Obstacles to and solutions for optimal implementation of primary care for diabetics in Abha, Asir Region, Saudi Arabia

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ABSTRACT

Objectives: The objective of the study is to identify obstacles against optimal implementation of primary diabetic care at the Al-Manhal Primary Health Care Center, Abha, Asir Region, Saudi Arabia. Methods: The diabetic register of the health center was assessed to find out the outcome of diabetic care. Two checklists were also used to compile essential diabetic care. Results: There was a poor degree of diabetic control, diabetic care and compliance which did not reach national targets. The degree of compliance was significantly related to the degree of diabetic care but the degree of control was not statistically significant in relation to the degree of care. The obstacles identified were categorized as "non availability all the time or sometimes" and included finance, manpower, logistics and equipment. Conclusion and recommendations: The methods suggested for the removal of the obstacles were thought necessary and were recommended to other Primary Health Care Centers in Asir Region, Saudi Arabia.

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Keywords: Obstacles, primary diabetic care, primary health center.

Diabetes mellitus is a common problem in Saudi Arabia. The prevalence rate has been found to be 11.8% in males and 12% in females. As the primary health care principles aim at management and treatment common health problems in the community, effort devoted to removing obstacles for effective management and treatment of this disease is not a wasted effort. There is now good evidence that the long term complication of diabetes can be prevented or postponed through good care and control of the disease. The aim of this study is to audit the outcome and care of diabetics in a postgraduate primary health care center for the purpose of identifying the obstacles which could make optimal implementation of a diabetic care program unsuccessful and also to suggest ways of ameliorating the problems and obstacles identified.

Materials and methods Al-Manhal Primary Health Care Center (PHCC), is one of 6 urban PHCCs in Abha, capital of Asir Region of Saudi Arabia and was chosen for this study. Al-Manhal PHCC was the designated center for the training of family physicians for the program of Saudi Council for Health Specialties and also for the Arab Board Postgraduate program in Family Medicine. There are 7 family physicians (including one with a special interest in diabetes) working at the health center.

The diabetic register in the PHCC was used to complete the characteristics of the patients and to assess the outcome of diabetic care in the center. The indicator for the outcome of care was based on the recommendation by the WHO and the national quality assurance protocol. The indicators for outcome of care included the degree of diabetic control, the degree of compliance to appointment, the prevalence of complication, presence of obesity and smoking among adult diabetics (Table 1).

The obstacles regarding essential care of diabetics were determined using two checklists, one for essential care and the other for less essential care. The items on the essential checklist were scored as: present all the time (2 points) present sometimes (1 point) and absent all the time (0) while those on the less essential were scored as either present (1) or absent (0) (Tables 2, 3).

The checklists were compiled independently by the authors and where independent figures did not tally, an average was taken. The obstacles identified were in items of facilities, manpower and equipment and divided into 3, i.e. those that are absent all the time and of priority, those that

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Table 1 - Outcome of Diabetic Care in Al-Manhal PHCC

<table>
<thead>
<tr>
<th>Index</th>
<th>No</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Degree of control</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Good</td>
<td>34</td>
<td>19.8</td>
</tr>
<tr>
<td>Fair</td>
<td>81</td>
<td>47.1</td>
</tr>
<tr>
<td>Poor</td>
<td>57</td>
<td>33.1</td>
</tr>
<tr>
<td>2. Degree of compliance to appointment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Good</td>
<td>15.5</td>
<td>51.4</td>
</tr>
<tr>
<td>Fair</td>
<td>26</td>
<td>9.2</td>
</tr>
<tr>
<td>Poor</td>
<td>111</td>
<td>39.4</td>
</tr>
<tr>
<td>3. Degree of care</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Good</td>
<td>67</td>
<td>25</td>
</tr>
<tr>
<td>Fair</td>
<td>95</td>
<td>25</td>
</tr>
<tr>
<td>Poor</td>
<td>105</td>
<td>39.4</td>
</tr>
<tr>
<td>4. Obesity (BMI &lt;25)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMI &lt;25 normal</td>
<td>113/202</td>
<td>57</td>
</tr>
<tr>
<td>BMI 25-29 overweight</td>
<td>47/202</td>
<td>23.2</td>
</tr>
<tr>
<td>BMI ≥30 obese</td>
<td>40/202</td>
<td>19.8</td>
</tr>
<tr>
<td>5. Smoking</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smokers</td>
<td>13/198</td>
<td>6.6</td>
</tr>
<tr>
<td>Non-smokers</td>
<td>185/198</td>
<td>93.4</td>
</tr>
</tbody>
</table>

are absent sometimes and those that are not available all the time but not on the priority list (Table 4). Data analysis was carried out by SPSS statistical package program. Suggestions and recommendations were then made for methods and process for removing the problems and/or obstacles identified.

