Introduction

Blood is the chief source of energy for human body. Body utilizes glucose through process of cellular respiration to generate ATPs [1]. Blood sugar level is the estimation of glucose level in the blood of an individual [2]. The amount of sugar in blood is maintained through homeostasis. Two key hormones responsible for this homeostasis are Insulin and Glucagon [3]. Insulin is produced by beta cells of pancreatic islets. Insulin is involved in the conversion of extra blood sugars into glycogen. Glycogen is the stored form of sugars. It is usually stored in skeletal muscles and livers. On the other hand, Glucagon which is secreted by alpha cells of pancreas is involved in conversion of stored glycogen into glucose. This conversion occurs when blood is low on sugar level and body needs energy. Normally four grams of glucose is present in blood of an adult human [2].

Mean of Normal blood glucose level for non-diabetics is 5.5 mmol/L or 100 mg/dL and is maintained between 3.9 mmol/L (70 mg/dL) to 7.1 mmol/L (130 mg/dL) (Advameg). But for diabetics advised range before eating is 90 mg/dL to 130 mg/dL, while after eating should be less than 180 mg/dL [4]. Different types of tests are available to test the glucose level. These include Glucose Tolerance Test, random glucose test, postprandial test, and fasting blood sugar (FBS) test [5].

Glucose Tolerance Test involves the time period in which the given sugar is removed from the blood. It is generally done for checking insulin resistance [6].

Random Glucose Test is done randomly and sample is taken from a non-fasting individual.

Postprandial Test is done two hours after taking the meal. Fasting Blood Sugar (FBS) test is done after 10 to 16 hours of fast. It is usually done in early morning. Usually two situations are associated with blood sugar levels viz hypoglycemia and hyperglycemia. Hypoglycemia is the situation in which blood sugar levels fall below the normal range as the calculated p value was exact of the standard p value which is p < 0.05. Therefore, the fact that there is a significant relation between individual’s being Suriphobe and their Blood Glucose Level at fasting is proved.
in three kinds, including Social Phobia, Agoraphobia, and Specific Phobia. Social phobia is a type of phobia in which an individual is afraid of the judgmental nature of others [11]. While, Agoraphobia is a general phobia of leaving home or so-called safe place. In contrast, Specific Phobia is a phobia from certain objects, animals, or situation. Musophobia falls under specific phobia. Musophobia is the fear of rats or mice. Musophobia is more prevalent in females and children, rather than males [12]. Upon encountering a mouse or a rat, insular cortex of brain processes it as an intense situation, and amygdala initiates a hormonal signal thus preparing for defensive response [13, 14]. Any type of phobia, if left unchecked can become dangerous for an individual. Treatment of Musophobia involves progressive relaxation, systematic desensitization, medication, virtual reality and hypnotherapy.

Methodology

Study Scheme

This project was designed in a way that almost 136 students were involved from different levels of the same institute i.e. Institute of Molecular Biology & Biotechnology ((IMBB), Bahauddin Zakariya University (BZU), Multan, Pakistan. Main inclusion standard was that individuals must be students of IMBB, BZU and their level must be graduate and post graduate. Our principle purpose was to check the interrelation between two elements which were Blood Glucose measurement and one’s being suriphobic or non-suriphobe. Blood sugar levels were estimated using Blood Glucose meter also known as Glucometer. Questionnaires were distributed among the students asking ‘Are you a sufferer of Suriphobia (Mice Phobia)?’

Blood Sugar Assessment

A Glucometer or Blood Glucose Meter was used for the assessment of one’s blood sugar or glucose level. Glucometer is a digital device with certain components like a meter with small screen for reading, glucose test strips, a lancing device and lancet drum containing lancets. A lancet is inserted into the lancing device and finger is pricked or lanced to get a blood sample on a test bar or strip which is already inserted in the glucometer and then wait for the reading to come. After few seconds a value will appear on the screen representing Blood Glucose level of an individual. Never use one lancet more than one time. Blood sugar has different ranges for fasting and normal. Fasting range varies from 72-100mg/dL while normal range varies from 100-125mg/dL.

Statistical Analysis

Statistical Analysis of the collected data was done by calculating the Average or Mean values and also Standard Deviation (S.D). SPSS, software was utilized for performing t-test and also for the calculation of p-values. Calculated values were compared with standard p-value which was \( p \leq 0.05 \).

Results and Discussion

This study was based upon a questionnaire survey in which individuals were asked about their behavior on experiencing mice that either they are the victims of Suriphobia or not? Our main purpose was to find if there exists any notable interaction between two factors which were one’s being Suriphobia and their fasting blood sugar level. Almost 136 students were involved in this project. They were requested to answer the question mentioned in the questionnaire and their blood glucose level on fasting range was estimated. Total of 62.5% individuals were sufferers of Suriphobia while 37.5% individuals were Non-suriphobes.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Categories</th>
<th>Mutual (Male &amp; Female)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Suriphobe</td>
<td>62.5%</td>
</tr>
<tr>
<td>2.</td>
<td>Non-suriphobe</td>
<td>37.5%</td>
</tr>
</tbody>
</table>

From total 136 individuals, 106 were women which are about 77.9%, while 30 were men which are 22.1% in terms of percentage. Figure 1 is a graph which elaborates the total number of individuals included in this project.

