name : MST.R.SHAHEEN ALI AGE:BY/M
Ref By : DR.K.SYED MUBARAK,MD.,(AM),
Patient ID : IS125520
Collected Date : 08.10.18
Received Date : 08.10.18
Reported Date : 08.10.18

Final Test Report

Specimen	Test Name	Result	Units	Reference Range
EDTA.Blood	HAEMATOLOGY			
Cellcounter	Total WBC Count	8,000	cells/cumm	5000-10,000
	Differential Count			
	Neutrophils	50 %		50-65
	Lymphocytes	44 %		25-40
	Eosinophils	06 %		0.3-0.5
	BIO-CHEMISTRY			
SERUM	Total Protein	6.0	g/dl	6.0-8.3
SERUM	Albumin	3.9	g/dl	3.5-5.0
	Globulin	2.1	g/dl	2.5-3.5
	A/G RATIO :	1.9		

HIGHT : 123 CM
WEIGHT : 20 KG
B/P : 110/70mm/Hg

End of Report

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Certificate No.: ISO9115150067

ISO 9001 : 2015 Certified Laboratory

Pt Name : MST.S.MOHAMMED ARSHATH AGE:BY/M
Ref By : DR.K.SYED MUBARAK,MD.,(AM),
Patient ID : IS125516
Collected Date : 08.10.18
Received Date : 08.10.18
Reported Date : 08.10.18

Final Test Report

Specimen	Test Name	Result	Units	Reference Range
EDTA.Blood	HAEMATOLOGY			
Cellcounter	Total WBC Count	7,700	cells/cumm	5000-10,000
	Differential Count			
	Neutrophils	66 %		50-65
	Lymphocytes	29 %		25-40
	Eosinophils	05 %		0.3-0.5
	BIO-CHEMISTRY			
SERUM	Total Protein	5.3	g/dl	6.0-8.3
SERUM	Albumin	3.7	g/dl	3.5-5.0
	Globulin	1.6	g/dl	2.5-3.5
	A/G RATIO :			

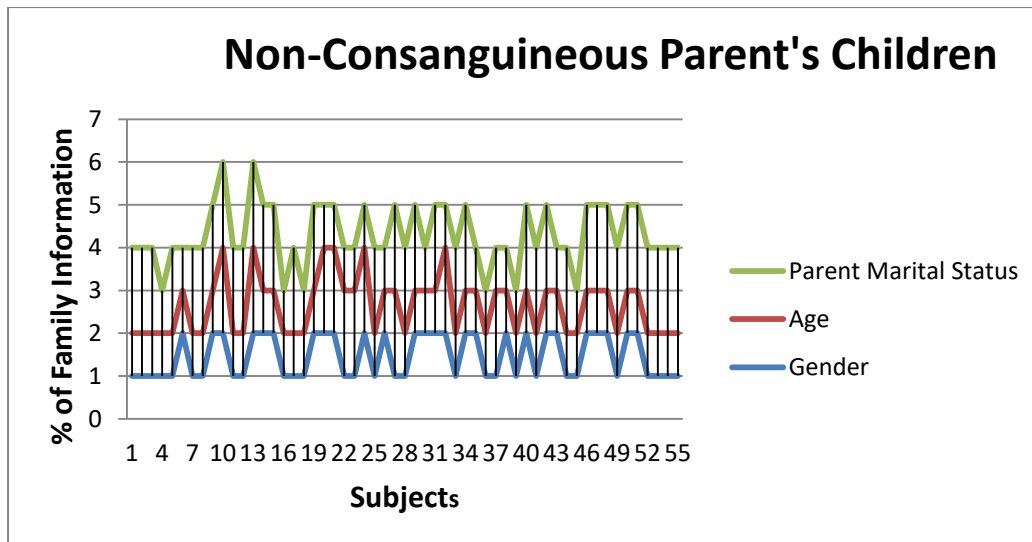
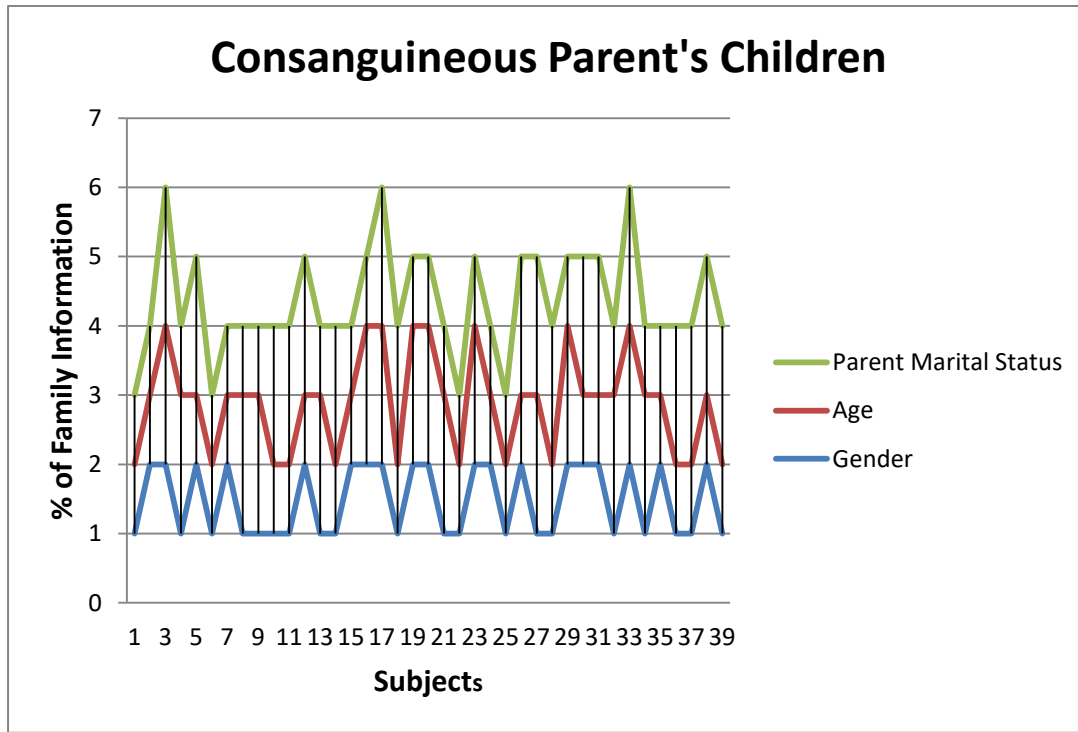
HIGHT : 135 CM
WEIGHT : 30 KG
B/P : 100/70mm/Hg

