



# PREVALENCE STUDY ABOUT HIGH BLOOD SUGAR AMONG THE PEOPLE ABOVE 35YEARS OLD BASED ON THEIR GROUP OF AGES

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## ABSTRACT

High blood sugar is related to complications and imposes heavy health burdens worldwide and the main causes of the hyperglycemia is the interaction between genetic and environmental risks, medications and a number of other factors are also attributable to the situation. However treatment of high blood sugar may be based on the prophylaxis such as: Exercise, favorable food plan, avoiding stresses instead of insulin therapy when lasting for long time. In the current study the advanced years between 75to 95 years old are vulnerable, and males are frequently affected as the results showed the predominance in high blood sugar either because of alcoholism and obesity. By regular control; checkup, activity may lead to the management of the case.

**Keyword: High, Blood, Sugar, People, diabetes mellitus.**

## INTRODUCTION

Although most people have heard about low blood sugar levels and may be worried it will happen to them, high blood sugar levels are also serious. Over time, these greatly increase the risk for the long-term complications of diabetes. In general, a blood sugar reading of more than 180 mg/dL or any reading above your target range is too high. A blood sugar reading of 300 mg/dL or more can be dangerous. If you have 2 readings in a row of 300 or more, call your provider (Michigan Diabetes Research and Training Centre, 2012).

Understanding blood glucose level ranges can be a key part of diabetes self-management.

Although people usually think about the long-term complications when it comes to diabetes, short-term or acute problems can also occur. Both low blood sugar levels (hypoglycemia) and high blood sugar levels (hyperglycemia) are acute problems (WHO, 2006).

Recent estimates indicate there were 171 million people in the world with diabetes in the year 2000 and this is projected to increase to 366 million by 2030. Diabetes is a condition primarily defined by the level of hyperglycaemia giving rise to risk of microvascular damage (retinopathy, nephropathy and neuropathy). It is associated with reduced life expectancy, significant morbidity due to specific diabetes related microvascular



complications, increased risk of macrovascular complications (ischaemic heart disease, stroke and peripheral vascular disease), and diminished quality of life (WHO, 2006).

There are important differences between (i) defining diabetes to identify an individual with diabetes and the consequent clinical and social implications of this diagnosis and (ii) defining diabetes for epidemiological purposes. In the former the diagnosis requires careful substantiation with retesting on another day unless the person is symptomatic and the plasma glucose is unequivocally elevated whereas in epidemiological studies repeat testing is rarely performed. When repeat testing is performed, approximately 75% of people with diabetes detected in epidemiological studies are confirmed to have clinical diabetes (Umpierrez GE, *et al.*, 1996; Christensen JO *et al.*, 2004).

**AIM:** The current study is based on determination of high blood sugar from different sample collected from outpatients and inpatients above 35 years old at Global hospital found in Chennai -Tamilnadu by using different tests such as: random blood sugar, fasting blood sugar, postprandial blood sugar, glucose tolerance and glycosylated haemoglobin tests.

### **Objectives**

- To determine whether there is high blood sugar in the people above 35 years old.
- To determine in which individuals with high blood sugar may become diabetics.
- To know about the prodromal signs of hyperglycaemia.
- To compare high blood sugar among different people (male and female) above 35 years old.

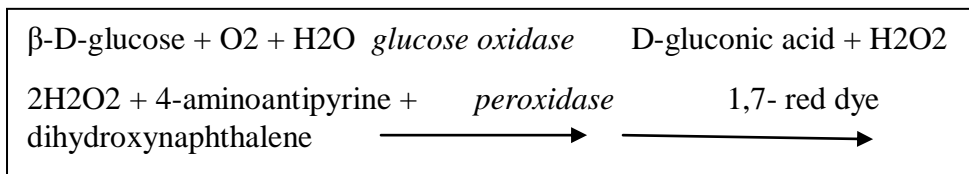
## **II.METHODOLOGY**

The VITROS GLU Slide method is performed using the VITROS GLU Slides and the VITROS Chemistry Products Calibrator Kit 1 on VITROS 250/350/950/5, 1 FS and 4600 Chemistry Systems and the VITROS 5600 Integrated System. The VITROS GLU Slide is a multilayered, analytical element coated on a polyester support. A drop of patient sample is deposited on the slide and is evenly distributed by the spreading layer to the underlying layers. The oxidation of sample glucose is catalyzed by glucose oxidase to form hydrogen peroxide and gluconate. This reaction is followed by an oxidative coupling catalyzed by peroxidase in the presence of dye precursors to produce a dye. The intensity of the dye is measured by reflected light. The dye system used is closely related to that first reported by Trinder (Trinder, 1969; Curme *et al.*, 1978).

