PHOBIA PALETTE: STATISTICAL INSIGHTS AND ANALYSIS INTO FIVE COMMON PHOBIAS

AN EXTREME OR IRRATIONAL FEAR OF OR AVERSION TO SOMETHING

PHOBIAS PLAETTE: STATISTICAL INSIGHTS AND ANLASIS INTO FIVE COMMON PHOBIAS

Egyptian Russian University

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STA 204 Project

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Abstract:

Phobia is one of the biggest problems a person can face, so our team decided to study whether phobias are of Five types by asking questions to determine whether the person faces this phobia or not.
This study was analyzed using SPSS, our analysis consists of two parts:
Descriptive analysis where we used charts and numerical measures to describe our data (frequency tables, pie charts, bar chart, ...), Inferential analysis where we used statistical tests to test our point estimates (chi square test, Crosstabulation, Regression).

1. Introduction

Phobia Is an extreme and irrational fear that causes a person to panic and panic as a reaction when exposed to a specific thing, animal, or place. Phobia is a type of anxiety disorder, but the fear and anxiety resulting from it are linked to a specific thing and disappear when it disappears. There are many types of phobias, but we talked about five types: Hemophobia, Acrophobia, Zoophobia, Nyctophobia, Social anxiety Hemophobia: is the fear of blood. Individuals may experience intense anxiety or panic when encountering blood, leading to avoidance of situations involving blood. Acrophobia: extreme fear of staying in high places Zoophobia is the fear of animals Nyctophobia: is the fear of the dark or night. anxiety when a person Is in dark or low-light environments. Social anxiety: It is fear or anxiety about some social situations.

2. Methodology

The study was conducted by taking a sample of 90 people. To fill out this questionnaire, Google Form is used. The sample was from Cairo. Our study included Five Types of phobias detection.
The study is based on 5 main variables of phobia Hemophobia, Zoophobia, Acrophobia, Social Anxiety, Nyctophobia.
These are the types of phobias, and the impact of each phobia on students is studied through our charts and demographic variables.
The Statistical Package for the Social Sciences (SPSS 2022) was used.
And metadata are extracted from it to analyze the data and create frequency tables (frequency, percent frequency). In Inferential statistics, (Chi-square statistic, cross-tabulation, regression) are used. Excel is also used to create bar charts and pie charts.

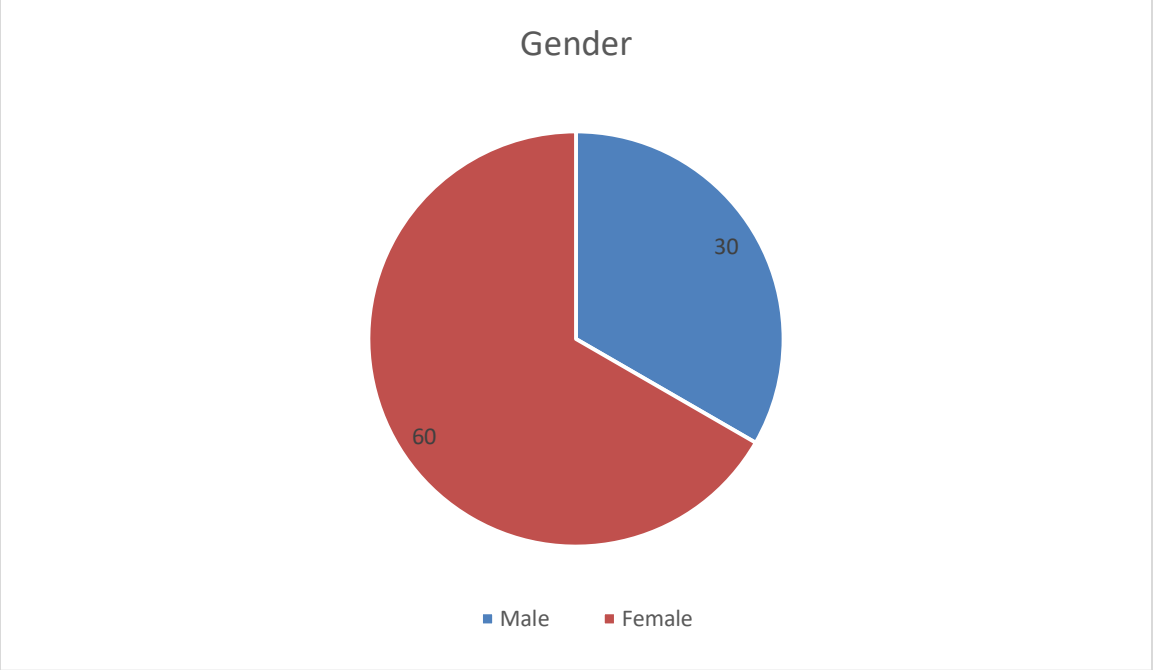
Demo-graphics variables:

