Summary

- About 4.8 million Koreans (13.7%), aged 30 years or older, had diabetes in 2014. In addition, nearly a quarter of Korean adults had prediabetes (impaired fasting glucose).
- However, three out of 10 persons with diabetes were not aware of their condition. Nearly half persons with diabetes were obese or hypertensive, and one third had hypercholesterolemia. Nearly one-third of persons with diabetes had albuminuria or decreased renal function.
- Although most persons with diabetes (89.1%) were under medical treatment—mostly being treated with oral hypoglycemic agents (80.2%), but 10.8% of those who remained untreated.
- With respect to the overall glycemic control, 43.5% reached the target of HbA1c < 7.0%, whereas 23.3% reached the target when the standard was set to HbA1c < 6.5%, according to the Korean Diabetes Association (KDA) guideline.

Data source

The estimated percentages and the total number of persons over the age of 30 with diabetes and prediabetes were determined from data from the 2013-2014 Korean National Health and Nutritional Examination Survey (KNHANES) conducted by the Korean Centers for Disease Control and Prevention (KCDC) and the Korean Ministry of Health and Welfare, applied to National Population Census in 2014 (34.1 million Koreans were ages 30 years or older; 16.7 million men and 17.4 million women).

SUMMARY of DIABETES FACT SHEET IN KOREA

<table>
<thead>
<tr>
<th>Year</th>
<th>2012</th>
<th>2013</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data source</td>
<td>KNHANES</td>
<td>KNHANES</td>
<td>NHIS</td>
<td>KNHANES</td>
</tr>
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<td>Co-working Institute</td>
<td>CDC</td>
<td>CDC</td>
<td>NHIS</td>
<td>CDC</td>
</tr>
<tr>
<td>Prevalence of diabetes (%), n</td>
<td>10.1% (3.2 M)</td>
<td>12.4% (4.0 M)</td>
<td>8.0% (2.7 M)</td>
<td>13.7% (4.8 M)</td>
</tr>
<tr>
<td>Prevalence of IFG (%), n</td>
<td>19.9% (6.2 M)</td>
<td>19.3% (6.1 M)</td>
<td>25%</td>
<td>24.8% (8.3 M)</td>
</tr>
<tr>
<td>Awareness of diabetes (%)</td>
<td>73.4%</td>
<td>72%</td>
<td></td>
<td>70.7%</td>
</tr>
<tr>
<td>No treatment for diabetes (%)</td>
<td>14.1%</td>
<td>11%</td>
<td></td>
<td>10.8%</td>
</tr>
<tr>
<td>Treatment with insulin (%)</td>
<td>7.4%</td>
<td>11%</td>
<td>16.4%</td>
<td>8.9%</td>
</tr>
<tr>
<td>Glycemic control (&lt; 6.5%, %)</td>
<td>29.5%</td>
<td>27.9%</td>
<td></td>
<td>23.3%</td>
</tr>
<tr>
<td>Hypertension (%)*</td>
<td>54.6%</td>
<td>62.5%</td>
<td></td>
<td>54.7%</td>
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<tr>
<td>Hypertension control (%)*</td>
<td>37%</td>
<td>39.5%</td>
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<td>69.1%</td>
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<tr>
<td>Dyslipidemia (%)§</td>
<td>79.6%</td>
<td>49.5%</td>
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<td>31.6%</td>
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<tr>
<td>Dyslipidemia control (%)§</td>
<td>17.4%</td>
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<td>49.8%</td>
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<tr>
<td>Albuminuria (%)§</td>
<td>27.3%</td>
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<td></td>
<td>23.9%</td>
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<tr>
<td>Chronic kidney disease (%)*</td>
<td>10.0%</td>
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<td>12.5%</td>
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<tr>
<td>Diabetes in ESRD (%)‖</td>
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<td>38.8%</td>
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<tr>
<td>Diabetic neuropathy (%)‖</td>
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<tr>
<td>Diabetic retinopathy (%)§§</td>
<td>18.6%</td>
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<td>15.9%</td>
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</tr>
<tr>
<td>Prevalence of obesity (%)§§</td>
<td>74.7%</td>
<td>44.4%</td>
<td></td>
<td>48.6%</td>
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</tbody>
</table>

Available at http://www.diabetes.or.kr/
The prevalence of diabetes among adults 30 years or older is 13.7% (4.8 Million).