### **Test Type and Conditions**

<b>Test Type</b>	<b>VITROS System</b>	<b>Approximate Incubation Time</b>	<b>Temperature</b>	<b>Wavelength</b>	<b>Reaction Sample Volume</b>
<b>Colorimetric</b>	<b>5600, 4600, 5,1 FS,950, 250/350</b>	<b>5 minutes</b>	<b>37 °C (98.6 °F)</b>	<b>540 nm</b>	<b>10 µL</b>

Reaction Scheme



III.RESULTS

Table 1: RANDOM BLOOD SUGAR TEST FOR MALES ABOVE 35 YEARS OLD.

SNO.	AGE INTERVALS	PATIENTS
1.	35-45	0
2.	45-55	1
3.	55-65	3
4.	65-75	2
5.	75-85	1
6.	85-95	4

In the table 1 above have shown that the males of ages between 35-45years old have less number containing high blood sugar while the individuals in the range of 85-95 years old there is high number of people having high blood sugar by using fasting blood sugar test.

Table 2: Random blood sugar test for females above 35 years old.

SNO.	AGES GROUP	PATIENTS
1	35-45	1
2	45-55	2
3	55-65	0
4	65-75	2
5	75-85	4
6	85-95	3

In the table 2 above have shown that the number of hyperglycemic female between 55-65years is less while the number of hyperglycemic individuals (female) in the range of 75-85 years old is higher by using random blood sugar test.

Table 3: Comparison between both sexes according to their group of ages using Random blood sugar test

SNO.	AGE GROUPS	MALES	FEMALE	T0tal
1	35-45	0	1	1
2	45-55	1	2	3
3	55-65	3	0	3
4	65-75	2	2	4
5	75-85	1	4	5
6	85-95	4	3	7



In the table 3 above is the comparison of hyperglycemic individuals between both sexes according their age group by using random blood sugar test they have shown that the number of hyperglycemic male in the range of 35-45years is less while female is high, in the range between 55-65years old the number of hyperglycemic male is higher than female also have shown that in the range of 65-75years old the hyperglycemic individuals is equal in both sexes.

**Table 4: Fasting blood sugar test for male above 35 years old.**

SNO.	AGES GROUP	PATIENTS
1	35-45	2
2	45-55	4
3	55-65	3
4	65-75	3
5	75-85	5
6	85-95	6

In the table 4 above have shown that the number of hyperglycemic patients in males between 35-45years is less while the number of hyperglycemic of individuals (males) in the range of 85-95 years old is higher by using fasting blood sugar test.

**Table 5: Fasting blood sugar test for female above 35 years old.**

SNO.	AGE GROUP	PATIENTS
1	35-45	3
2	45-55	2
3	55-65	3
4	65-75	4
5	75-85	2
6	85-95	7

In the table 5 above have shown that the number of hyperglycemic patients in females between 45-55 and 75-85 years old are less while the number of hyperglycemic individuals (females) in the range of 85-95 years old is higher by using fasting blood sugar test.

**Table 6: Comparison between both sexes according to their group of ages by the help of Fasting blood sugar test**

SNO.	AGE GROUPS	MALES	FEMALE	T0tal
1	35-45	2	3	5
2	45-55	4	2	6
3	55-65	3	3	6
4	65-75	3	4	7
5	75-85	5	2	7
6	85-95	6	7	13



In the table 6 above is the comparison of hyperglycemic individuals between both sexes according their age group by using fasting blood sugar test they have shown that the number of hyperglycemic male in the range of 35-45years is less while female is high in the range of 85-95years old, in the range between 75-85years old the number of hyperglycemic male is higher than female also have shown that in the range of 55-65years old the hyperglycemic individuals is equal in both sexes.

**Table 7: Postprandial test for male above 35 years old.**

SNO.	AGE GROUP	PATIENTS
1	35-45	2
2	45-55	0
3	55-65	1
4	65-75	3
5	75-85	5
6	85-95	9

In the table 7 above have shown that the number of hyperglycemic patients in males between 45-55 years old is less while the number of hyperglycemic individuals (males) in the range of 85-95 years old is increasing by using Postandrial blood sugar test.

**Table 8: Postandrial test for Female above 35 years old.**

SNO.	AGE GROUP	PATIENTS
1	35-45	1
2	45-55	2
3	55-65	3
4	65-75	4
5	75-85	6
6	85-95	8

In the table 8 above have shown that the number of hyperglycemic patients in females between 35-45 years old is less while the number of hyperglycemic individuals (females) in the range of 85-95 years old is higher by using pastprandial blood sugar test.

**Table 9: Comparison between both sexes according to their group of ages by the help of Postprandial test**

SNO.	AGE GROUPS	MALES	FEMALE	T0tal
1	35-45	2	1	3
2	45-55	0	2	2
3	55-65	1	3	4
4	65-75	3	4	7
5	75-85	5	6	11
6	85-95	9	8	17



In the table 9 above is the comparison of hyperglycemic individuals between both sexes according their age group by the help of Postprandial blood sugar test they have shown that the number of hyperglycemic male in the range of 45-55years is less while female is less in the range of 35-45years old, in the range between 75-85years old the number of hyperglycemic male is higher than female also have shown that in the range of 85-95years old the hyperglycemic individuals is increasing in males.

