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As you can see diabetes is considered a serious issue by the British government. Type 2 diabetes is becoming more common in the population. The growing numbers of diabetic individuals across the UK are now translating into an “alarming acceleration”.

2 Slide

Local authorities have a duty of care to their residents and as part of the national response to this issue, they have initiated a project to identify the most contributory factors associated with diabetes and develop strategies aimed at countering how these influence the lives of the population.

As a part of the national response to diabetes prevention local authorities who have a duty to improve the health of the people in their area initiated the project to find out the most predictive risk factors of illness to help them in developing and implementing strategies to identify risk groups and tackle risk factors of illness.

3 Slide

Our data analyst team performed an analysis of provided data.

4 Slide

During investigation we used four datasets containing information about 253 680 individuals
22 metrics for each individual were considered, including socio-demographic, behavioral factors and medical history.

The research focused on the socio-demographic and behavioral factors which had the greatest impact on diabetes and the risk factors which could lead to diabetes: BMI, sex, physical activity, income and education level.

5 Slide

As you can see 14% of individuals in the dataset are diabetic.
Only 1% of totals are underweight, less than one third have normal BMI, and 72% are either overweight or obese. Each of these groups is more than one third of all responders. I want to point out that the most substantial group is individuals with obese BMI.

6 Slide

Let's examine the proportions of diabetes in each BMI group.
As you can see there is a positive correlation between BMI and the incidences of diabetes in the groups. The greater the BMI the more diabetic individuals are in the group.
I would like to emphasise that there are almost 4 times more diabetic individuals in the Obese group versus individuals with Normal BMI and twice as many as in the Overweight group.

7 Slide

Known factors contributing to obesity include eating habits and physical activity.
I would ask you to ignore the underweight category as this accounts for only 1% of all individuals.
We have found a negative correlation between the amount of fruits and vegetables eaten, physical activity and BMI. Evidently, fruits are less popular than vegetables in all groups and obese individuals are almost half as active as responders with normal BMI.

8 Slide

Looking at the age,, the data shows that incidences of diabetes in every five year age range increase by 2-3% from 1% in age range 18-24 to 9% in age range 45-49 reaching its maximum of 22% in age range 70-74.

In each age range up to 40-44 the incidence of diabetes in females is 1% more than that in males. At around 40 years, the proportion of diabetic males exceeds the proportion of diabetic females. The difference in diabetes in the two groups increases from 1% in 40-45 to 2% up to age 65 then increasing to 4%-6%.

9 Slide

We tried to understand the reasons for obesity trends using available metrics in the dataset and found that there is a positive correlation within all the factors of level of education, income range and fruit/vegetable consumption. Physical activity as a factor follows a similar trend.

All responders seemed to prefer vegetables over fruit.

In terms of participants within the groups who don't eat enough vegetables, the population of low income/education level individuals is double that of those with high income/education level.

With regard to physical activity, we see that almost triple the proportion of people of low income/education level do not exercise enough compared to those of high income/education level.

10 slide

Unsurprisingly, there is a positive correlation between level of education and income range so income range follows the level of education trend.

Although generally there is a positive correlation between the occurrence of diabetes in individuals and BMI across all education levels and income groups, in the groups with lower education level the incidence of diabetes is often seen even amongst those who are underweight or have a normal BMI. In individuals with higher education levels, the occurrences of diabetes are seen mainly in overweight and obese people.

In a similar way to education, the lower the income, the greater the incidence of diabetes amongst all individuals. However, where income is lower, diabetes is also seen in individuals who are underweight or who have a normal BMI. In individuals with higher income, the occurrences of diabetes are seen mainly in overweight and obese people.

Slide 10

Based on the analysis of the data the following recommendation could be suggested:
Promote healthy eating and physical activity

Raise awareness of the risk factors associated with Type 2 diabetes

Highlight the importance of seeking a diabetes risk assessment and the benefits of early diagnosis

Target all income ranges but special attention should be given to those on lower incomes

Start as early as possible, ideally at primary school level