- Gender
- Age

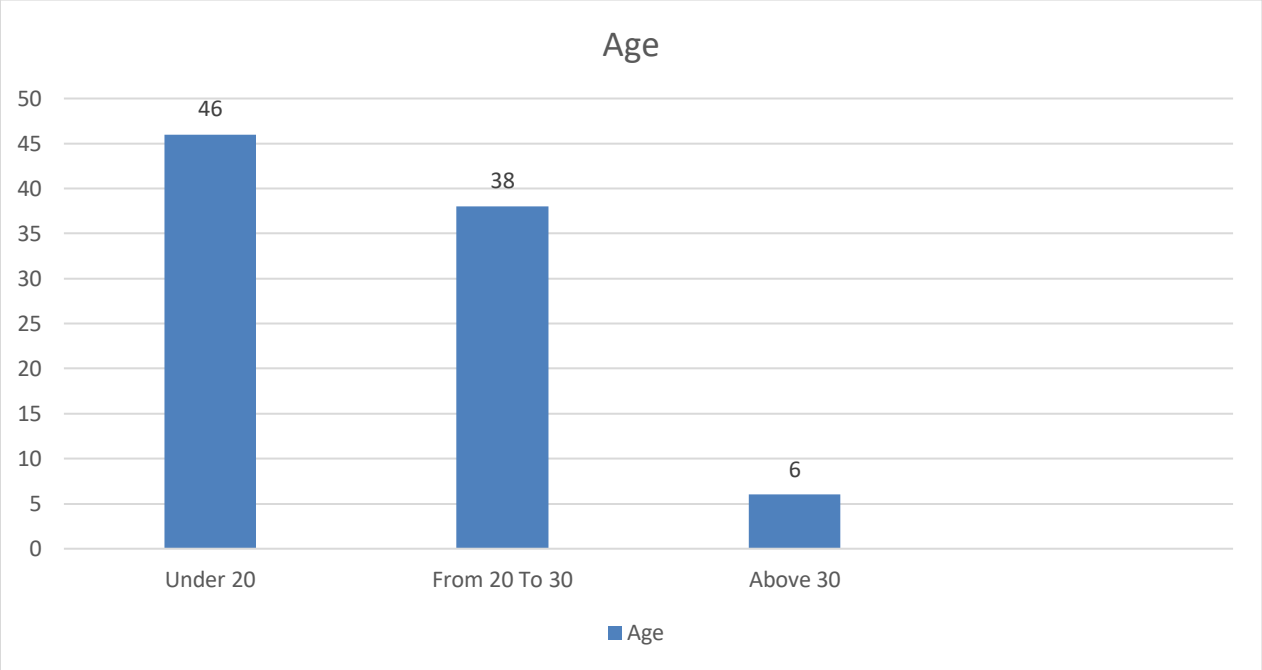
3. Analysis

3.1 Descriptive analysis:

variable	Category	Frequency	Percentage
Gender	Male	30	33.3
	Female	60	66.7
Age	Under 20	46	51.1
	From 20 To 30	38	42.2
	Above 30	6	6.7



Number of Females that have filled our survey is greater than number of Males, Number of Males represent 33.3% percent of the sample and Number of Females represent 66.7% percent of the sample.



In the sample people who are under 20 are the most who filled the survey number of people who are under 20 is 46, Number people who are (20 to 30) is 38, Number of people who are above 30 is 6.

Likert-Scale description	Likert-Scale interval
Strongly avoid it	1.0 – 1.80
Would avoid it	1.81 – 2.60
Not sure	2.61 – 3.40
Slightly avoid it	3.41 – 4.20
Would not avoid it	4.21 – 5.0

3.2 research variables:

1- Questions that ask for Hemophobia?

No	Questions	Avoidance Level					Mean	SD	General Trend	Rank
		Strongly avoid it	Would avoid it	Not sure	Slightly avoid it	Would not avoid it				
		(1)	(2)	(3)	(4)	(5)				
1	Do you avoid donating blood or seeing medical injections?	17	22	14	17	20	2.96	1.46	not sure	third
2	Do you avoid watching movies or TV shows or images or videos that contain bloody scenes?	22	16	11	20	21	3.00	1.51	not sure	first
3	Do you avoid talking about blood-related matters with others?	13	13	16	16	32	2.58	1.46	not sure	forth
4	Do you avoid participating in sports activities or exercises that might lead to injuries and involve seeing blood?	20	17	12	21	20	2.99	1.48	not sure	second

Descriptive Statistics

	Mean	Std. Deviation	General Trend
Hemophobia	3.3194	.448	Not Sure

2- Questions that ask for Zoophobia?