In 136 individuals regardless of men and women, there were about 85 individuals who filled the column yes in the questionnaire which means that they were sufferers of Suriphobia. In the women category, almost 74 women were Suriphobes while in men category about 11 men were Suriphobes. Figure 2 which is Pie Chart elaborates the men and women who were had Suriphobia.

Figure 1: Total of Individuals including Men & Women

Figure 2: Pattern of Suriphobes in Men & Women

Around 51 persons answered that they haven’t any fear from mice which definitely point towards the fact that they were Non-suriphobes. In different sexual categories, 32 women answered that they were Non-suriphobes and 19 men filled the column saying No to Suriphobia. Figure 3 which Pie charts shows the pattern of Non-suriphobes in men and women.

Figure 3: Pattern of Non-suriphobes in Men & Women
In hypoglycemia sugar level is below than normal level of 70 mg/dL. These are hypoglycemia and hyperglycemia. The normal amount of sugars in blood varies from 70 mg/dL to 130 mg/dL and means value of glycogen back to glucose whenever energy is required. There are different types of tests which are used to check the sugar level in the blood. The sample is usually taken before and after meals.

Suriphobia is regarded as the phobia of mice or rats. In this psychological condition a person is feels imminent danger from a mouse or rat even if it’s not dangerous. This phobia is developed through societal conditioning or any kind of accident which a person has faced in childhood. Studies indicate that Suriphobia is more common in females and children rather than males. Whenever a person faces a rat or mouse stimulus a stress signal is produced in the brain and body prepares itself for defence condition.

In this study relationship between blood sugar levels and Suriphobia was tested. For this purpose 136 students were randomly selected from Institute of Molecular Biology and Biotechnology, Bahauddin Zakariya University Multan. Among 136 students, 106 (77.9%) were females and 30 (22.1%) were males. Blood sugar levels were analyzed by calculating mean and standard deviation and then statistical analysis of the data was done using specified statistical softwares. SPSS was the software that was utilized for calculating p-value performing t-test to prove the proposed hypothesis that there is an inter-connection between Individual’s being Suriphobe and their Blood Sugar level at fasting. The standard p-value was set to 0.05 i.e. either less than or equal to 0.05. The calculated p-value was exact 0.05 that proved that there is association between the above mentioned parameters i.e. Individual’s Suriphobia and their normal Blood Sugar level at fasting. Table 2 demonstrates the significance of the results.

**Table 2: Interaction between Individual’s Blood Glucose Level (at Fasting) (Mean ± S.D) and Suriphobia (Mice Phobia)**

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Sexual Class</th>
<th>Suriphobe (Mean ± S.D)</th>
<th>Non-suriphobe (Mean ± S.D)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Men</td>
<td>90.64±7.28</td>
<td>94.58±6.06</td>
<td>0.14</td>
</tr>
<tr>
<td>2.</td>
<td>Women</td>
<td>92.22±6.25</td>
<td>92.22±8.05</td>
<td>0.53</td>
</tr>
<tr>
<td>3.</td>
<td>Mutual</td>
<td>91.14±6.35</td>
<td>93.57±7.78</td>
<td>0.05*</td>
</tr>
</tbody>
</table>

*p≤0.05

**Conclusion**

Sugar level or Glucose level is the quantity of sugars or carbohydrates present in one’s blood. Carbohydrates are utilized by cells via cellular respiration in order to generate ATP energy. The normal amount of sugars in blood varies from 70 mg/dL to 130 mg/dL and means value is almost 100 mg/dL. There are usually two disorders associated with glucose level in blood. These are hypoglycemia and hyperglycemia. In hypoglycemia sugar level is below than normal level of 70 mg/dL, while in hyperglycemia it’s more than normal upper limit of 130 mg/dL. Homeostasis of carbohydrates in blood is maintained by two key hormones namely Insulin and Glucagon. Insulin converts excess blood sugars into glycogen. Opposite to this, glucagon converts glycogen back to glucose whenever energy is required.

Figure 4 which is a Horizontal Bar Graph is a detailed representation of the percentage behavior of the individual’s being suriphobic and non-suriphobic. About 69.8% of the women professed that they were extremely suriphobic in nature, while 30.2% women were non-suriphobes. In the second sexual group, a men group, around 36.7% of the men was suriphobic in nature while 63.3% professed that they didn’t fear from mice and are non-suriphobes.

In other words, out of total 106 females, 69.8% females admitted to be suriphobes and 30.2% females said that they do not fear mice or rat. While, out of total 30 males, 36.7% males replied that they are suriphobic while 63.3% males admitted that they are not suriphobic.

Standard deviation and Mean of the data were calculated using SPSS software, against standard p-value of 0.05. Mutual data of males and females after analysis showed the p-Value of almost 0.05. This value when compared with standard p-value indicates that results are significant because both standard and calculated values are same. Results also indicate that ratio of Suriphobia is more among females rather than males.

**References**

1. Brown DS (2000) the effect of individual and group concept mapping on students’ conceptual understanding of photosynthesis and cellular respiration in three different academic levels of biology classes.
5. Advameg I What is mg/dl and mmol/l? How to convert? Glucose? Cholesterol?
tolerance and impaired fasting glucose. The American journal of cardiology 108: 3B-24B.