End of Report

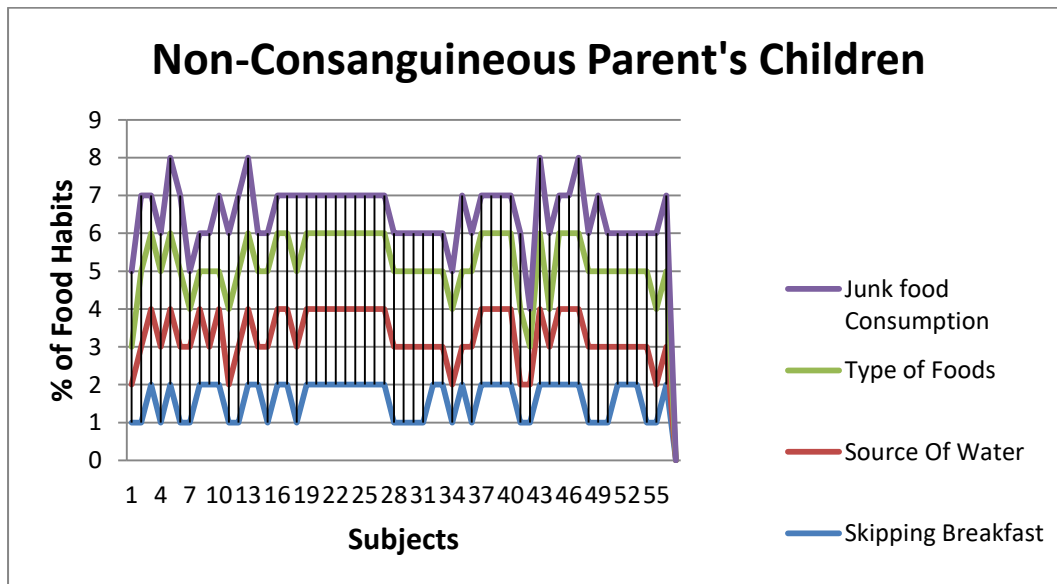
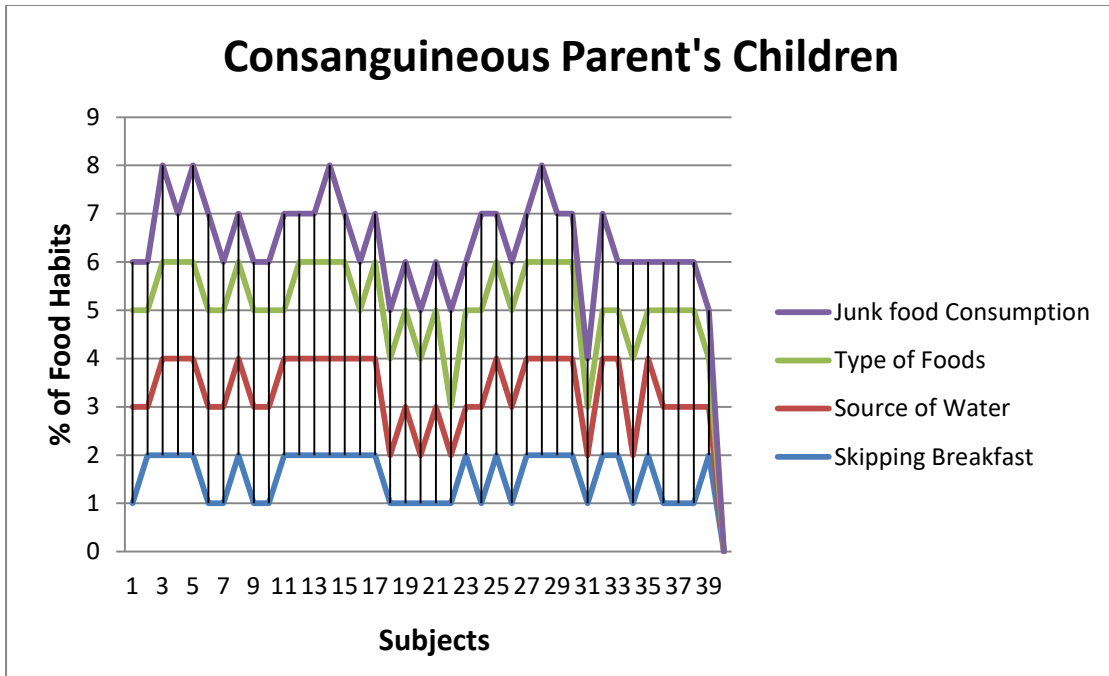