No	Questions	Avoidance Level					Mean	SD	General Trend	Rank
		Strongly avoid it	Would avoid it	Not sure	Slightly avoid it	Would not avoid it				
		(1)	(2)	(3)	(4)	(5)				
1	Do you avoid being around certain animals	25	20	12	14	19	3.20	1.52	not sure	first
2	Do you avoid going to places where certain animals might be present?	11	10	14	15	40	2.30	1.44	Would avoid it	forth
3	Do you avoid being around or thinking about a certain animal because you have physical symptoms.	13	17	13	18	29	2.63	1.46	not sure	second
4	Do you avoid going to pet stores, animal shelters, restaurants that allow pets, or friends' houses if they have pets?	17	14	11	7	41	2.56	1.61	not sure	third

Descriptive Statistics

	Mean	Std. Deviation	General Trend
Zoophobia	3.4028	.507	not sure

3- Questions that ask for Acrophobia?

No	Questions	Avoidance Level					Mean	SD	General Trend	Rank
		Strongly avoid it	Would avoid it	Not sure	Slightly avoid it	Would not avoid it				
		(1)	(2)	(3)	(4)	(5)				
1	Do you avoid going to or looking out of windows in tall buildings?	26	18	7	11	28	3.06	1.65	not sure	second
2	Do you avoid crossing bridges or walking on elevated platforms?	17	8	17	18	30	2.61	1.49	not sure	third
3	Do you avoid participating in activities that involve heights, such as hiking or rock climbing?	27	19	11	13	20	3.24	1.53	not sure	first
4	Do you avoid flights because of the height?	12	15	12	10	41	2.44	1.52	Would avoid it	forth

Descriptive Statistics

	Mean	Std. Deviation	General Trend
Acrophobia	3.4278	.477	Slightly avoid it

4- Questions that ask for Social Anxiety?

No	Questions	Avoidance Level					Mean	SD	General Trend	Rank
		Strongly avoid it	Would avoid it	Not sure	Slightly avoid it	Would not avoid it				
		(1)	(2)	(3)	(4)	(5)				
1	Do you avoid speaking in public or in front of a large audience?	19	10	18	25	18	2.88	1.42	not sure	first
2	Do you avoid participating in social activities organized by school or work?	12	16	16	15	31	2.60	1.44	Would avoid it	second
3	Do you avoid answering phone calls or text messages to avoid social conversations?	14	11	11	15	39	2.38	1.49	Would avoid it	forth
4	Do you avoid meeting new people to avoid uncomfortable social situations?	15	11	17	12	35	2.51	1.49	Would avoid it	third

Descriptive Statistics

	Mean	Std. Deviation	General Trend
social anxiety	3.3361	.538	not sure

5- Questions that ask for Nyctophobia?

No	Questions	Avoidance Level					Mean	SD	General Trend	Rank
		Strongly avoid it	Would avoid it	Not sure	Slightly avoid it	Would not avoid it				
		(1)	(2)	(3)	(4)	(5)				
1	Do you avoid being in completely dark rooms?	19	10	18	25	18	2.81	1.61	not sure	first
2	Do avoid participating in night time outdoor activities, such as camping or hiking?	12	16	16	15	31	2.49	1.52	Would avoid it	third
3	Do you avoid sleeping with the lights off?	14	11	11	15	39	2.51	1.58	Would avoid it	second
4	Do you avoid thinking about the dark?	15	11	17	12	35	2.41	1.53	Would avoid it	forth

Descriptive Statistics

	Mean	Std. Deviation	General Trend
Nyctophobia	3.4639	.518	Slightly avoid it

4. Inferential Analysis

4.1 Independent Sample T Test

		Sig.	t	df	Two-Sided p	95% Confidence Interval of the Difference	
						Lower	Upper
Hemophobia	Equal variances assumed	.317	.276	88	.783	-.413	.547
Zoophobia	Equal variances assumed	.071	.675	88	.501	-.348	.706
Acrophobia	Equal variances not assumed	.004	3.385	71.852	.001	.340	1.317
Social anxiety	Equal variances assumed	.447	2.204	88	.030	.056	1.093
Nyctophobia	Equal variances assumed	.933	1.614	88	.110	-.107	1.041

H0: μ1 − μ2 = 0 H1: μ1 − μ2 ≠ 0

- There are five phobias, in hemophobia the p-value obtained from the t-test for the difference between the two independent groups is greater than the chosen significance level of 0.05. Therefore, we accept the null hypothesis, indicating strong evidence in favor of a significant difference between the groups. This supports our null hypothesis. This suggests that there is not a statistically significant difference between the groups based on the data.

- In Zoophobia, the p-value obtained from the t-test for the difference between the two independent groups is greater than the chosen significance level of 0.05. Therefore, we do not have sufficient evidence to reject the null hypothesis. This suggests that there is not a statistically significant difference between the groups based on the data.

