CHAPTER III
THE PILOT STUDY

3.1. Introduction

3.2. Aim and objectives
   3.2.1. Screening of Diabetes Mellitus

3.3. Materials and methods
   3.3.1. Population
   3.3.2. Sample
   3.3.3. Duration of the study
   3.3.4. Inclusion criteria
   3.3.5. Exclusion criteria
   3.3.6. Screening test
   3.3.7. Assessment criteria

3.4. Results of the study

3.5. Summary
3.1. Introduction

It is obvious that the prevalence of type 2 diabetes is increasing rapidly over the past decade. Specific population subgroups stand higher in the rating of the prevalence of the disease than the population taken as a whole. These subgroups have certain attributes or risk factors that either directly invite diabetes or work in combination with other factors. Greater the number of risk factors present in an individual, the greater the chance of that individual developing diabetes. Conversely, the chance of an asymptomatic individual without any risk factors having or developing diabetes is relatively little. The risk of developing type 2 diabetes increases with age, obesity, and lack of physical activity. Type 2 diabetes is more common in individuals with a family history of the disease. It occurs more frequently in women with prior Gestational Diabetes Mellitus or polycystic ovary syndrome and in individuals with hypertension, dyslipidemia, impaired glucose tolerance (IGT), or impaired fasting glucose.

There is considerable difference between diagnostic testing and screening. When an individual exhibits symptoms or signs of the disease, he is subjected to diagnostic tests. Such tests do not constitute screening. The purpose of screening is to identify asymptomatic individuals who are likely to develop
diabetes. Separate diagnostic tests using standard criteria are required after positive screening tests to establish a definitive diagnosis.

Generally, screening in asymptomatic populations is necessary when seven conditions are met: 1) the disease represents an important health problem that imposes a significant burden on the population; 2) the natural history of the disease is understood; 3) there is a recognizable preclinical (asymptomatic) stage during which the disease can be diagnosed; 4) tests are available that can detect the preclinical stage of the disease, and the tests are acceptable and reliable; 5) treatment after early detection yields benefits superior to those obtained when treatment is delayed; 6) the costs of case finding and treatment are reasonable and are balanced in relation to health expenditure as a whole, and facilities and resources are available to treat newly diagnosed cases; and 7) screening will be a systematic ongoing process and not merely an isolated one-time effort.

3.2. Aim and Objectives

3.2.1. Screening of Diabetes Mellitus

Screening is a search for unrecognized disease or defect by means of rapidly applied tests, examinations or other procedures in apparently healthy individuals. The annual health examinations are meant for the early detection of any hidden disease. Today screening is considered a preventive care function and it is a logical extension of health care.
3.3. Materials and Methods

3.3.1. Population: Chottanikkara Panchayath of Ernakulam District and Kadathuruthi Panchayath of Kottayam District are selected for the screening.

3.3.2. Sample: Samples were selected by simple random method from apparently healthy people of the two districts and the sample size was 1000.

3.3.3. Duration of Study: Period of study was limited to 3 months.

3.3.4. Inclusion Criteria: Those who were above the age of 25 years and below the age of 65 years were included in the screening.

3.3.4. Exclusion Criteria: Below the age of 25 years and above the age of 65 years were excluded from the screening and also those who have already been undergoing treatment for diabetes mellitus.

3.3.6. Screening Test

Fasting Blood Sugar (FBS)

Fasting blood glucose: A method for learning how much glucose (sugar) there is in a blood sample, taken after an overnight fast. The fasting blood glucose test is commonly used in the detection of diabetes mellitus. A blood sample is taken in a lab, doctor's office, or hospital. The test is done in the morning before the person has eaten anything.

Normal FBS is 70-110mg /dl.
3.3.7. Assessment criteria

Fasting blood sugar more than 126mg /dl (According to WHO) is diagnosed as Diabetes mellitus.

3.4. Results of the study

Table 17
Percentage of Diabetics

<table>
<thead>
<tr>
<th>Total</th>
<th>Newly detected diabetics</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1000</td>
<td>126</td>
<td>12.6</td>
</tr>
</tbody>
</table>

Out of 1000 screened, 12.6% were diabetics.

Table 18
Gender Study

<table>
<thead>
<tr>
<th>Gender</th>
<th>Diabetics</th>
<th>Non Diabetics</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>36</td>
<td>462</td>
<td>498</td>
</tr>
<tr>
<td>Female</td>
<td>90</td>
<td>412</td>
<td>502</td>
</tr>
<tr>
<td>Total</td>
<td>126</td>
<td>874</td>
<td>1000</td>
</tr>
</tbody>
</table>

Out of 126 diabetics, 36 were males and 90 were females.
### Table 19
**Age-wise Study**

<table>
<thead>
<tr>
<th>Age</th>
<th>Diabetics</th>
<th>Non Diabetics</th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>25-35</td>
<td>22</td>
<td>113</td>
<td>135</td>
<td>16.29</td>
</tr>
<tr>
<td>35-45</td>
<td>41</td>
<td>225</td>
<td>266</td>
<td>15.4</td>
</tr>
<tr>
<td>45-55</td>
<td>39</td>
<td>315</td>
<td>354</td>
<td>11</td>
</tr>
<tr>
<td>55-65</td>
<td>23</td>
<td>222</td>
<td>245</td>
<td>9.38</td>
</tr>
</tbody>
</table>

### Table 20
**Family history and Diabetes**

<table>
<thead>
<tr>
<th>Family history</th>
<th>Diabetics</th>
<th>Non Diabetics</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>112</td>
<td>170</td>
<td>282</td>
</tr>
<tr>
<td>Negative</td>
<td>14</td>
<td>704</td>
<td>718</td>
</tr>
<tr>
<td>Total</td>
<td>126</td>
<td>874</td>
<td>1000</td>
</tr>
</tbody>
</table>
3.5. Summary

1000 apparently healthy individuals, under the age group 25-65 were randomly screened. Duration of study was 3 months. 126 Diabetics were newly detected - 36 males and 90 females. The percentage of diabetics below the age of 30 was 16.29 %, below the age of 40 was 15.4 %, below the age of 50 was 11% and below the age of 60 was 9.38%. Family history was positive in 112 Diabetics and in 170 Non-Diabetics.