GRAPHICAL REPRESENTATION

A. Graphical representation of the Survey report

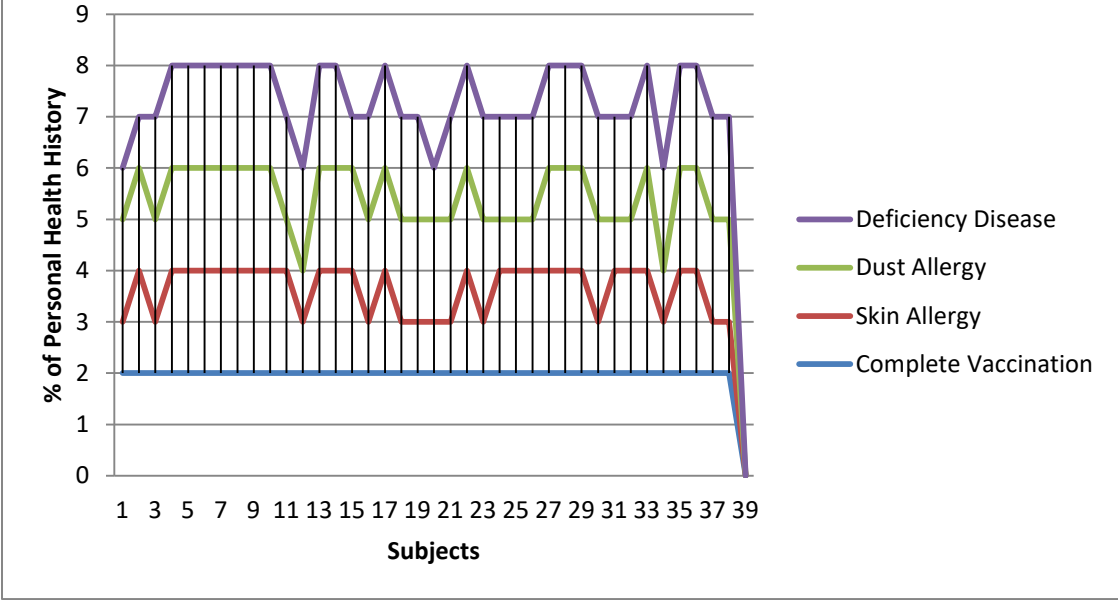


The survey based on the family information has various different values. This graph clearly shows the % of the non-consanguineous is lesser than the consanguineous parent's children.

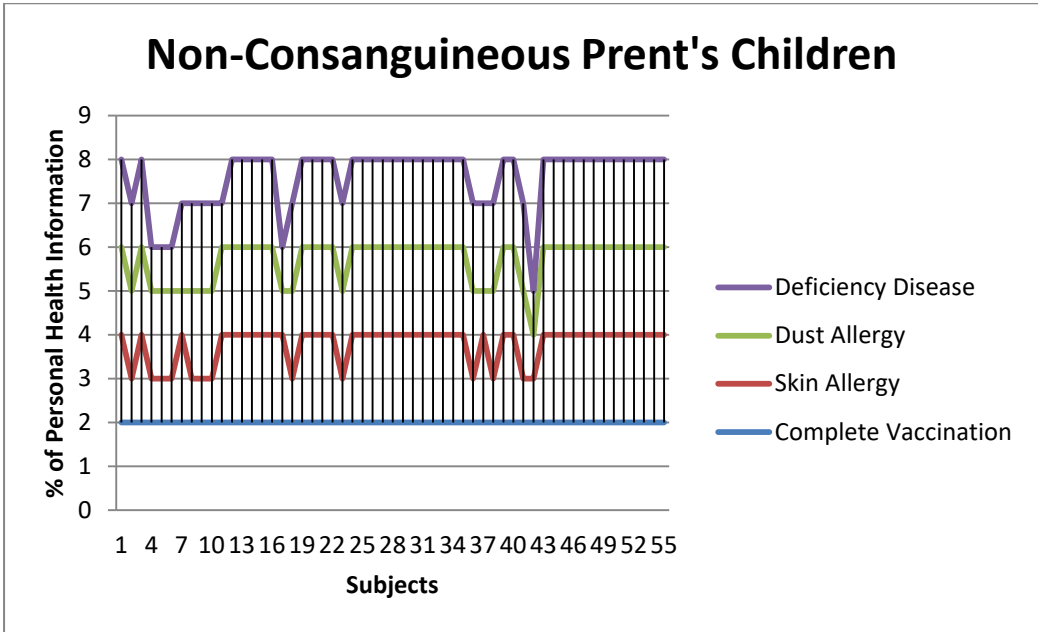


The survey based on the family information has various different values. This graph clearly shows the % of the non-consanguineous is lesser than the consanguineous parent's children.