- In Acrophobia, the p-value obtained from the t-test for the difference between the two independent groups is less than the chosen significance level of 0.05. Therefore, the null hypothesis is not accepted, indicating strong evidence in favor of a significant difference between the groups. This doesn't support null hypothesis. This suggests that there is a statistically significant difference between the groups based on the data.

- In social anxiety, the p-value obtained from the t-test for the difference between the two independent groups is less than the chosen significance level of 0.05. Therefore, the null hypothesis is not rejected, indicating strong evidence in favor of a significant difference between the groups. This doesn't support null hypothesis. This suggests that there is a statistically significant difference between the groups based on the data.

- In Nyctophobia, the p-value obtained from the t-test for the difference between the two independent groups is greater than the chosen significance level of 0.05. Therefore, we do not have sufficient evidence to reject the null hypothesis. This suggests that there is not a statistically significant difference between the groups based on the data.

4.2 Chi-square

Table (1): Do you avoid donating blood or seeing medical injections?

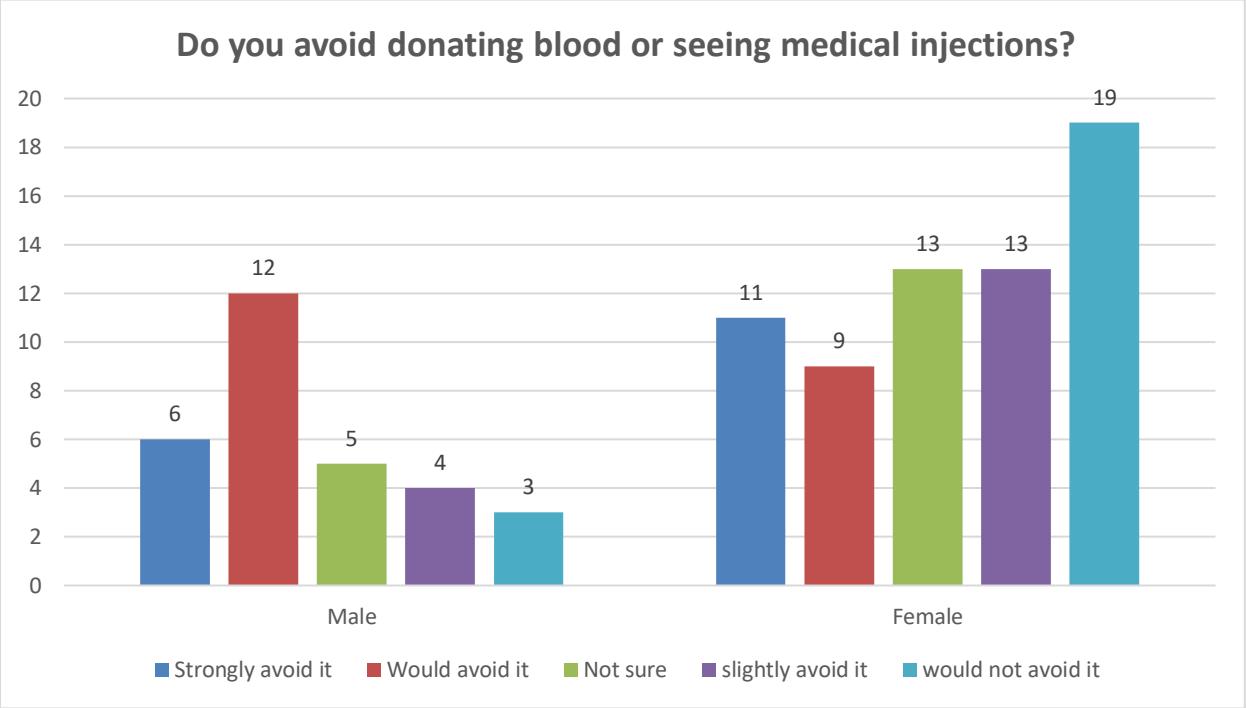
Crosstab

		Strongly avoid it	Would avoid it	Not sure	Slightly avoid it	Would not avoid it	Total
Gender	Male	6	12	5	4	3	30
	Female	11	9	13	13	19	60
Total		17	21	18	17	22	90

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	10.117[a]	4	.039

p_value obtained from chi-square for independence = .039 so we reject h_0 at level of significance = 0.05 because p_value is less than level of significance 0.05 so it is strong evidence for the relation between gender and avoiding donating blood and seeing medical injections.



- For male maximum frequency is " would avoid it " that equal 12 & the minimum frequency is " would not avoid it " that equal 3 means that most of our sample for male gender would avoid donating blood.

- For female maximum frequency is " would not avoid it " that equal 19 & the minimum frequency is "would avoid it" that equal 9 means that most of our sample for female male gender would not avoid donating blood.