**Table 10: Glucose tolerance test for male above 35 years old.**

SNO.	AGE GROUP	PATIENTS
1	35-45	1
2	45-55	3
3	55-65	2
4	65-75	4
5	75-85	3
6	85-95	6

In the table 10 above have shown that the number of hyperglycemic patients in males between 35-45 years old is less while the number of hyperglycemic individuals (males) in the range of 85-95 years old is increasing by using the help of glucose tolerance test.

**Table 11: Glucose tolerance test for female above 35 years old.**

SNO.	AGE GROUP	PATIENTS
1	35-45	2
2	45-55	3
3	55-65	1
4	65-75	4
5	75-85	6
6	85-95	7

In the table 11 above have shown that the number of hyperglycemic patients in females between 55-65 years old is less while the number of hyperglycemic individuals (females) in the range of 85-95 years old is increasing by using the help of glucose tolerance test.

**Table 12: Comparison between both sexes according to their group of ages by the help Glucose tolerance test.**

SNO.	AGE GROUPS	MALES	FEMALE	T0tal
1	35-45	1	2	3
2	45-55	3	3	6
3	55-65	2	1	3
4	65-75	4	4	8
5	75-85	3	6	9
6	85-95	6	7	13



In the table 12 above is the comparison of hyperglycemic individuals between both sexes according their age group by the help of glucose tolerance test they have shown that the number of hyperglycemic male in the range of 35-45years old is less while female is less in the range of 55-65years old, in the range between 85-95years old the number of hyperglycemic female is higher than male also have shown that in the range of 65-75years old the hyperglycemic individuals is equal in both sexes.

**Table 13: Glycosylated hemoglobin test (HbA1C) for male above 35 years old.**

SNO.	AGE GROUP	PATIENTS
1	35-45	2
2	45-55	3
3	55-65	1
4	65-75	4
5	75-85	5
6	85-95	8

In the table 13 above have shown that the number of hyperglycemic patients in males between 55-65 years old is less while the number of hyperglycemic individuals (males) in the range of 85-95 years old is increasing by using the help Glycosylated hemoglobin test (HbA1C)

**Table 14: Glycosylated hemoglobin test (HbA1C) for Female above 35 years old.**

SNO.	AGE GROUP	PATIENTS
1	35-45	1
2	45-55	3
3	55-65	2
4	65-75	5
5	75-85	4
6	85-95	7

In the table 13 above have shown that the number of hyperglycemic patients in males between 55-65 years old is less while the number of hyperglycemic individuals (males) in the range of 85-95 years old is increasing by using the help Glycosylated hemoglobin test (HbA1C)

**Table 15: Comparison between both sexes according to their group of ages by the help Glycosylated hemoglobin test (HbA1C).**

SNO.	AGE GROUPS	MALES	FEMALE	T0tal
1	35-45	2	1	3
2	45-55	3	3	6
3	55-65	1	2	3
4	65-75	4	5	9
5	75-85	5	4	9
6	85-95	8	7	13

In the table 16 above is the comparison of hyperglycemic individuals between both sexes according their age group by the help of Glycosylated hemoglobin test (HbA1C). they have shown that the number of hyperglycemic female in the range of 35-45years old is less while male is less in the range of 55-65years old, in

the range between 85-95years old the number of hyperglycemic male is higher than female also have shown that in the range of 45-55years old the hyperglycemic individuals is equal in both sexes.

**Table 16: Comparison between both sexes using all tests.**

Tests	Random blood glucose test	Fasting blood glucose test	Postprandial blood glucose test	Oral Glucose tolerance test	Glycosylated hemoglobin test	Totals
Males	11	23	20	19	23	106
Females	17	21	24	22	22	96
Totals	28	44	44	41	45	202

In the table and figure number17 have shown the Comparison between both sexes using all tests and show the total number of patients in each every test, in all test i had done in general the hyperglycemic patient number in males is higher than the total number of hyperglycemic patient in females, the total number of hypoglycemic patient in males is 106 while the total number of hyperglycemic patient in female is 96.

#### IV.CONCLUSION

Hyperglycemia is a common complication of diabetes, but through medication, exercise, and careful meal planning, you can keep your blood glucose level from going too high and that can help you in the long-run. Hyperglycemia is the medical term for high blood sugar, which arises due to the body's inability to remove glucose from the blood so that cells can use it for energy. It is well established that the risk of microvascular and macrovascular complications is related to glycemia, as measured by HbA1c; this remains a major focus of therapy.

In the standard group, lifestyle intervention was the mainstay with pharmacological therapy used only if hyperglycemia became severe.

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