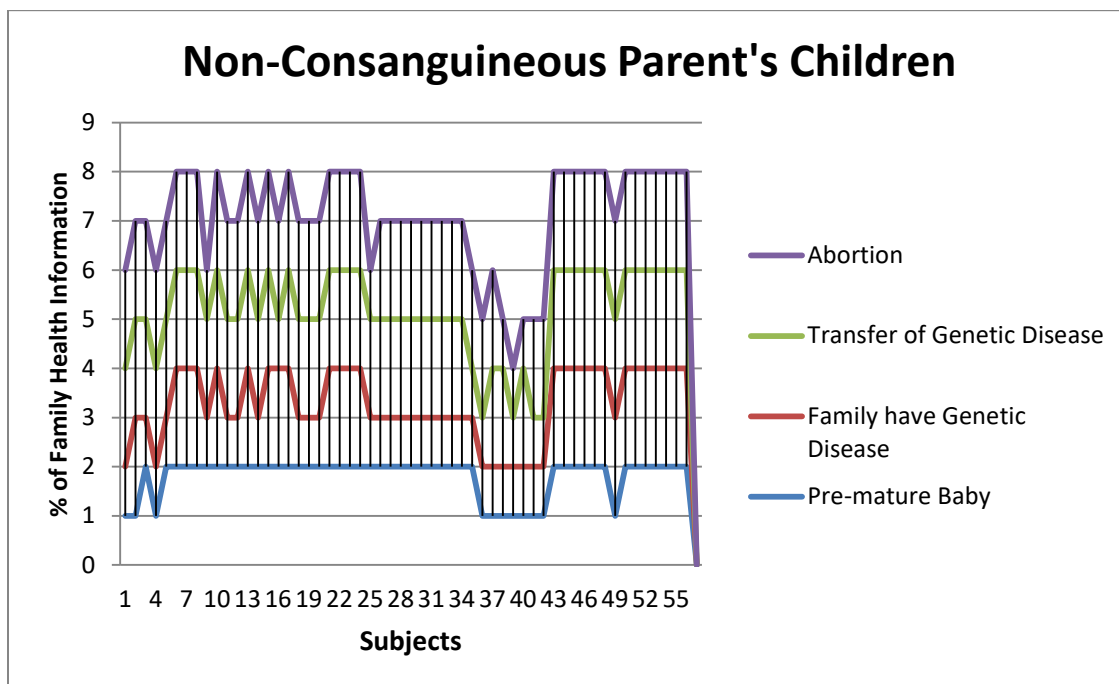
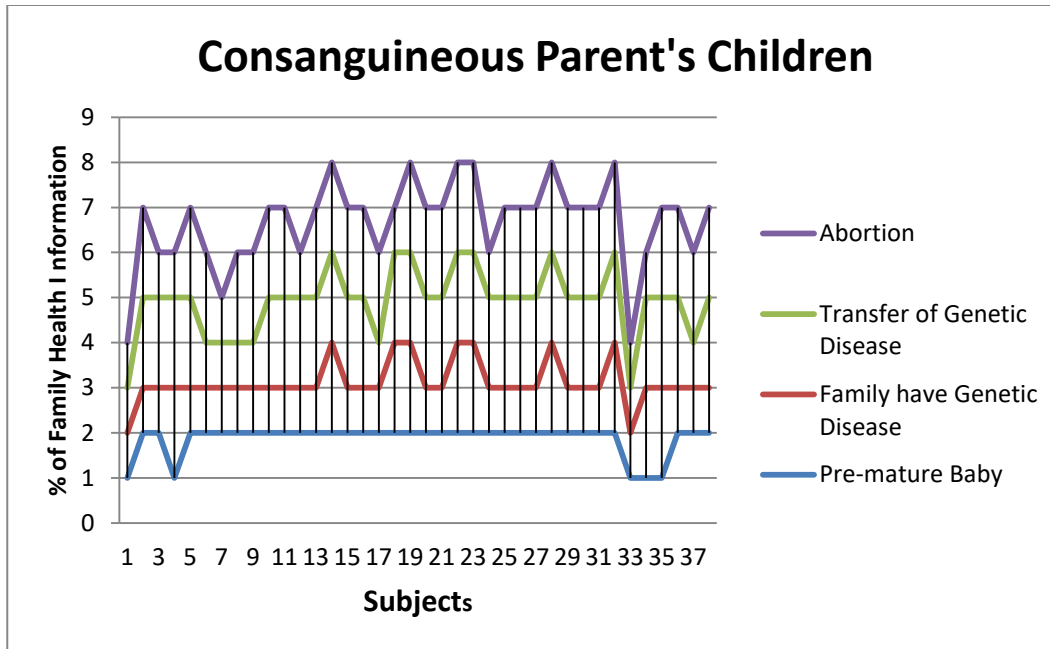
Consanguineous Prent's Children



Non-Consanguineous Prent's Children



The survey based on the family information has various different values. This graph clearly shows the % of the non-consanguineous is lesser than the consanguineous parent's children.