Results Two hundred and sixty-seven adult diabetics were registered. They included 156 males (59.2%) and 109 females (40.5%). The mean age was 55.6 ± 15 years. Two hundred and thirty (92%) were married while 20 (8%) were single. Fifty-one (48%) were illiterate while 52% were educated. Ninety-four (56%) were employed and 4 (14%) were unemployed. Missing or unrecorded information was as follows: 17 for marital status, 161 for education and 99 for employment. Thirty-nine cases (16.6%) were type 1 (14.6%) while 228 (85.4%) were type II diabetics. The mean duration of diabetes for all the patients was 5.4 ± years. Nineteen (7.1%) were controlled by diet only and 164 (61.4%) by diet and drugs. The prevalence of diabetes among the patients attending Al-Manhal PHCC was 1.7%. The outcome of care is shown in Table 1. Only 19.8% were adequately controlled, 25% received good care and 51.4% kept their clinic appointments. Nineteen point eight percent were still obese and 6.6% still smoked.

The degree of control and compliance regarding clinic attendance did not reach the national target and the degree of compliance to clinic attendance was found to be significantly related to the degree of diabetic care ($x^2 = 11.12$ df = 4 $p<0.05$). However the degree of diabetic control was not found to be statistically significant in relation to the degree of diabetic care ($x^2 = 1.27$ df=4 $p>0.05$). The problems/obstacles which have been identified as being responsible for poor diabetic outcome are summarized in Table 4 which also shows the identified obstacles/problems from reviewing the checklists for essential and less essential items for diabetic care. These are non-availability sometimes, or all the time, of manpower, finance, logistics and equipment needed for diabetic care.

Discussion Early diagnosis, patients’ education and regular follow up of defaulters through a structured system of surveillance are better carried out in Primary Health Care Clinics. It is now widely accepted that the total burden of caring for diabetes should be shared between the primary and tertiary health care institutions. That being so, the tendency for the government to concentrate more of its financial allocation for diabetic care to tertiary institutes needs to be reviewed.

Based on the result of the checklists for diabetic care the obstacles mitigating against optimal diabetic care were identified as financial, logistic,
Table 4 - Identified obstacles and their solutions.

<table>
<thead>
<tr>
<th>Non Availability</th>
<th>Problems/obstacles</th>
<th>Solution</th>
</tr>
</thead>
</table>
| All the time and on priority list | a. Appointment system and recall of defaulters  
   b. Coordination with hospital diabetic clinic  
   c. Continuous improvement in the system in the PHCC | a. Reorganization of the administrative structure. Record clerk should be designated for appointment and recall of defaulters  
   b. Joint meeting between PHCC representative and hospital. Diabetic clinic representative to discuss issue of common interest  
   c. Regular diabetic auditing |
| Sometimes | a. Blood sugar strips  
   b. Essential diabetic drugs  
   c. Urine protein strips  
   d. Diabetic follow up card  
   e. Health education material  
   f. One doctor with special interest in diabetes  
   g. Direct access to eye specialist | a. Reorganization of purchase order system of PHCC expendable materials so as to make the system more efficient  
   b. Reorganization of the drugs supply and purchasing system. Money should be made readily available for the purchase of such diabetic cards  
   c. Appointment of specialist diabetologist  
   d. Appointment system between eye clinic of Asir Hospital (tertiary institution) and the PHCC should be improved |
| All the time but not on priority list | a. Presence of mini diabetic clinic  
   b. Presence of specialist diabetic nurse  
   c. Direct access to dietitian direct access to chiropodist  
   d. Performance of fundoscopy  
   e. Hemoglobin (glycosilated) estimation | a. Creation of consulting room for mini clinic  
   b. Appointment of a nurse in this field  
   c. Training of a chiropodist and dietitian  
   d. PHCC family physician should undergo in service training in primary eye care  
   e. Improve requisition procedure through the government store for the purchase of materials. Training of laboratory technician in the use of machine |

Equipment and manpower. Removal of these obstacles will lead to a better life for diabetics. The following major suggestions are being put forward for the removal of these obstacles:

1. More cooperation with regard to the care of diabetics between the administrators at the primary and tertiary health institutions.
2. Establishment of a diabetic register at all institutions caring for diabetes and a regular auditing of the registers to assess the structure process and outcome of care.
3. The pharmacists and stores officers should regularly review their stock and liaise with the central supply to make sure that essential diabetic drugs and standard equipment is available.
4. The appointment system should be strengthened and a systematic procedure for identifying difficulties should be organized.
5. A “diabetic week” should be established in which the government will, through the radio, press and other electronic media, make the community aware of diabetes in all its ramifications.
6. Postgraduate scholarship should be awarded to Saudi doctors wishing to make a career in diabetology. In this regard special consideration should be given to female doctors.
7. Ambulance or other vehicles allocated for the diabetic program should be well maintained. Breakdown of these vehicles have often been responsible for the inability of the nurses to make personal contact with defaulters.

Conclusion This is the first audit for diabetic care and its obstacles in the Asir region of Saudi Arabia. The obstacles identified in Al-Manhal PHCC no doubt exist in other PHCCs of the region. Now that methods for removing these obstacles have been suggested it is hoped that the administrators in all the PHCC in Asir region will present a joint effort in the removal of the
obstacles through the Ministry of Health.

References