Table (2): Do you avoid being in completely dark rooms?

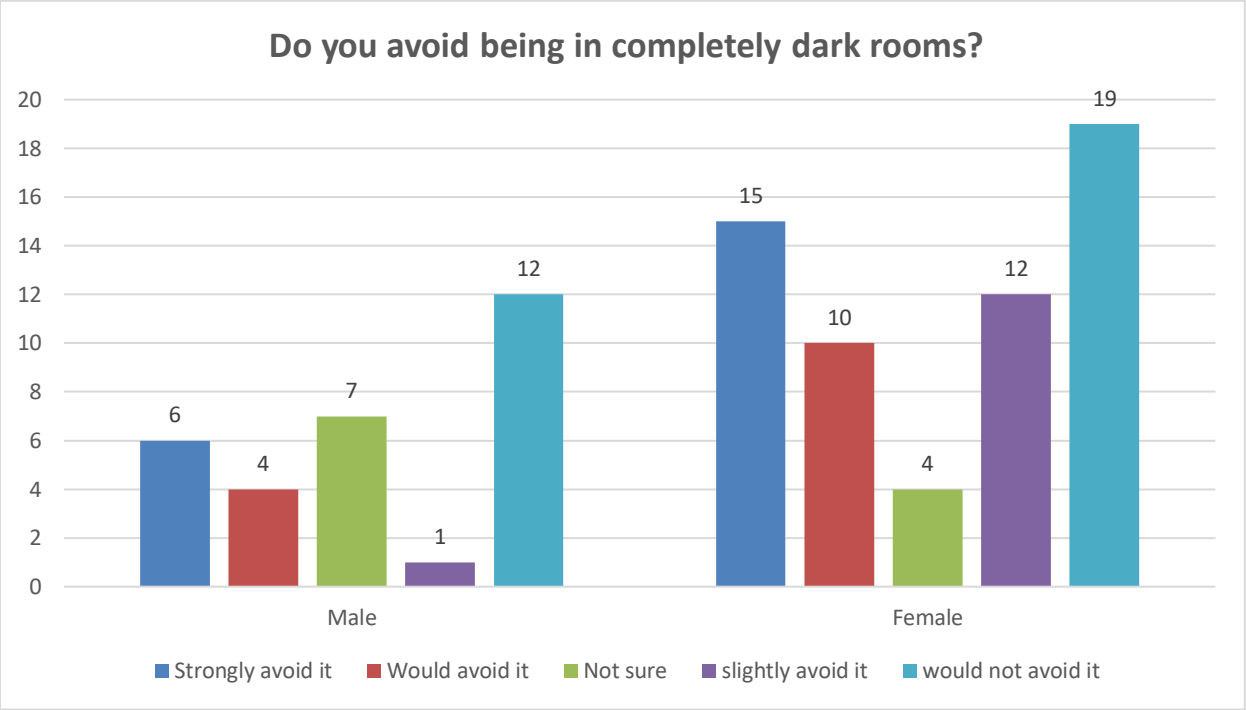
Crosstab

		Strongly avoid it	Would avoid it	Not sure	Slightly avoid it	Would not avoid it	Total
Gender	Male	6	4	7	1	12	30
	Female	15	10	4	12	19	60
Total		21	14	11	13	31	90

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	9.152[a]	4	.057

p_value obtained from chi-square test for independence = 0.57 so we do not reject h_0 at level of significance 0.05, because p_value is greater than level of significance 0.05 , we can conclude from that there is no relationship between being in dark rooms and gender.



- For male maximum frequency is " would not avoid it " that equal 12 & the minimum frequency is " slightly avoid it " that equal 1 means that most of our sample for male gender would not avoid being in dark rooms.

- For female maximum frequency is " would not avoid it " that equal 19 & the minimum frequency is " not sure " that equal 4 means that most of our sample for female gender would not avoid being in dark rooms.

Table (3): Do you avoid watching movies or TV shows or images or videos that contain bloody scenes.