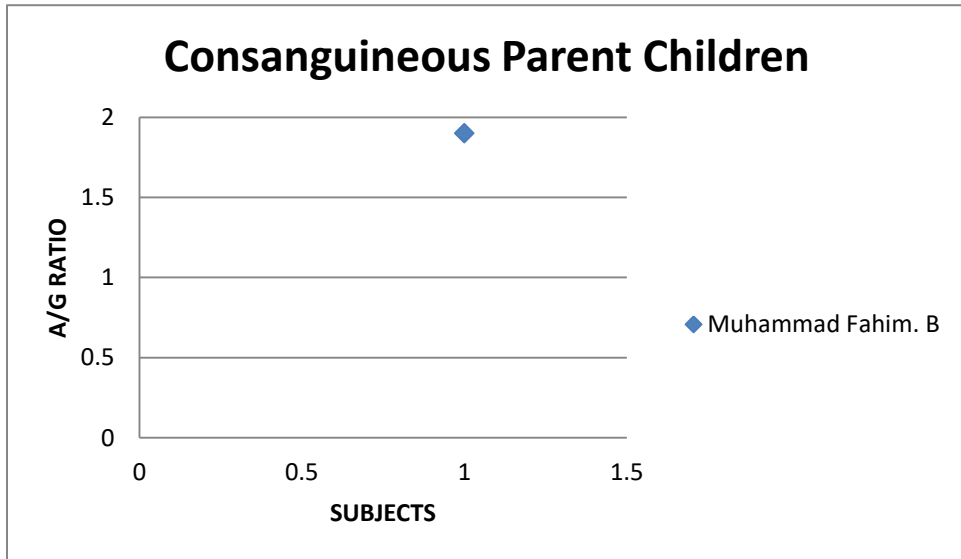
The survey based on the family information has various different values. This graph clearly shows the % of the non-consanguineous is lesser than the consanguineous parent's children.

This graphical representation of both consanguineous and non-consanguineous parent's children information does not have much differentiation based on these 4 aspects. But slightly the % is higher in the consanguineous parent's children in their personal and Family health information data's.