"Nearly 1 of 7 Korean adults have diabetes"

“More than 30% of persons aged ≥ 65 years have diabetes”

"While the prevalence of diabetes get reach the highest at age of 60~69 in men, it is constantly increasing along the age in women"

"The prevalence of diabetes is 1.4 times more common in persons with the lowest quartile of family incomes compared with those with the biggest quartile"

Diabetes is defined by fasting plasma glucose ≥ 126 mg/dL, HbA1c ≥ 6.5%, current anti-diabetes medication(s), or previous diagnosis.
The prevalence of IFG among adults 30 years or older is 24.8% (8.3 Million).

“Nearly 1 of 4 Korean adults have IFG”

Prevalence of IFG

\[
\begin{array}{cccc}
\text{Persons (1,000)} & \text{Men} & \text{Women} \\
\text{Total} & 8,259 & 4,786 & 3,473 \\
30-39 years & 796 & 1,354 & 578 \\
40-49 years & 271 & 668 & 397 \\
50-59 years & 208 & 457 & 251 \\
60-69 years & 300 & 1,042 & 742 \\
≥ 70 years & 457 & 657 & 200 \\
\end{array}
\]

Impaired fasting glucose (IFG) was defined by fasting plasma glucose with 100~125 mg/dL in person without diabetes.

Diabetes Awareness

Three out of 10 persons with diabetes are not aware of their condition, and two of 5 persons with diabetes (diagnosed and undiagnosed) are not taking any treatment for their condition. Diabetes awareness is lowest at age of 40~49 in both sexes.

“Diabetes awareness among adults 30 years or older is 70.7%”
The prevalence of obesity and abdominal obesity in persons with diabetes are 48.6% and 58.9%, respectively.

- BMI, body mass index
- Obesity: BMI ≥ 25.0 kg/m², morbid obesity: BMI ≥ 30.0 kg/m²
- Abdominal obesity is defined by using waist circumference ≥ 90 cm for men and ≥ 85 cm for women.

Hypertension in Diabetes

The prevalence and control rate of hypertension in persons with diabetes are 54.7% and 69.1%, respectively.

- Hypertension is defined by systolic/diastolic blood pressure ≥ 140/90 mmHg and/or antihypertensive medications, and control rate is defined by blood pressure less than 140/85 mmHg based on the KDA guideline.
Treatment of Diabetes

Most persons with diabetes (80.2%) are treated with oral hypoglycemic agents, but 10.8% of them have remained untreated.

“In only one out of 11 persons with diabetes is using insulin therapy for glycemic control”

Control Rate of Diabetes

The control rate of glycemia among the persons with diagnosed diabetes is 23.3% for target goal of HbA1c < 6.5% or 43.5% for < 7.0%. However, 14.6% of persons with diabetes have HbA1c ≥ 9.0%.

“In only one of 4 persons with diabetes gets the glycemic target“
Hypercholesterolemia in Diabetes

The prevalence and control rate of hypercholesterolemia in persons with diabetes are 31.6% and 49.8%, respectively.

Hypercholesterolemia is defined by total cholesterol ≥ 240 mg/dL or medication(s) and control rate is defined by low-density lipoprotein cholesterol (LDL-C) < 100 mg/dL based on KDA guideline.

Nephropathy in Diabetes

The prevalence of diabetic nephropathy (albuminuria or decreased eGFR) is 30.3%.

The definition of nephropathy is increased albuminuria determined by albumin-creatinine ratio > 30 μg/mg of creatinine and/or estimated glomerular filtration rate (estimated GFR, eGFR) < 60 mL/min/1.73 m². GFR (mL/min/1.73 m²) by MDRD equation = 175 × (Scr)^(-1.154) × (Age)^(-0.203) × (0.742 if female).
Comprehensive Management of Diabetes

The percentage of comprehensive management in persons with diabetes is 9.4%.

“Only one among 10 persons with diabetes gets a comprehensive management for diabetes and associated co-morbidities”

The comprehensive management is defined by HbA1c < 6.5% or < 7.0%, systolic/diastolic blood pressure < 140/85 mmHg, and LDL-C < 100 mg/dL in persons with diagnosed diabetes based on KDA guidelines.

Health Behaviors in Diabetes

Among persons with diabetes, 27.4% are smokers and 21.9% are high-risk drinkers. And, 37.9% are taking a 30-min walking exercise regularly.

“In men aged 30 ~ 49 years with diabetes, more than half are current smoker and fewer than half are regular exercisers”

Current smoking (percentage of adults who had smoked at least 5 packs of cigarettes (100 cigarettes) during their lifetime and who are currently smokers), high-risk drinking (more than seven glasses in men or five glasses in women on the same occasion on each of 2 or more a week), regular walking exercise activity (5 days or more per week and for 30 minutes or more per activity)