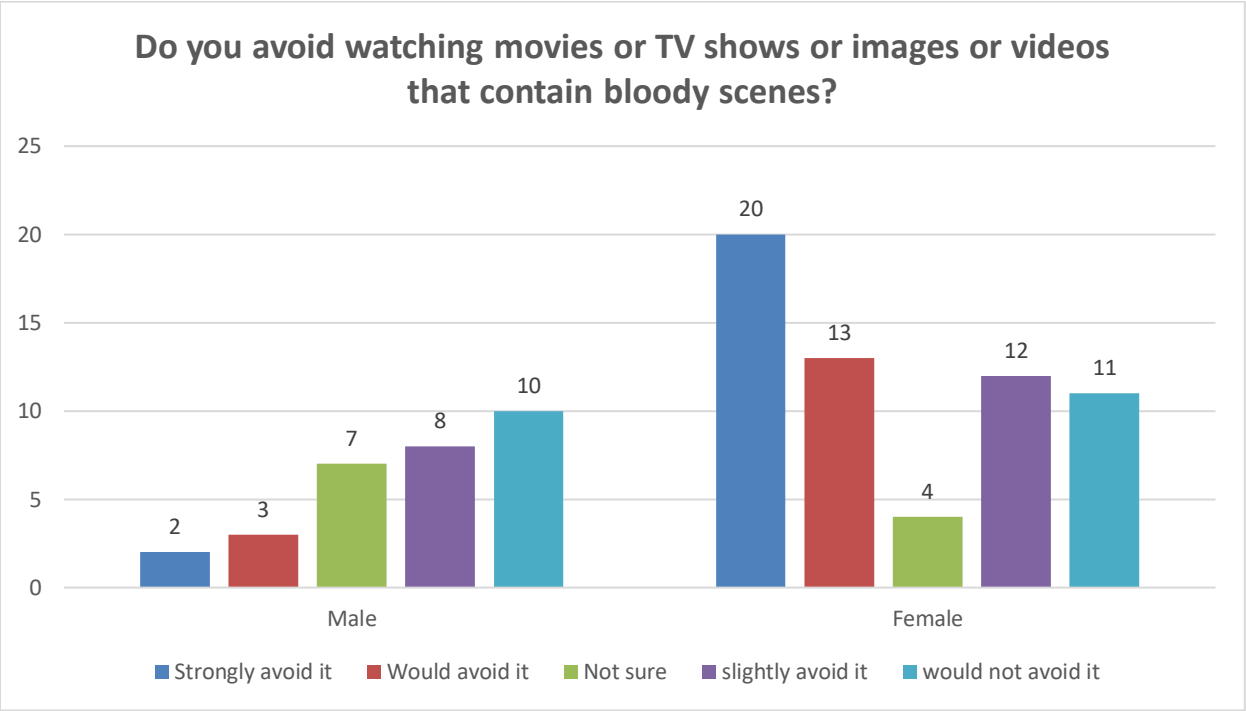
Crosstab

		Strongly avoid it	Would avoid it	Not sure	Slightly avoid it	Would not avoid it	Total
Gender	Male	2	3	7	8	10	30
	Female	20	13	4	12	11	60
Total		22	16	11	20	21	90

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	14.223[a]	4	.007

p_value obtained from chi-square test for independence =0.007 so we reject h_0 at level of significance 0.05, because p_value is smaller than level of significance so there is relationship between gender and avoid watching movies or TV shows or images or videos that contain bloody scenes.



For male maximum frequency is “would not avoid it “that equal 10 & the minimum frequency is “strongly avoid it” that equal 2 means that most of our sample for male gender would not avoid watching blood scenes.

For female maximum frequency is “strongly avoid it “ that equal 20 & the minimum frequency is “not sure” that equal 4 means that most of our sample for female gender strongly avoid watching bloody scenes.

Table (4): Do you avoid crossing bridges or walking on elevated platforms?