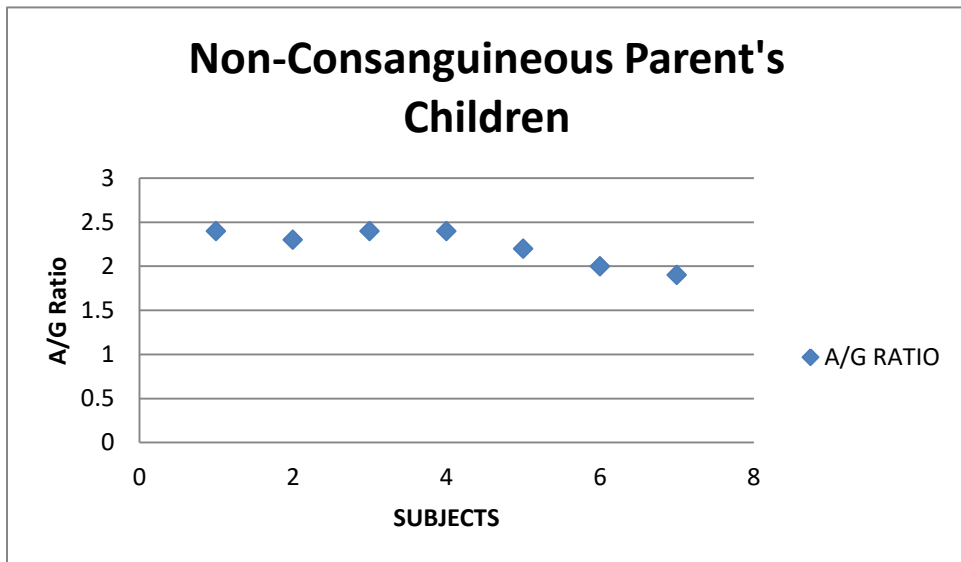
B. Comparison of blood report-Male

a. AG Ratio

Consanguineous

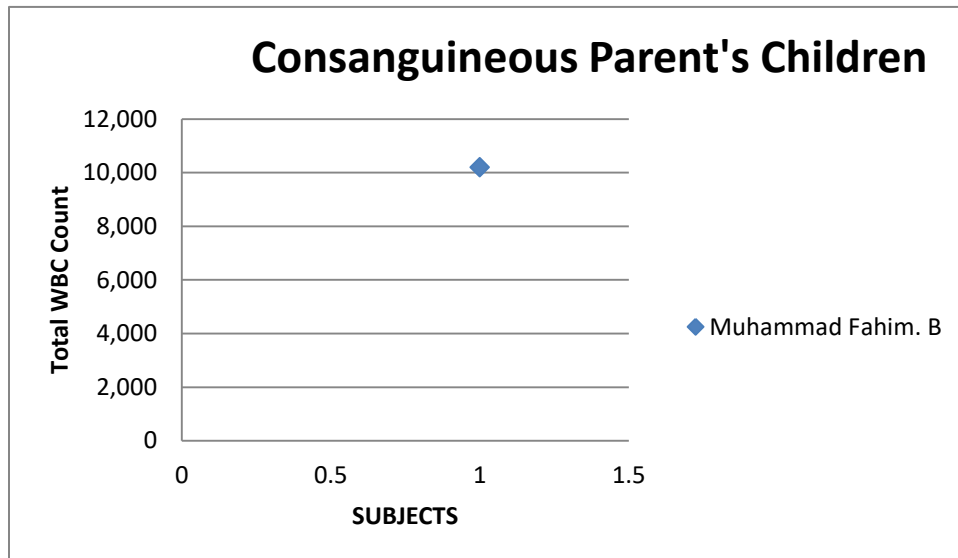


Non-Consanguineous

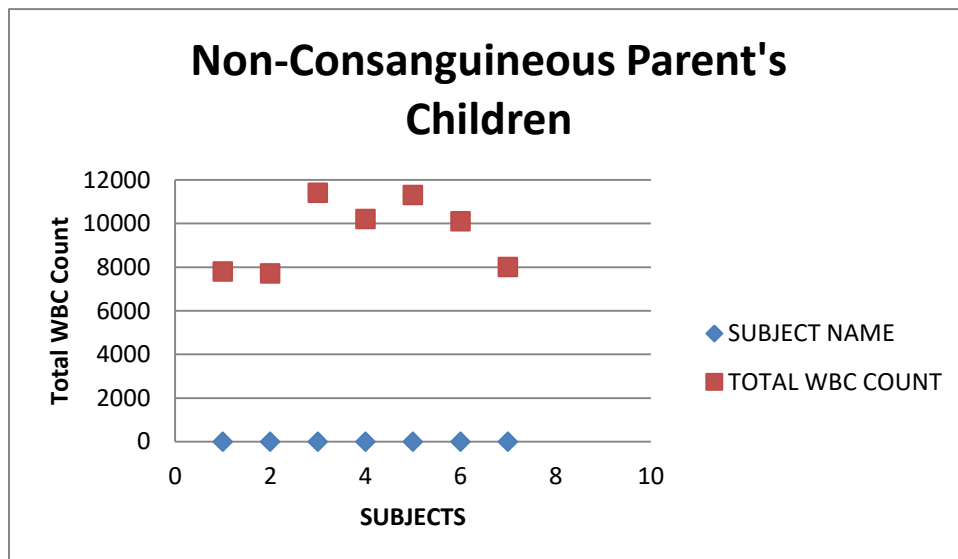


b. WBC Count

Consanguineous



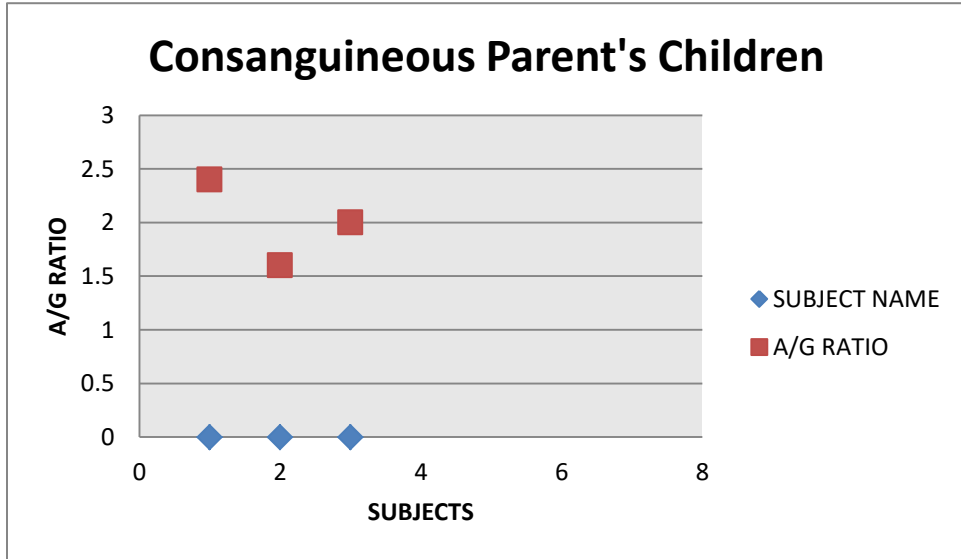
Non-Consanguineous



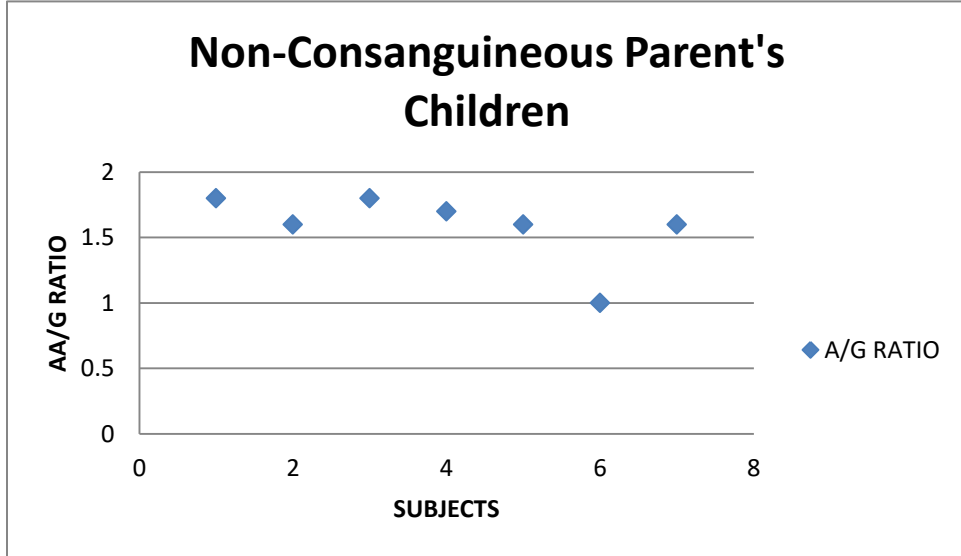
C. Comparison of blood report-Female

a. AG Ratio

Consanguineous

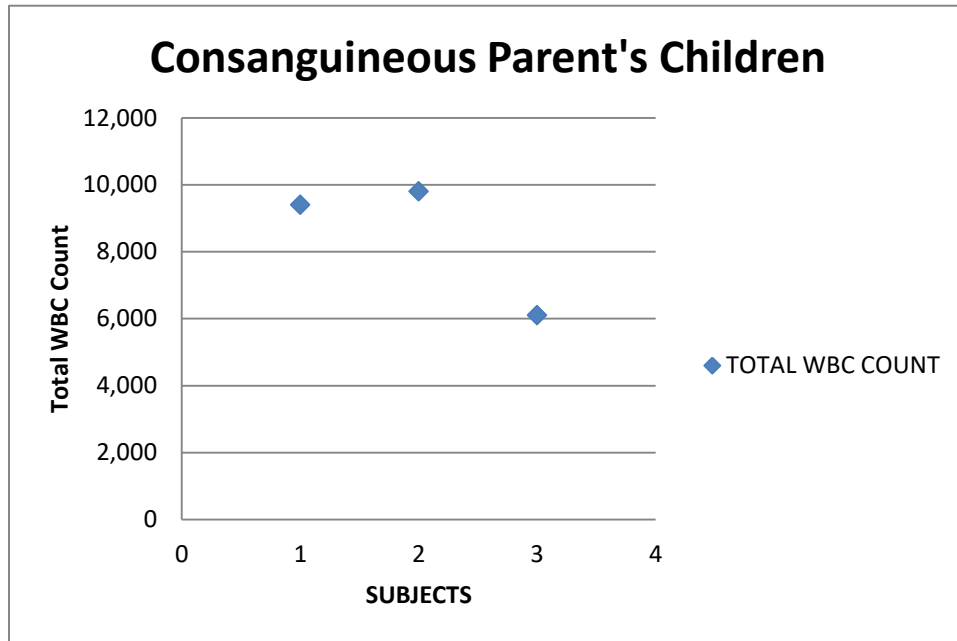


Non-Consanguineous

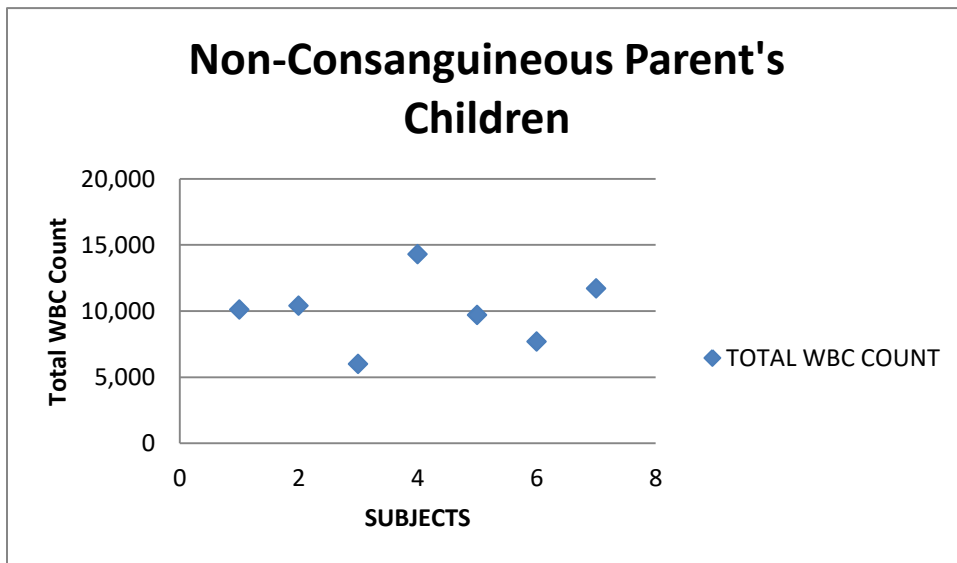


b. WBC Count

Consanguineous



Non-Consanguineous



RESULTS AND DISCUSSION

A. Based on my Survey Report

- Abortion rate is high among the consanguineous married parents. The abortion is due to two major reasons:
 1. Natural Abortion
 2. Doctor suggested aborting due to physical disability of the children.
- Rate of abortion is less in the non-consanguineous married parents.
- Consanguineous married parent children have different health condition among their first and second children.
- The 1st children have high immune power than the 2nd children in both consanguineous and non-consanguineous parents.
- The consanguineous parent's children are affected by the genetic problems, physical disability and mental problems highly than the non-consanguineous parent children.
- Non-consanguineous parent children also have the minor health problems due to the different food habits.
- Consanguineous parent children affect with lot of health problem particularly physical disability rate is high.