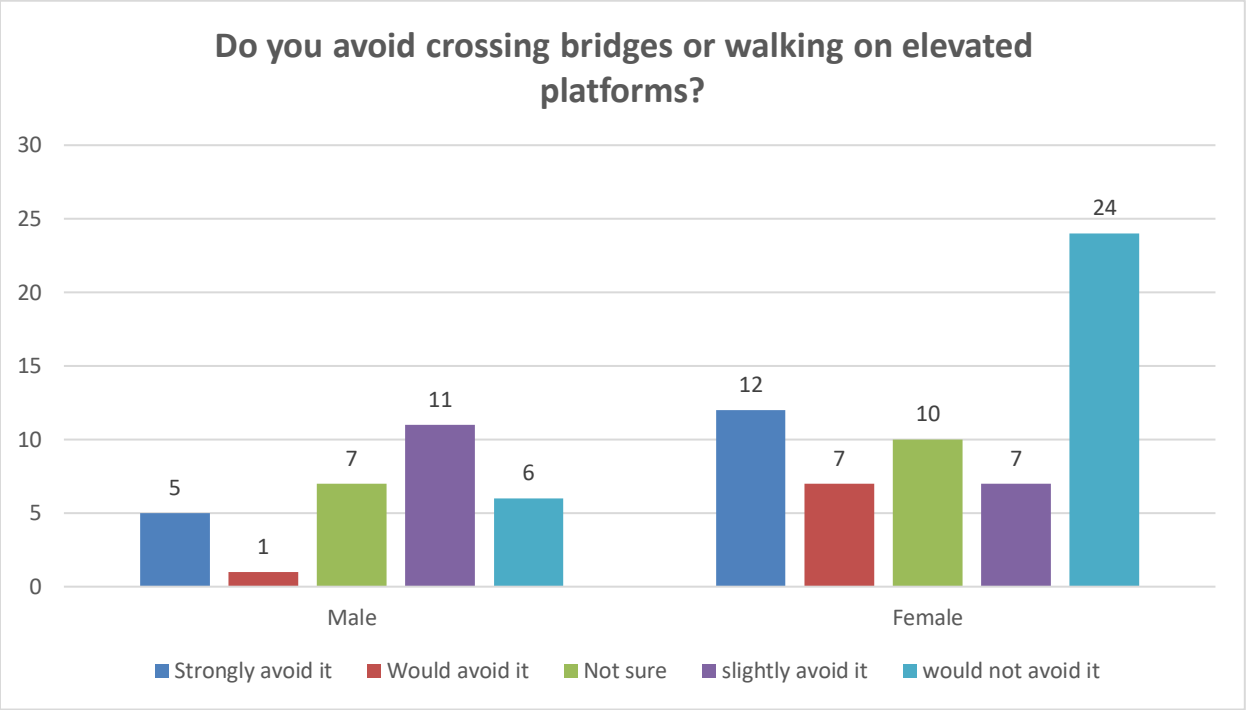
Crosstab

		Strongly avoid it	Would avoid it	Not sure	Slightly avoid it	Would not avoid it	Total
Gender	Male	5	1	7	11	6	30
	Female	12	7	10	7	24	60
Total		17	8	17	18		90

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	10.801[a]	4	.029

p_value obtained for independence =0.029 so we reject h_0 at level of significance 0.05, because p_value is smaller than level of significance so there it is strong evidence to a relationship between gender and avoiding crossing bridges or walking on elevated platforms.



- For male maximum frequency is " slightly avoid it " that equal 11 & the minimum frequency is "would avoid it" that equal 1 means that most of our sample for male gender slightly avoid.

- For female maximum frequency is " would not avoid it " that equal 24 & the minimum frequency is "slightly avoid it" that equal 7 means that most of our sample for female gender would not avoid.

4.3 Regression

1- Hemophobia

Table (1.1): ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.101	1	.101	.084	. .773[b]
	Residual	106.011	88	1.205		
	Total	106.112	89			

a) Dependent Variable: Hemophobia

b) Predictors: (Constant), Age

Table (1.2): Coefficients[a]

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.177	.156		13.983	<.001
	Age	-.054	.188	-.031	-.290	.733

a) Dependent Variable: Hemophobia

p_value obtained = 0.773 that is greater than the level of significance 0.05 we conclude from that we do not reject H_0 so there is no relation between fear of blood “Hemophobia " and the Age overall.

value of b1 = -.031 which means that as Age increase the fear of blood "hemophobia" decrease there is negative relationship it can be assumed the people who are above 70 have no fear of blood.

value of b_0 = -.054 so it can be assumed that when people at the moment of birth who their age = 0 have "hemophobia" by -.054

y^= -.054 - .031 x

x /Age

Y/Hemophobia

2- Zoophobia

Table (2.1): ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.048	1	.048	.034	.855[b]
	Residual	124.431	88	1.414		
	Total	124.478	89			

a. Dependent Variable: Zoophobia

b. Predictors: (Constant), Age

Table (2.2): Coefficients[a]

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.351	.169		13.937	<.001
	Age	-.037	.203	-.020	-.184	.885

a) Dependent Variable: Zoophobia

p_value obtained = .855 that is greater than the level of significance 0.05 so we do not reject h° so there is no relation between fear of animals and age "zoophobia" overall.

value of b1 = -0.20 which means that as age increases the fear of animal's "zoophobia" decrease there is negative relationship between age and "zoophobia" .so it can be assumed that children have fear of animals more than adults.

value of b_0 = -.037 means that at the moment of birth when age = 0 the fear of animal's "zoophobia" = -.037.

y^ = -.037 - .20 x

x/ Age

y/zoophobia

3- Acrophobia

Table (3.1): ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.325	1	.325	.206	.651[b]
	Residual	138.650	88	1.576		
	Total	138.975	89			
b) Dependent Variable: Acrophobia						
c) Predictors: (Constant), Age						

Table (3.2): Coefficients[a]

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.129	.178		11.956	<.001
	Age	.097	.215	.048	.454	.651
d) Dependent Variable: Acrophobia						

The obtained p_value for independence = .651 is greater than level of significance = 0.05, we can conclude from that we do not reject h_0 so there is no relation between fear of heights "Acrophobia" and age.

value of b1 = .048 means that as age increases by this value the fear of heights increases positive relationship so it can be assumed that people who are above 60 are having "Acrophobia" more than children at the age under 10.