B. Selected Blood Sample

- After survey, I got various information from the 94 subjects. From that survey, I found the similarity age group of 8 years children. Using this similarity I just moved on to the blood test.
- I collected blood samples from 19 subjects from the same age group. Among those children only 4 are consanguineous children and others are non-consanguineous children.
- With this help of blood report I conclude that both types of children have closer count.

C. Based on Blood Test Report

- This blood report gave an accurate count for the Albumin & Globulin ratio, Total White Blood Corpuscle count. By using this count I can able to clearly visualize the level of both consanguineous and non-consanguineous parent's children differences.

- The rate of all these count does not have much differentiation, so I conclude from this graph, both have nearly similar amount of WBC, but the very slight differentiation occurs in the consanguineous parent's children.
- The range of A/G ratio and White Blood Corpuscles (WBC) count does not have much differentiation.
- The level of count will differs between consanguineous and non-consanguineous parent's children.
- The slight change over of their level of white blood corpuscles count, albumin, and globulin count clearly indicates the lesser negative aspects of consanguineous relationship.
- This indicates the level of immune power is somewhat same to both the non-consanguineous parent children's and the consanguineous parent children's.

D. Based on Blood Test Report

- Based on the survey list and blood test I can conclude my research that both types of children have slight differentiation in their health issue and their family health record.
- But most of the health issue like physical disability, skin allergies, heredity problems, high abortion rate, psychological problems are seen common among the consanguineous parent's children than the non-consanguineous parent's children.
- Serious fact about the consanguineous is those children drown to disability and the abortion rate is also high in the consanguineous parent's children due to the improper growth of the womb during their pregnancy time. This leads the way to most of the parent's are aborted their children because of doctor suggestion. Not only this happens in the consanguineous parent's alone; it also happens in the non-consanguineous parents. But the rate of abortion, diseases and the disability is very low in the non-consanguineous.

Finally I conclude that, both types of children have the same health problem due to these aspects;

- Food Habits
- Personal Health Information and
- Heredity

CONCLUSION

- My hypothesis, “*Children of Non-consanguineous married parents have high immune power rather than consanguineous married parents.*” has been proved false.
- I learnt the functions of clinical laboratory in testing the blood samples for my various subjects. That is very interesting learning experience for me.

From this I can't able to conform clearly that the immune power is low in the consanguineous parent's children. But one thing clearly shows the consanguineous marriage is very danger to the future children due to the easy transmission of diseases & heredity problems.

Difficulties faced:

- Selecting constant age subject was very difficult.
- I felt very difficult to convince the parents to give permission to take blood samples.
- Felt somewhat difficult in analyzing and preparing the excel sheet for the collected information from the survey report

APPLICATION

- The immune system, which is made up of special cells, proteins, tissues, and organs, defends people against germs and microorganisms every day. In most cases, the immune system does a great job of keeping people healthy and preventing infections. But sometimes problems with the immune system can lead to illness and infection.
- Humans have three types of immunity — innate, adaptive, and passive:
- Problems of the Immune System
 - Disorders of the immune system fall into four main categories:
 - immunodeficiency disorders (primary or acquired)
 - autoimmune disorders (in which the body's own immune system attacks its own tissue as foreign matter)
 - allergic disorders (in which the immune system overreacts in response to an antigen)
 - cancers of the immune system
- Lots of research is still undergoing on this topic consanguineous and non-consanguineous marriage. Many researchers submitted more controversy results.
- Consanguineous marriage is common in rural areas due to the villagers thought of holding property within the family itself and the relationship maintenance. This research is mainly due to create an awareness based on this topic particularly to the rural people with the attested proof of the health reports.

FUTURE ENHANCEMENT

- I wish to do further research to find the accurate reason behind the immune power differentiation from person to person and thereby how to boost up the immune power to fight against the diseases.
- I want to create awareness to the rural people about the major difficulties the children are facing due to consanguineous marriage.

ACKNOWLEDGEMENT

In a warm-hearted state and with intense pleasure, I bow myself and adore the **ALMIGHTY** for his grace and immeasurable blessings showered upon me all throughout my life.

Knowledge in itself is a continuous process. I would have never succeeded in completing my task without the cooperation, encouragement and help provided to me from various personalities.

I wish to express my sincere thanks to my School Management, our Correspondent **Mr.A.Sathakkathullah M.Tech** and our Principal **Mrs.R.Sameem M.Sc, B.Ed., PGDCA** and our school admin people.

With deep sense gratitude I express my sincere thanks to our Science Coordinator, **Mrs.M.Taj Nisha M.Sc, B.Ed, B.A.** and to my esteemed guide teacher **Ms.C.Dinesha B.Sc, B.Ed** for her valuable guidance.

I would like to express my deepest gratitude to **Dr. K. Syed Mubarak, MD., (AM)** for his medical guidance throughout the project and to **Ishanth Diagnostics Laboratory** for helped me in taking the blood samples and report and provided me the permission to observe their lab room while testing the blood samples.

A special thanks to our teacher **Mrs. Shithick Sunaitha B.Sc B.Ed** and **Mrs. Shameem Banu B.Sc** for their help in collecting the surveys.

Last but not least! I want to thank all our school teachers and my parents who provided me encouragement throughout the project. And thanks to my friends for their help in my project.

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