value of b_0 = .097 means that at the age = 0 at the moment of birth it can be assumed that people have fear of heights "Acrophobia" = .097

y^= .097 + .048 x

x/Age

y/ acrophobia

4- Social Anxiety

Table (4.1): ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.465	1	4.465	3.211	.077[b]
	Residual	122.372	88	1.391		
	Total	126.837	89			
e) Dependent Variable: Social Anxiety						
f) Predictors: (Constant), Age						

Table (4.2): Coefficients[a]

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.202	.167		13.162	<.001
	Age	.361	.202	.188	1.792	.077
g) Dependent Variable: Social Anxiety						

p_value obtained for independence = .077 is greater than level of significance =0.05 so we do not reject h_0 so there is no relationship between age and the social anxiety phobia.

value of b1 =.188 which means that when age increase the social anxiety increases by this value positive relationship, we can conclude from our sample that probability of children under 10 are the most who do not have social anxiety and value of b_0 = .361 means that at the age = 0 at the moment of birth we can assume that social anxiety phobia in people = .361

y^ = .361 + 188 x

x/ Age

y/ Social Anxiety

5- Nyctophobia

Table (5.1): ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.494	1	.494	.288	.593[b]
	Residual	150.868	88	1.714		
	Total	151.362	89			

a) Dependent Variable: Nyctophobia

b) Predictors: (Constant), Age

Table (5.2): Coefficients[a]

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.386	.186		12.844	<.001
	Age	.120	.224	.057	.537	.593

a) Dependent Variable: Nyctophobia

p_value = .593 is greater than "level of significance" which = 0.05, we do not reject h_0 so there is no relationship between Age and the fear of dark "nyctophobia".

value of b1=.057 means when age increase by this value the fear of dark "Nyctophobia" increase there is positive relationship so we can conclude that when people get older the feel fear of dark increases more, value of b_0 =.120 which means that at age = 0 can be assumed that people have fear of dark = .120

y^= .120 +.057 x

x/ Age

y/ Nyctophobia°

Conclusion:

Based on the statistical analysis of the impact of phobia in our sample, we can conclude that phobia has a greater impact on the group under the age of twenty, and the data indicate that individuals who are exposed to a certain type of phobia are the most vulnerable to major pressures in their lives due to excessive and continuous fear accompanying the stimuli that are exposed to it. It is possible for a person to have more than one phobia at the same time, and this is considered more dangerous because it will lead to excessive anxiety. However, it is important to note that phobias exist in different proportions among individuals. An individual may have a small percentage of a type of phobia, and another person may largely have the same phobia. The percentage of phobias varies from one person to another. It is possible for a person to try to overcome his phobia through repeated exposure to the stimuli that cause this phobia, and he may succeed in overcoming it.

ملخص:

استنادًا إلى التحليل الإحصائي لتأثير الفوبيا في عينتنا، يمكننا الاستنتاج بأن الفوبيا تؤثر بشكل أكبر على الفئة العمرية دون العشرين، وتشير البيانات إلى أن الأفراد الذين يتعرضون لنوع معين من الفوبيا هم الأكثر عرضة لضغوط كبيرة في حياتهم بسبب الخوف الزائد والمستمر المصاحب للمحفزات التي يتعرضون لها. من الممكن للشخص أن يعاني من أكثر من نوع واحد من الفوبيا في نفس الوقت، وهذا يعتبر أمرًا خطيرًا لأنه سيؤدي إلى تزايد القلق بشكل مفرط. ومع ذلك، يجدر بالذكر أن الفوبيا تظهر بنسب مختلفة بين الأفراد. يمكن للشخص أن يعاني من نسبة صغيرة من نوع معين من الفوبيا، بينما قد يعاني شخص آخر بشكل كبير من نفس الفوبيا. تتفاوت نسب الفوبيا من شخص إلى آخر. من الممكن للشخص محاولة التغلب على فوبيته من خلال التعرض المتكرر للمحفزات التي تسبب هذه الفوبيا، وقد ينجح في التغلب عليها.

5. Appendix


Five types of phobia.docx


new spss.sav


Copy of phobia 2.xlsx


regressionspss.spv


Output2.spv


Output3.spv


Output6.spv

Name	ID	TASK	GRADE
Ahmed Mohamed Refaat	224013	Created the tables of frequency &shared in writing comments.	
Mariam Tamer Abdullatif	224015	Written the comments.	
Mahmoud Mohamed Abdullatif	224044	Made the needed graphs using word &adjusted word file.	
Toka Khaled	224052	Created and monitored google form.	
Mostafa Ibrahim	224156	Got out the needed tables and numerical info from spss.	
Menna Atef	224201	Wrote the intro, methodology, Abstract &Conclusion.	
Yehia Amr	224042	Data entry to spss.	
Amr Mohamed	224177	wrote the frequency tables and shared in creating graphs.	

- All shared in filtering and choosing the questions.
- All shared in review and editing the needed comments.